CEO Roundtable on Cancer 2025 Annual Meeting

Briefing Document

Each year, the CEO Roundtable on Cancer convenes its members and partners to strengthen the systems that enable progress in cancer prevention, research, and care. The Annual Meeting serves as a forum for connecting scientific, regulatory, and enterprise leadership, presenting precompetitive research, and establishing shared priorities that guide collective action across the oncology ecosystem.

The CEO Roundtable on Cancer 2025 Annual Meeting reflected heightened focus, urgency, and integration across these critical domains. For the first time, the Roundtable convened in Washington, D.C., at the historic Meridian House—signaling both the organization's evolution and the growing imperative for direct engagement with policymakers during a pivotal moment for scientific innovation and regulatory science. SAS Institute, a founding member and enduring partner, joined us in Washington and continues to play a vital role in advancing the Roundtable's data-driven collaborations that accelerate progress against cancer.

This document summarizes the key discussions, themes, and outcomes of the Annual Meeting and serves as a synopsis of the collective perspectives shaping the Roundtable's work in the year ahead.

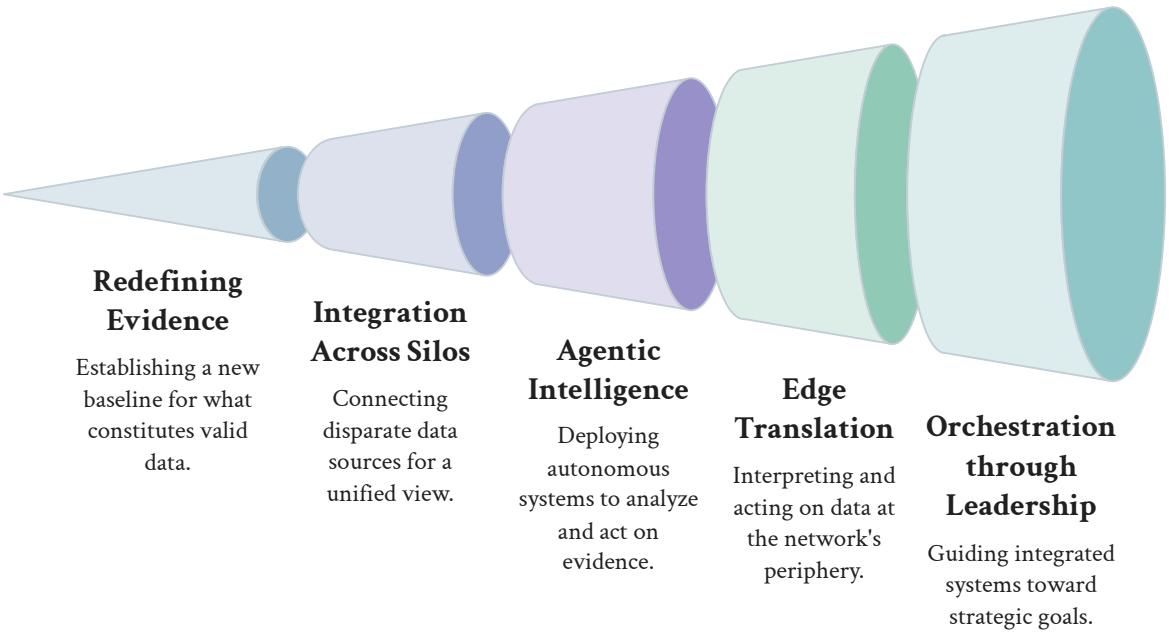
A Note from our CEO

Rebuilding the Architecture of Cancer Innovation

Dear Colleagues,

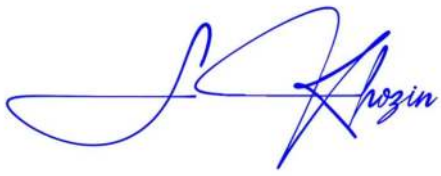
Cancer research is entering a period of structural evolution. Foundational advances in biology—engineered cell therapies, oncolytic viruses, and molecular diagnostics—are converging with digital technologies that measure biology with unprecedented granularity. The next phase of progress will depend not only on discovery but on alignment: between regulators and innovators, data and evidence, capital and care delivery. The CEO Roundtable on Cancer 2025 Annual Meeting, held at historic Meridian House in Washington, D.C., convened leaders from industry, academia, federal agencies, and the investment community to examine how that alignment can be achieved in practice. From the opening networking reception through informal discussions in Meridian's courtyards and gardens, the conversations reflected a common intent: to modernize how evidence is generated, validated, and translated into patient impact. The panels and discussions surfaced several interconnected themes:

1. **Redefining evidence.** Traditional hierarchies of endpoints and trial structures must evolve into adaptive evidence generation systems. This will require deeper coordination among sponsors, regulators, and data stewards to ensure that rigorous evaluation accelerates progress rather than constrains it.
2. **Agentic intelligence.** Artificial intelligence is transitioning from analytical support to active participation in research and development. The challenge is ensuring that autonomy and adaptability in AI systems strengthen scientific rigor and clinical relevance rather than add institutional complexity.
3. **Integration across silos.** The most transformative advances occur at disciplinary boundaries—where molecular science meets computation, where capital allocation meets public health imperatives. The Roundtable's role is to convert these interfaces into operating structures by aligning incentives, data, and decision frameworks.
4. **Translation at the edge of validation.** Many promising innovations—AI-based tumor dynamics quantification, ctDNA endpoints, programmable immunotherapies—exist just beyond current regulatory and evidentiary norms. Moving them into practice requires deliberate collaboration and shared risk. Our work developing an AI-powered tumor assessment model embodies this translational approach: integrating Project Data Sphere's curated datasets with advanced analytics to produce regulatory-grade endpoints capable of redefining how therapeutic response is measured.
5. **Leadership as coordination**. Continued progress in cancer research depends on leaders who can bring coherence to systems that evolved independently—scientific, regulatory, financial, and clinical. Effective leadership today means building connective frameworks that translate across these domains: shared standards, interoperable data, and mutually reinforcing incentives that make progress possible where mandates diverge and priorities compete.

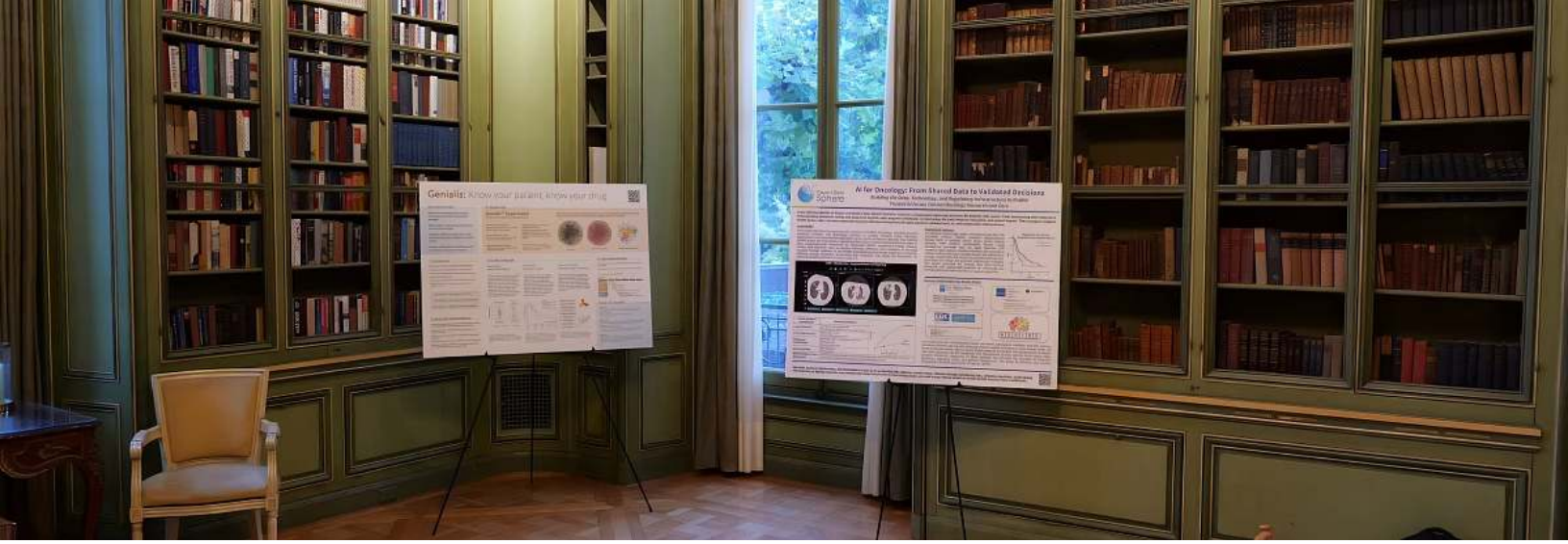


This year's meeting highlighted both the complexity and the promise of our mission. The discussions were technically rigorous and candid, but what stood out most was a shared sense of direction: a recognition that the cancer research and care ecosystem can evolve into a continuously learning system—one capable of absorbing innovation as rapidly as science can produce it.

With appreciation,



Sean Khozin, MD, MPH
Chief Executive Officer
CEO Roundtable on Cancer
Project Data Sphere



Executive Summary

The CEO Roundtable on Cancer 2025 Annual Meeting convened leaders from academia, industry, government, and advocacy at the historic Meridian House in Washington, D.C.—the first time the organization has held its Annual Meeting in the nation's capital. This shift from the Roundtable's traditional venue at SAS Institute in Cary, North Carolina, where the organization was founded enabled direct engagement with regulatory policymakers during a critical period for science and cancer research.

The meeting also introduced a scientific poster session—another first for the Annual Meeting—featuring disruptive innovators pushing the boundaries of cancer research and care. Following numerous requests for participation, the Roundtable selected presenters whose work exemplified themes central to the organization's mission, creating opportunities for informal exchange alongside the formal agenda.

The agenda addressed fundamental challenges spanning regulatory modernization, artificial intelligence integration, evidence generation standards, and next-generation therapeutic platforms. The day opened with a **video message** from **Coach Mike Krzyzewski (Coach K)**, a founding supporter of the CEO Roundtable on Cancer and a longtime advocate for its mission, framing the meeting's urgency around a simple question: "Did you win?"—setting the tone for discussions that followed.

Board Chair Dr. David Reese (SVP and Chief Technology Officer, Amgen) reinforced this imperative by sharing the story of a 50-year-old patient with aggressive, undifferentiated prostate cancer—enrolled in multiple trials when standard therapies offered few options. After the patient's death, his wife asked a question that remains central to the field: *"Why can't we do better?"*

Dr. Sean Khozin, CEO of the CEO Roundtable, called for a culture that converts conviction into coordinated action—the kind of disciplined "1%" leadership that mobilizes others beyond complaint. He cited **Chris Viehbacher (CEO, Biogen),** a fellow architect of the Roundtable and Project Data Sphere (PDS), whose framework distinguishes those who identify systemic problems from those who take responsibility for addressing them. The goal, Khozin emphasized, is to align moral intent with operational follow-through—to ensure that progress in science is matched by progress in care.

Regulatory Transformation

Fireside Chat with FDA Commissioner Dr. Martin "Marty" Makary

The FDA Commissioner engaged in substantive dialogue with **Dr. Peter Pisters,** President of MD Anderson Cancer Center and board member of the CEO Roundtable on Cancer, about regulatory adaptation to accelerating scientific innovation. The conversation addressed fundamental questions about evidence-generation frameworks—specifically, whether traditional development paradigms (lengthy randomized trials anchored by conventional endpoints) remain optimal for the complexity of modern oncology.

Key themes emerged around regulatory flexibility and novel methodologies. The discussion explored single-arm trials with external controls, adaptive platform designs that can modify treatment arms based on interim data, and integration of real-world evidence (RWE) alongside classical trial data. The agency's investment in data-science capabilities and frameworks for RWE signals readiness for methodological evolution. Early engagement between sponsors and the FDA on novel trial protocols was encouraged, with Dr. Makary emphasizing **patient benefit as the** ultimate regulatory concern rather than strict adherence to procedural orthodoxy.

Expanded access programs—including the "Right to Try" pathway for terminally ill patients—were mentioned both as ethical imperatives and as potential learning opportunities. The tension was clearly acknowledged: how to transform individual compassionate-use experiences into systematically useful evidence without compromising patient access. This challenge resurfaced later in immunotherapy discussions, especially for personalized therapies targeting very narrow populations.

Surrogate-endpoint validation remains critical and contentious. The FDA's recent oncology guidance (e.g., "Use of Circulating Tumor DNA for Early-Stage Solid Tumor Drug Development") underscores the scale of evidence required: establishing biomarkers like minimal residual disease (MRD) or ctDNA as validated surrogates demands extensive longitudinal data and multiple trials. The agency continues to balance **accelerated access** via pathways like accelerated approval with rigorous confirmatory-trial requirements.

This session set the regulatory context for subsequent discussions: an agency clearly receptive to innovation, yet still grappling with the fundamental balance between evidence sufficiency and patient protection.

CEO Leadership

Strategic Imperatives at Enterprise Scale

Session: CEO Panel – ***"Leading Transformation at Scale."***

Moderator: Dr. Sunil Verma (SVP Oncology, AstraZeneca).

Panelists: Mr. Christopher Viehbacher (CEO, Biogen), Dr. Josh Bilenker (CEO, Treeline Biosciences), Dr. Kim Rathmell (CEO, OSU James Cancer Hospital; former NCI Director).

This panel brought together three renowned executives with diverse perspectives – a biotech/pharma veteran, a serial entrepreneur, and an academic leader – to discuss how CEOs can drive **enterprise-level change**. Dr. Sunil Verma structured the discussion around four themes: (1) personal leadership reflections in a time of opportunity and challenge, (2) the next wave of oncology innovation, (3) accelerants and catalysts for progress, and (4) a forward-looking vision for the field.

Leadership in a time of change: Dr. Kim Rathmell opened with reflections on her journey from clinician-scientist to NCI Director (2023–2025) and now CEO of a major cancer center. She stressed that *"this is not the time to be cautious. This is the time to be bold."* Bold vision, in her view, is needed to harness the current momentum in oncology research. Dr Rathmell described how she chose to lead The James Comprehensive Cancer Center at Ohio State University to "**make a big difference**" at scale – leveraging the breadth of a large public university (from engineering to business to veterinary science) to attack cancer from all angles. Her leadership focus is on breaking silos and forging *"one big community"* across disciplines, so that innovations in technology, data science, or social science can be integrated into cancer care and prevention. Culturally, she encourages her teams to lean into innovation and not be afraid of failure, reflecting the urgency of the mission.

Mr. Chris Viehbacher drew on his extensive industry experience (including CEO roles at Sanofi and now Biogen) to discuss managing large organizations through cycles of innovation. He observed that the biopharma business model is "**inherently unstable**" – a continual cycle of discovery, commercialization, and patent expiry means companies *"have to constantly reinvent [themselves]"*. This reality can be frustrating (major products eventually lose exclusivity, e.g. *"at one point the music will stop,"* but Viehbacher sees it as a healthy driver of renewal. A key leadership challenge, he noted, is balancing a long-term strategic vision with agility.

"On the one hand, you do have to have some idea of what you want to build," he said, *"but…strategy is extremely important until something interesting comes along."* In other words, leaders must be ready to pivot when disruptive innovation or serendipitous discoveries arise. He cited Merck's unexpected leap into oncology with Keytruda – *"Merck did not have a strategy of getting into oncology"* initially, but once the PD-1 antibody emerged, leadership wisely shifted resources to seize that opportunity. Viehbacher emphasized creating an environment where teams can *"really take advantage of"* opportunities – this means empowering scientists and project leaders to pursue promising leads even if they fall outside the original plan. He also highlighted the value of **cross-pollination** between fields: Biogen, traditionally a neuroscience company, found that advances in oncology immunology (e.g. CD38 targeting) could be applied to autoimmune and rare diseases. As a CEO, he fosters a culture that welcomes external ideas and collaboration across therapeutic areas, because *"you're not going to live off yesterday's successes"* in a fast-moving science landscape.

Dr. Josh Bilenker, who led Loxo Oncology to notable successes and now heads Treeline Biosciences, discussed **innovation at the startup and portfolio level**. He advocated for a very science-driven approach to picking and advancing drug candidates. According to Bilenker, whether running a tumor-agnostic drug program (as Loxo did, pioneering tissue-agnostic approvals) or building an "indication-agnostic" company, the uniting principle is rigorous target selection.

He breaks the problem down into three fundamental questions: **"How do you get conviction that a liability of a disease will bend the disease if you drug it? Will it be safe to the rest of the body if you drug it? And can you drug it effectively?**".

These scientific questions – essentially efficacy, safety, and tractability of the target – should be the primary drivers of decision-making. Bilenker contrasted this with the considerations that sometimes dominate in larger companies or investor discussions: *"how big is the market, how precedented is the regulatory path, how will we sell it, how to identify patients?"*. Those practical questions, he acknowledges, cannot be ignored – but he quipped that he'd "rather take [his] chances on the fundamental rules of biology" than on market forecasting. In his view, a biotechnology company is *not* a purely scalable business defined by platforms or pipelines; rather, *"each [drug program] is a work of art…an opportunity cost"* that displaces other projects. Even the largest pharma firms *"rise and fall based on the success or failure of a single program"*, so one must choose those bets exceedingly carefully. Bilenker's leadership philosophy is thus to maintain a **focused portfolio** of high-conviction programs, tolerate a degree of risk in pursuit of truly impactful mechanisms, and not dilute resources chasing too many marginal ideas. Culturally, this means instilling discipline to kill projects that don't meet the core criteria, while doubling down quickly when compelling data emerges. Verma noted that Loxo's *"tumor agnostic"* drug development model was *"pioneering"*, and Bilenker is effectively carrying that forward at Treeline by remaining flexible and free of rigid platform constraints.

Accelerants and Culture: The panel also touched on how CEOs can **reallocate capital and reshape organizational culture** to enable transformation.

Viehbacher mentioned that big companies must continually rebalance their R&D investment – for instance, Biogen in his tenure has been looking beyond neuroscience to immunology and oncology synergies, which requires shifting budgets and talent accordingly.

Dr. Rathmell, representing an academic perspective, spoke about building a culture of agility in a traditionally slow-moving setting. At NCI and OSU, she encouraged partnerships with tech companies and non-traditional collaborators, bringing in fresh ideas from engineering and AI. All panelists agreed on the importance of *"failing fast"* and not punishing intelligent risk-taking.

The next wave of oncology: When discussing the future, the panel painted an exciting but complex picture. Key areas of promise include data-driven **precision oncology** (identifying ever-smaller subsets of patients for tailored therapies), immunotherapy and cell therapy advances, and harnessing **AI** in R&D. They also acknowledged challenges: the cost of drug development was repeatedly cited as unsustainable. *"Most oncology studies cost $400 million to $1 billion for a single Phase III"*, Verma noted, recalling Chris Viehbacher's estimate. Such economics will force new development models (e.g. more **adaptive trials** and **platform studies** to test multiple therapies efficiently) and greater use of real-world evidence to complement trials. Viehbacher and Bilenker both emphasized **cross-disciplinary learning** – e.g., applying principles from tech or other diseases to oncology – as a way to accelerate progress. Verma highlighted that some of the most innovative oncology drug models are reshaping how we think about indications (e.g., organ-agnostic approvals), which in turn challenges regulatory and commercial norms. The CEOs saw their role as not only developing new products, but also *"rebuilding the ecosystem"* (in Verma's words) so that scientific breakthroughs translate faster into patient care. This entails advocating for policy changes, championing collaborative data initiatives, and addressing patient access and health equity considerations at the leadership level.

The CEO panel underscored that **transformational leadership** in cancer goes beyond managing R&D pipelines – it requires a bold vision, willingness to continually reinvent the organization, and proactive shaping of the external environment. The panelists each exemplified this: Dr. Rathmell pushing the boundaries of an academic center's impact, Viehbacher steering a big pharma through reinvention and external convergence, and Bilenker innovating the biotech model for agility. All three, despite different contexts, converged on a core message: **focus on what truly matters (scientific impact and patient benefit), empower your people to pursue innovation, and be prepared to pivot and act decisively**.

Agentic AI in Clinical Trials

Operational Transformation

Session: Panel – *"Agentic AI in Clinical Trials: Streamlining Clinical Development."*

Moderator: Dr. Michelle Longmire (CEO, Medable).

Panelists: Dr. Kiran Patel (VP Oncology R&D, J&J), Mr. Matthew Ko (CEO, DeepScribe), Mr. James Kugler (Managing Director, EMD Digital), *Warren A. Kibbe, Ph.D., Deputy Director for Data Science and Strategy was unable to attend due to government shutdown.*

This session examined how **agentic AI** – AI systems with autonomous decision-making capabilities – can revolutionize the *operational* side of clinical trials. As Dr. Longmire set the stage, clinical trials remain notoriously slow, complex, and costly, and over 50% of development budgets go to labor-intensive processes. Despite advances in science, the throughput of new therapies has not dramatically improved (*"the number of drugs approved a year hasn't really changed in about 20 years,"* she noted), leading to an untenable timeline of *"200 years"* to address all human diseases at the current pace. Agentic AI – defined as goal-driven AI that can **"look at data and autonomously take action"** toward objectives, while continuously learning – offers a potential solution by automating and optimizing many trial tasks that today bottleneck progress.

Dr. Longmire provided a historical context: earlier waves of AI in healthcare included predictive analytics (circa 2010s) and conversational AI with large language models (~2020s), but *"now here we are in 2025… people are talking about agentic AI"*, which is distinct in its ability not just to inform humans but to initiate and carry out tasks independently. In the clinical trial domain, these "AI agents" could handle everything from **automating site start-up and patient recruitment, to managing electronic patient-reported outcomes (ePRO/eCOA) workflows, to ensuring protocol compliance** – essentially, the myriad of coordination tasks that currently require extensive human oversight.

Longmire emphasized this is about **augmentation**: freeing human researchers from tedious, error-prone tasks and allowing trials to run faster and more efficiently at scale.

Each panelist brought a perspective from their domain. *Operational inefficiencies* were the first target. Dr. Kiran Patel, who oversees oncology trials at J&J, highlighted that study start-up is painfully slow industry-wide.

Basic steps like opening trial sites can take many months. *"Every single piece takes a long time… site activation…takes eight months"* in many cases, he noted. Such delays mean patients wait and costs accumulate without any scientific gain. AI-driven process automation could drastically shorten these timelines – for example, an agentic AI could automatically populate regulatory documents, manage contracting workflows, and track site readiness tasks in parallel, whereas today these happen sequentially with human project managers.

Dr. Patel also pointed to **protocol execution** as ripe for AI assistance: trials involve hundreds of manual checks (eligibility verifications, dosing calculations, visit scheduling, etc.) that an intelligent software agent could perform continuously. By *"rewriting the rules of the workflows nobody really wants to own,"* as Longmire put it, autonomous systems can ensure nothing falls through the cracks.

A second major topic was **data fragmentation and reuse**. Dr. Patel lamented that even within a big company, data is siloed by study and program: *"every company…they all have their own control of the data. Even within [J&J], we work on so many different areas, there's not much harmony…to aggregate our own datasets"*. This fragmentation means we may fail to learn from past trials – the data sit idle once a trial ends. An agentic AI could, for instance, continuously ingest data across trials to find patterns (predictive markers of response, safety signals, etc.). Importantly, Dr. Patel noted regulators themselves hold a treasure trove of clinical data (from all submitted trials) that largely goes unexplored: *"FDA has dataset for all these companies…a huge data[set] that they could potentially use"*. With appropriate privacy and legal frameworks, AI could analyze such aggregated data to inform trial design (e.g. simulate a trial arm using historical controls) or identify redundant efforts. The panel strongly agreed that **sharing and pooling data** – across companies and with regulators – would amplify AI's effectiveness. Achieving this goal requires overcoming legal/competitive barriers, but the potential benefit is enormous insight into disease and drug performance across the industry.

Mr. Matthew Ko brought in the technology perspective from his work with DeepScribe, an AI platform that automatically transcribes and structures doctor-patient conversations. He illustrated how much real-world patient data is currently wasted. In an exam room, a rich dialogue occurs about symptoms, quality of life, etc., but *"it's held for a moment…then it's forced back into this tiny context of the EMR"* – a few notes or checkboxes – *"which [define] medical reality"*.

Once coded, the nuanced narrative is effectively *"destroyed"*. Ko argued that if we "**rethink**" this and instead feed the full, multimodal data (text, voice, maybe even video) into AI systems, we could extract far more insight about patient outcomes. For clinical trials, such a strategy could mean capturing patient experiences in fidelity rather than flattening them into case report forms. He suggested that humans' insistence on understanding every detail might need to soften in the AI era: advanced models can discern subtle patterns in massive data that no individual could. *"Models are able to interpret things beyond human comprehension,"* Ko said – for example, correlating speech patterns or facial micro-expressions with treatment outcomes – and *"we have a natural tendency [to] try to understand everything…we need to let go of that"* to let the AI find signals.

This point raised the issue of **trust and transparency**. Longmire acknowledged that especially in healthcare, *"if it's going to do the job, we need to trust [the AI]…and to trust it…we want to understand the underlying assumptions [and inputs]"*. The panel discussed the importance of **human-in-the-loop design** – AI agents should be transparent, auditable, and have oversight mechanisms. Ko's view was that we must strike a balance: doctors and researchers define the goals and guardrails, but they must also be willing to rely on AI to handle complexity that defies human linear thinking. In practice, this might mean using AI to generate a plan or prediction, and humans validating the results against their domain knowledge.

Mr. James Kugler provided the tech industry perspective, noting that the term **"agentic AI"** might conjure images of a general AI, but in reality we are progressing through increasingly capable narrow AI models. He outlined that truly general AI is still some time away – *"we're still a ways away from [broad emergent models] despite what you hear"*, primarily due to computational limits. However, he sees a *continuum*: in the next 5–10 years, we'll have **"dozens of [foundation] models"** each specialized (e.g. one for protein interactions, one for radiology images, one for clinical operations) that *collectively* cover a wide landscape.

These models will become building blocks that can be mixed and matched. Kugler's team at EMD Digital is already glimpsing this modular future – he described their ability to *"plug and play…the modular components"* of AI pipelines, swapping in different pre-processing or modeling techniques for medical images, for example. The goal is a *user-friendly* AI platform where one can point an AI agent at a task (say, detect tumor progression from scans) and it will autonomously do the heavy lifting.

He also emphasized the need for **auditability** in these pipelines: *"this is strong for regulatory purposes…we can trace the results of our models for reliability"*. This comment aligned with Dr. Patel's earlier point that any AI used in trials must produce evidence regulators can inspect (e.g. documented algorithms, clear validation metrics).

The panel offered concrete **use cases** already emerging: Longmire mentioned her company recently deployed an *"agentic AI for Clinical Research Associates (CRAs)"* to automate trial monitoring tasks. *"Imagine [a CRA's] job – going across 13 different systems for 5–10 sites – the work has shifted from strategic to very tactical,"* she explained. The AI agent can log into multiple trial databases, cross-verify patient data, and flag discrepancies or missing data in real time, tasks that normally consume human CRAs' nights and weekends. Offloading this grunt work allows CRAs to focus on strategic oversight and site relationships.

Another example was patient recruitment: AI agents can sift electronic health records and public data to find eligible patients much faster than traditional site screening. Dr. Patel noted that even finding *one* additional high-risk patient by combing disparate data could be significant. Additionally, **protocol design optimization** was discussed – AI could simulate trial outcomes under different designs, helping planners choose the most efficient approach (for instance, identifying which eligibility criteria actually exclude patients unnecessarily).During Q&A, the **call to action** from each panelist crystallized the discussion.

Dr. Kugler's advocating for was to unblocking **"the critical information sets"**: *"tap directly into the EHR systems, into the corpus of peer-reviewed literature"*, and let modern transformers analyze them together. Right now, much knowledge is stuck in silos (clinical data separated from scientific literature, etc.). *"Without being able to [apply]…transformer models to it, we'll never know"* the connections we're missing. He also commented on policy progress: the new U.S. rules against information blocking in health data are a step forward but *"there's a lot more that needs to be done"*.

Healthcare lacks the "network-style" data sharing agreements seen in finance or telecom, and issues like liability for data breaches need creative solutions (perhaps insurance products to cover institutions that share data). In short, **policy and infrastructure changes** must accompany technical advances.

Dr. Patel's closing ask was for **cross-sector collaboration**: she thanked the Roundtable for convening experts who *"speak very different languages"* (AI engineers vs. clinical researchers) and urged more venues where they can *"sit down together"* to figure out how to make data more available and useful. His call to action: each stakeholder (academia, industry, tech) should commit to *"continuing to work together to make this data available…for good use"* – meaning ethically and securely – *"that ultimately will lead to accelerating drug development"*. The panel ended on an optimistic note: by combining forces, the traditionally slow world of clinical trials can be re-engineered. Agentic AI, while still maturing, was seen as a powerful tool to **streamline trial workflows, uncover hidden insights, and reduce development times**. The consensus was that the technology is advancing rapidly, but its impact will depend on the community's ability to share data and define governance. In the Roundtable's spirit, turning this **"conviction into collective action"** will be key – a theme that resonated throughout the day.

Precision Signals

Ep. 2: Michelle Longmire, MD

Dr. Michelle Longmire, CEO and cofounder of Medable, joins Dr. Sean Khozin on CEORT's new podcast Precision Signals to discus…

Innovator Spotlights

Emerging Technology Platforms

Networking Lunch – *"Innovator Spotlights."*

Moderator: Dr. Jon McDunn (President, Project Data Sphere).

Presenters: Dr. Rafael Rosengarten (CEO, Genialis), Dr. Tony Blau (CEO, All4Cure), Dr. Aaron Smith (Head of AI, Unlearn.AI), Ms. Julie Gerardi (CCO, Bioptimus).

Over a working lunch, four entrepreneurs and innovators delivered rapid-fire **8-minute "spotlight" talks** showcasing emerging technologies poised to advance cancer research and care. These talks provided some of the meeting's most concrete examples of innovation in action. Each presenter highlighted a distinct area where novel tools are making a difference:

Genialis (AI-Driven Biomarkers): Dr. Rafael Rosengarten described how his company is leveraging machine learning to discover and validate biomarkers that can predict patient response to therapies. He noted that as oncology embraces precision medicine (such as targeted drugs and immunotherapies), identifying *which* patients will benefit is paramount. Genialis' platform integrates genomic and transcriptomic data to find patterns – for example, gene expression signatures – that correlate with treatment outcomes.

Rosengarten presented a use case in which an AI-derived biomarker helped reclassify patients in a clinical trial by likely responder status, enabling a simulated trial enrichment that could dramatically improve efficacy signals. A key theme was **making translational data actionable**: instead of producing another list of candidate genes, their AI models produce clinically interpretable scores indicating the presence of, for example, a "DNA repair deficiency signature" or an "immune hot" tumor microenvironment. Such insights can guide trial enrollment and are also being used to rescue shelved drugs by identifying niche populations that would respond. Rosengarten emphasized rigorous validation – using independent cohorts and biological context – to earn clinician trust in these AI biomarkers.

All4Cure (Patient-Centered Data Sharing): Dr. Tony Blau shared the vision behind All4Cure, a platform that directly connects patients, clinicians, and researchers in a collaborative model to accelerate learning from every patient's journey. Blau, an oncologist and researcher, recognized that valuable real-world insights are often lost in isolated medical records or academic publications long after the fact.

All4Cure invites cancer patients (initially focused on multiple myeloma) to share their medical data and experiences in real time, and in return provides them access to a community of experts and co-patients.

Blau recounted examples where crowd-sourced expertise on the platform helped a patient navigate treatment options. One concept he discussed was creating **living case studies**: as a patient tries successive therapies, their outcomes (lab results, imaging, quality of life notes) are continuously logged, and experts can comment or suggest adjustments. Over time, patterns emerge – for instance, signs of an impending relapse might be detected earlier by analyzing trends across many patients' datasets. Blau posed the question of how such real-world evidence could complement clinical trials. He also touched on integrating **liquid biopsies** (e.g. measuring *circulating tumor DNA* longitudinally) as an example question he's considered: *what if we track cfDNA alongside imaging in our community data – could it serve as an early benchmark that an intervention is working?* (He alluded to this during Q&A, suggesting monitoring cfDNA *"longitudinally over time, along with imaging"* as a consistency check .) All4Cure's experiment in radical transparency and patient agency highlights the power of **open-data ecosystems**. Blau concluded by stressing that every patient's story is data, and in aggregate, those stories can point to new hypotheses much faster than traditional research timelines.

Unlearn.ai (Digial Twins): Dr. Aaron Smith spoke about **"digital twins"** in clinical trials – an application of AI that can create virtual control patients. Unlearn's technology builds predictive models of disease progression for individual patients (based on historical data from thousands of past patients) and uses these models to generate an estimated outcome for a patient *if they had received placebo*.

In a controlled trial, these AI-generated placebo outcomes can augment or even replace real control arm data. Smith explained how this can dramatically shorten trials or reduce the number of patients who must receive placebo or standard-of-care, which is both an ethical and practical win. He walked through a recent example: in a Phase II trial in neurology, Unlearn was able to successfully predict control outcomes with high accuracy, allowing the trial to randomize more patients to the experimental drug without losing statistical power. For oncology, the promise is similar. One challenge, Smith noted, is regulatory acceptance – but the FDA has shown openness to innovative designs. In fact, ideas from earlier in the day resonated: during the FDA fireside, the notion was raised of using *"synthetic placebo"* arms and then relying on *"confirmatory studies once we get approval"* . Smith reinforced that this isn't about skipping validation but about **gaining efficiency**. He also highlighted that digital twins rely on having large, high-quality datasets to train disease models – a call back to the importance of data sharing. Unlearn is working on trials in metastatic cancer where accumulating historical patient data (from sources like Project Data Sphere and others) to model tumor trajectories under standard care. **AI-driven simulations** are no longer theoretical; they are being tested now, and in the near future could become a standard part of trial design, accelerating time-to-result while maintaining rigorous evidence standards.

Bioptimus (Foundation Models for Biology): Ms. Julie Gerardi spoke about Bioptimus's ambitious effort to create a *"universal AI foundation model for biology."* Much like large language models (e.g. GPT) have learned from massive text corpora, Bioptimus is developing models trained on vast biological datasets – from genomic sequences and molecular structures to cell images and biomedical literature – with the aim of capturing fundamental features of biology across scales.

Gerardi explained that such a model could be *"plugged into"* many problems: drug target discovery, understanding disease mechanisms, or predicting which molecules will bind a novel protein. She gave an example of how a foundation model might accelerate identifying a new immunotherapy target: by having "learned" patterns from millions of past experiments, the model could predict which rarely-studied immune receptors are most likely to control T cell activity in tumors. Bioptimus recently secured significant funding (she mentioned a $41M investment, referencing a TechCrunch article) to pursue this *"GPT for biology."* A key point was that **interdisciplinary talent** and data are critical – the company has top engineers and scientists working together, and is forging partnerships to aggregate data that individual groups could never generate (including collaborations with research institutes and companies willing to contribute anonymized data). Gerardi also touched on an early result: using their model, they were able to integrate pathology images with genomic data to predict patient outcomes better than either data type alone – a demonstration of the model's ability to capture cross-modal relationships. The long-term vision is an AI that can reason about biology end-to-end, from molecular structure to patient outcomes, potentially transforming tasks like target validation or biomarker discovery that currently take years. She acknowledged this is a moonshot, but incremental benefits are accruing already as components of the foundation model are applied to partner projects (for instance, improving an AI pathology algorithm by infusing it with biological pathway knowledge).

Collectively, the Innovator Spotlights underscored the **ecosystem of innovation** feeding into an evolving cancer research ecosystem. From AI models that learn biology's language, to creative trial designs, to patient-powered networks and smart diagnostics, each presenter showed a facet of how the future might look. A common thread was the emphasis on **data and learning**: whether it's sharing patient data openly, training on decades of prior trials, or combining data types (clinical, molecular, imaging), the innovators are all finding new ways to generate insights faster. These spotlights also complemented the broader panel discussions: for example, Unlearn's digital twins directly address the clinical trial efficiency problem discussed in the AI and FDA sessions, and All4Cure's real-world evidence approach speaks to the calls for patient-centricity and data sharing in policy discussions.

Cancer Innovation Ecosystem

Policy, Capital, Infrastructure

Session: Panel – ***"Aligning Policy, Infrastructure, and Capital for a 21st-Century Cancer Innovation Ecosystem."***

Moderator: Dr. Paul Howard (Executive Director, Public Policy and Corporate Affairs, Amicus Therapeutics)

Panelists: Dr. Kevin Bugin (Head of Global Regulatory Policy, Amgen), Dr. Robin Prasad (Managing Partner, Bold Brain Ventures), Mr. Andrew Emmett (VP, Global Regulatory Policy & Intelligence, Pfizer), Ms. Kristin Schneeman (Sr. Director, FasterCures, Milken Institute)

This discussion tackled the macroscopic enablers of innovation – the **policy frameworks, funding models, and physical/data infrastructure** needed to translate scientific advances into widespread patient benefit. Dr. Paul Howard opened by outlining the stark challenges facing the current ecosystem. Clinical trials are increasingly global and complex, yet our systems have not kept pace.

He noted that roughly *"70% of oncology clinical trials are conducted outside of the U.S."* now, reflecting a worldwide distribution of research. At the same time, only a tiny fraction of patients participate in trials – on the order of *5–6% of adult cancer patients* in the U.S.. This low participation, combined with high costs, *"limits the number of shots on goal we can take"* in drug development. Howard pointed to the burden on trial sites: many are **struggling with burnout**, overwhelmed by the proliferation of protocol procedures and data systems required by sponsors. In short, the **ecosystem's capacity** (sites, patients, budgets) is under strain, even as scientific opportunities (new drug targets, modalities, data sources) are expanding.

Dr. Kevin Bugin, with experience as both an FDA policy official and now in industry, provided a candid assessment of regulatory and infrastructure issues. He characterized the current clinical trial regulatory environment as a *"really complex Christmas tree that you just keep adding ornaments to"* – over years, layers of regulations and guidances have accumulated, to the point where the system is top-heavy and **at risk of toppling under its own weight**. Bugin argued for stepping back to **first principles**.

We should ask: what is the fundamental goal of our clinical evidence generation system, and how might it be achieved more simply and efficiently? He noted interest in paradigm shifts such as integrating research and care (so that evidence is generated in the course of routine treatment, not just in dedicated trials). This could involve more **pragmatic trials or registry trials** that operate in real-world settings, an approach that groups like the *Oncology Center of Excellence* at FDA have explored.

Bugin shared lessons from his time supporting Operation Warp Speed during COVID-19. That experience demonstrated that with urgent alignment and infrastructure (e.g. master protocols, centralized trial networks, real-time data sharing), it is possible to compress development timelines drastically. Oncology, he noted, has pockets of that urgency – *"oncology and rare disease programs [at FDA] had a sense of urgency and more openness…things moved much more quickly"* – but those are exceptions rather than the rule. He helped establish FDA's *Center for Clinical Trial Innovation* to capture and propagate novel trial design approaches. One finding was that it's *"not enough for the FDA to put out a guidance"* encouraging innovation. Every trial is unique (*"every trial is like a snowflake"*, he said), so sponsors often struggle to apply general guidance to their specific situation. The CCTI's role is to support individual programs (through advisory services, etc.) and *"gather lessons"* from each innovative trial (adaptive designs, Bayesian methods, etc.) to inform the next. Bugin highlighted **culture change** as vital: there's a bias that more complexity (e.g. endless eligibility criteria, numerous endpoints) equals rigor, but *"too complex is not always better"*. We should strive for trials that are *embedded in routine care* and "seamless" for patients and clinicians. Simpler, more pragmatic designs could greatly expand trial access.

On the policy front, **global regulatory divergence** was a hot topic. Mr. Andrew Emmett noted that as clinical trials globalize, different countries' regulations sometimes conflict or impose extra burdens. He gave the example of certain countries now requiring *quota of local patients* in a trial before they will approve a drug. *"You have to have a certain number or percentage of patients in your trial [from our country] to register here"*, or run a local trial entirely. Similarly, some markets tie reimbursement to conducting local trials.

While understandable from a national interest perspective, these policies are creating **fragmented development programs** – companies must navigate a maze of local requirements, which slows trials and sometimes leads to duplicative studies. *"We're creating arbitrary quotas and greater complexity on top of existing variances,"* Emmett said. The panel argued for renewed efforts toward **international regulatory harmonization**.

Ms. Kristin Schneeman, from FasterCures, noted that twenty years ago initiatives like the *International Conference on Harmonisation (ICH)* made progress in aligning technical guidelines, but today's environment needs harmonization 2.0: alignment on data standards, mutual recognition of trial results, and collaborative review pathways for global studies. Bugin advocated that regulators *"take down these barriers and focus on what matters – the clinical and scientific principles of the trial"*. For instance, rather than insisting on local patient quotas, agencies could agree on a common set of data requirements and accept foreign data if those are met.

This would allow truly **common global trials**, which are especially crucial for rare cancers or molecularly-defined subsets where even worldwide patient pools are small.

Dr. Robin Prasad brought in the **capital perspective**, particularly venture funding for oncology and AI. He described his firm's model: a network of hundreds of physician investors who collectively fund and advise healthtech startups. This innovative approach aligns clinical insight with capital – doctors on the front lines identify unmet needs and then back companies working on those problems, often serving as trial sites or early adopters. Prasad emphasized that **incentives need realignment** across the board.

He echoed an audience comment that *"incentives defeat intentions…we keep having the same conversations [like Groundhog Day] because incentives are misaligned"*. For example, he pointed to the fee-for-service healthcare model that doesn't reward clinicians for participating in research (hence sites find it financially onerous to do trials), or the biopharma business model that sometimes prioritizes therapies with larger markets over riskier, paradigm-shifting science. His fund's physician-LP model is one attempt to align incentives by giving clinicians a stake in the innovation process and a return on successes.

On the infrastructure side, all panelists agreed that **data infrastructure** is paramount. Ms. Schneeman spoke about the need for **interoperable health data systems** so that research-grade data can be extracted from electronic records and shared. Currently, even assembling a simple real-world evidence dataset can take months of negotiation and data cleaning due to incompatible systems and proprietary silos. She advocated for policies that enforce common data standards and **open APIs** in health IT, drawing an analogy to how financial data moves easily between banks and apps. Dr. Emmett added that regulators could incentivize data sharing by, for instance, offering expedited review for companies that commit data to public repositories like the Project Data Sphere or NCI's genomic data commons. The focus is to treat data not as exhaust of the system but as a critical asset that, if pooled, can drive AI and discovery (a point very much in line with the *information blocking* discussion from the AI panel).

Another key topic was the **workforce and skillset** needed for 21st-century oncology innovation. The panel noted a shortage of professionals at the nexus of computation and biomedicine. Dr. Howard mentioned that training programs (from medical school to PhD programs) need to incorporate data science, regulatory science, and interdisciplinary teamwork skills. Dr. Schneeman highlighted some Milken Institute initiatives to create *"hybrid training"* fellowships, for example an oncologist-data scientist track. The underlying principle is that to effectively use AI, real-world data, and advanced trial designs, we need people who understand both the technology and the disease context.

The panel also addressed **equity and access**. It was noted that current innovation often fails to reach certain populations – whether due to trial eligibility criteria that exclude patients with comorbidities, or advanced therapies that are priced beyond reach in many health systems. Schneeman argued that equity must be *"embedded"* in innovation policy, not tacked on later. This could mean requiring diversity in clinical trial enrollment (FDA has recently issued guidance on that) and supporting community research sites. Prasad added that deploying capital to startups focusing on cancers or care models relevant to low-resource settings is also important – e.g. tele-oncology platforms, or AI diagnostics that can be used where specialists are scarce.

In concrete outcomes, the panelists converged on a few priorities:

National Strategy for Trials

Develop a coordinated national (and global) strategy to expand trial capacity – for example, creating networks of hospitals with pre-approved master contracts and standardized IRBs, so a new trial can be activated in weeks instead of months. The COVID trials demonstrated this approach (via central networks like the NIH's). A similar **"Cancer Trial Warp Speed"** infrastructure could be established for high-priority areas (e.g., immunotherapy combinations or rare cancers), aligning NCI, FDA, and industry efforts.

Data Sharing Incentives

Implement incentives and protections to promote data sharing. This might involve *safe harbor* regulations that limit liability when companies share de-identified patient data for research, or public-private partnerships that create federated data platforms. The idea of a **federated learning network** was raised – where AI models can train on datasets across institutions without the data leaving secure local environments. Regulatory endorsement of analyses done on such federated systems would encourage adoption.

Funding Long-Horizon Innovation

Recognize that truly game-changing innovations (like curing metastatic cancer with gene therapy, or developing cancer vaccines) may not have immediate commercial returns and thus are under-invested in by traditional VC. Creative funding models are needed, possibly blending philanthropy, government grants, and industry consortia for these high-risk, high-reward endeavors. The panel noted initiatives like the Cancer Moonshot and ARPA-H, and urged that these be sustained and coordinated with private investment, not viewed as one-off efforts.

Dr. Howard summarized that a **"catalytic ecosystem"** requires all three pillars – supportive policy, robust infrastructure, and smart capital flows – to be aligned. Right now, he noted, we have strong science but often weak links in those supporting pillars: outdated regulations, fragmented infrastructure, misaligned incentives. The good news is that many solutions are known or were demonstrated during the pandemic. The panel was optimistic that by pushing for *alignment* (for example, regulators signaling openness to new evidence approaches as Makary did, payers engaging earlier to agree on what evidence they need for coverage, etc.), we can accelerate translation. Indeed, several panelists echoed a theme of the day: the cancer community has a "window of opportunity" now – with breakthrough science at hand and lessons from COVID – to modernize the system if stakeholders collectively demand it.

The Policy/Infrastructure panel reinforced that scientific innovation alone is not enough; success in curing cancer at scale will depend on **policy innovation (regulatory agility, harmonization)**, **infrastructure innovation (data and trial networks)**, and **financial innovation (incentive alignment, new funding models)**. The discussion set the stage for closing considerations on how groups like the CEO Roundtable can concretely advocate for these changes in the coming year.

AI-Powered Tumor Assessment

Total Tumor Burden Index (TTBI)

Session: "Setting New Standards for AI-Powered Tumor Assessment"

Dr. Sean Khozin, MD, MPH — CEO, CEO Roundtable on Cancer & Project Data Sphere; Ms. Gail Stephens — Vice President, Health Care and Life Sciences, SAS Institute; Dr. Ella Pavlechko — Data Scientist, SAS Institute

Context and Framing by Dr. Sean Khozin

Dr. Khozin opened the session by situating PDS's new *AI-Powered Tumor Assessment* project within a broader critique of current oncology standards. He reminded attendees that oncology still relies on **RECIST**, a 20-year-old system that uses one-dimensional measurements of a few "target lesions." Despite its ubiquity, RECIST was described as *"a very reductionist, almost a primitive way of assessing tumor dynamics."* The central question, he said, remains deceptively simple yet clinically unresolved: "*Is the tumor growing or shrinking. We've been navigating oncology with linguistic definitions of reality rather than measurable biology,"* Khozin noted.

He then introduced the **Total Tumor Burden Index (TTBI)** initiative, a collaboration between the CEO Roundtable on Cancer, Project Data Sphere, and SAS Institute. The system autonomously segments and quantifies tumor volume from whole-body CT scans using deep-learning models. Khozin explained that *"what sounds like a simple idea—measuring the true tumor volume—is in fact the foundation of how we develop, approve, and use cancer therapies."* The goal is not merely automation but **standardization**: a reproducible, auditable, and regulator-ready measure of tumor dynamics that could replace subjective or semi-manual assessments.

He outlined the project's envisioned pathway:

- **Years 1–3:** Develop the core foundation model using de-identified imaging data from Project Data Sphere.
- **Subsequent phase:** Technical validation for research use, followed by **prospective clinical validation** under a **PMA (Premarket Approval)** framework—eschewing the easier 510(k) pathway. *"We intend to generate prospective clinical evidence,"* Khozin said, *"because AI in medicine cannot remain a derivative of legacy devices."*

NEJM AI

The Use of Artificial Intelligence for Cancer Therapeutics

Drs. Khozin, Elemento, and Sternberg on the use of artificial intelligence for cancer therapeutic decision-making, where they emphasize that the central challenge is not technical innovation but clinical validation.

With that framing, he invited Ms. Gail Stephens of SAS to introduce the technical demonstration.

Ms. Stephens reflected on SAS's long partnership with Project Data Sphere and CEO Roundtable on Cancer, emphasizing that while *"the technology has been there for a long time, trust hasn't."* She described the company's mission as one of *bridging data science and clinical confidence*, citing CEO Dr. Jim Goodnight's belief that analytics should serve as *"an engine for understanding, not opacity."*

Her remarks centered on **trust as infrastructure**—that reproducibility, interpretability, and auditability are prerequisites for adoption of any AI in healthcare. *"We can do wonderful things once we get our hands on the data,"* she said, *"but we can't make people trust the results."* She concluded by expressing optimism that the TTBI collaboration demonstrates how rigor and transparency can shorten clinical timelines and restore confidence in evidence itself .

Dr. Pavlechko's presentation transitioned from vision to engineering. She described the **AI pipeline** designed to compute a patient's *TTBI* directly from medical images. The model integrates segmentation and classification branches:

Segmentation branch: delineates tumor volume across the full 3D image stack.

Classification branch: distinguishes malignant from benign findings, with attention to underrepresented benign examples that can bias model learning.

A key design principle is **auditability**. Every step—from image normalization to feature extraction—is logged, version-controlled, and reproducible. *"This pipeline is specialized for medical images and is also auditable,"* she said. *"We can trace every result back through the system for reliability."* This design anticipates regulatory scrutiny and aligns with FDA's emerging guidance on software-as-a-medical-device transparency. The proof-of-concept phase demonstrated **rapid turnaround**: within a week of data transfer, the team trained a functioning model, approximately *three times faster* than comparable efforts.

Performance analysis revealed robust learning curves but also class imbalance—malignant lesions constituted about 18% of data versus 2% benign. Pavlechko acknowledged that this bias *"is currently affecting our model"* and outlined mitigation strategies such as resampling and reweighting.

She displayed visual overlays showing how the AI highlighted lesions and outputted a continuous TTBI score proportional to tumor volume. Such a score could detect progression earlier than RECIST criteria, offering a quantitative and objective endpoint for trials.

Following the demonstration, Dr. Khozin returned to elaborate on the **clinical development and regulatory implications**. He emphasized that oncology's "gold standards" are often linguistic constructs rather than empirical truths: *"We call one category 'non-small cell' only because we first defined something else as 'small.' These are human labels, not biological constants."*

He proposed that AI-derived measures like TTBI could help transition from **semantic to mechanistic definitions** of disease. In response to audience questions, he discussed potential **feedback loops** where prospective imaging data refine the model continuously, forming a *data flywheel* that learns from clinical use.

Khozin described collaboration with surgical and pathology partners to correlate TTBI outputs with biopsy-proven malignancies—creating **validation cohorts** across modalities. The long-term aim is an **FDA-cleared, clinically integrated AI endpoint** that can replace subjective assessment in both trials and routine practice.

The **AI-Powered Tumor Assessment** session showcased a convergence of **technical innovation, regulatory foresight, and clinical pragmatism**.

- Dr. Khozin framed the problem: RECIST's legacy constraints and the need for quantitative, scalable tumor dynamics.
- Ms. Stephens articulated the human challenge: trust as the missing substrate of technological progress.
- Dr. Pavlechko demonstrated the solution: an auditable, modular AI system capable of producing a reproducible metric of tumor burden.

The discussion captured a central theme of the 2025 CEO Roundtable on Cancer Meeting: **modernization of evidence**—moving from interpretive heuristics to measurable, machine-verifiable biology.

> *"If we can measure it objectively, we can improve it reliably,"* Dr. Khozin concluded, setting the tone for subsequent panels on endpoints, evidence, and AI validation environments.

Endpoints and Evidence

Redefining Clinical Evidence Generation

Session: Panel – *"Endpoints and Evidence: Redefining Measures of Progress."*

Moderator: Dr. Gideon Blumenthal (VP, Global Clinical Development in Oncology, Merck & Co).

Panelists: Dr. Stuart "Stu" Bailey (SVP, Head of Clinical Measurement Sciences, EMD Serono, Inc), Dr. Marjorie Green (SVP, Head of Oncology Clinical Development, Merck & Co), Dr. David Spetzler (President, Caris Life Sciences), Dr. Jean-Charles Soria (SVP, Oncology R&D, Amgen).

This panel wrestled with one of oncology's thorniest issues: how we define and measure "success" in trials, and whether our current **endpoints** and evidence standards are truly embracing innovation to accurately reflect clinically relevant outcomes. The backdrop is a system that often relies on *surrogate endpoints* (tumor response, progression-free survival, etc.) for accelerated drug approval, which are only sometimes validated to predict long-term benefit. Meanwhile, emerging endpoints such as **minimal residual disease (MRD)** or **circulating tumor DNA (ctDNA)** hold promise for earlier readouts, but lack regulatory acceptance frameworks. The panel delved into recalibrating endpoint paradigms and making evidence generation more **predictable and robust** for the next generation of therapies.

Dr. Blumenthal opened by citing the historical compromise in oncology: using surrogates *"reasonably likely to predict benefit"* as a basis for approval, given that waiting for overall survival (OS) data could deny patients timely access. This has undoubtedly saved lives by speeding up approvals, but it also introduced uncertainty – some drugs approved on surrogates later failed to show OS benefit, leading to withdrawals and controversy. The question on the table: how can we modernize this system so that we maintain agility (fast access) **and** increase confidence in true patient benefit?

One focus was on better **validation of surrogate endpoints**. Dr. Stuart Bailey referenced the FDA's recent workshop on this topic. He recounted that regulators presented instructive case studies: *"One was in multiple myeloma, using MRD [minimal residual disease]. They had decades of experience – 15 trials, tens of thousands of patients – [to evaluate] that…In early breast cancer, [pathologic complete response (pCR)]"* was similarly examined. The takeaway was that demonstrating a surrogate's validity (i.e., that improvements in the surrogate reliably predict improvements in OS or quality of life) typically requires pooling many studies and long follow-up.

Bailey argued that the field should proactively invest in these validations. For instance, he suggested a **consortium approach** to gather data across companies and academia for MRD in various cancers, so everyone isn't waiting 10+ years to act on this promising endpoint. As an example, if MRD clearance after therapy correlates strongly with cure rates in early-stage leukemia (as some evidence suggests), then trials could be designed around MRD now rather than conducting enormous OS trials, but only if the community and FDA have confidence in that correlation.

Dr. Marjorie Green discussed the challenge of evidentiary standards that seem to be moving targets. She noted that sponsors sometimes feel whipsawed: on one hand, the FDA encourages innovative endpoints and faster approvals; on the other, there's a push (partly from the U.S. Congress and public pressure) to require more definitive evidence like OS.

One panelist put it plainly: *"Our FDA Commissioner brought up trying to get drugs to market faster. But how do you balance [that] with [the] new guidance of overall survival being the key marker?"*

This tension has intensified in recent years with the FDA Oncology Center of Excellence scrutinizing accelerated approvals that hadn't confirmed OS benefit, leading to some withdrawals. Green advocated for establishing **durable, predictable standards**: drug developers need to know the goalposts in advance. "If surrogate X is acceptable, that should be clearly stated and ideally backed by data. If not, alternative trial designs should be discussed early." She praised initiatives where FDA has issued disease-specific guidance (e.g., pathologic response in neoadjuvant breast cancer has an established role for approvals, with confirmatory OS follow-up expected).

Dr. Jean-Charles Soria, representing a global industry and academic perspective, stressed the importance of **scientific rationale** behind endpoints. He echoed that *"all these new measures – ctDNA shed, exosomes, methylation patterns, etc. – are surrogates"* in a sense. In a single small trial, it's *"almost impossible to validate or be confident"* that such a marker is truly predictive.

Thus, he suggested a strategy of integrating novel endpoints into trials *without* making them sole decision-makers initially. For example, include MRD or ctDNA measurements in Phase II and III trials to build the dataset, even if the trial's primary endpoint is still PFS or OS.

Over time, accumulate enough evidence to elevate these to primary endpoints. Soria also touched on **composite endpoints** or **multi-dimensional endpoints** (e.g., combining tumor shrinkage with a biomarker change) as potential solutions for modern therapies that have complex patterns of response (like immunotherapies, where tumors can pseudo-progress). However, the regulatory system has been cautious in interpreting such combos

Dr. David Spetzler, from Caris Life Sciences (a diagnostics company), brought the precision medicine angle. He argued that **molecular endpoints** can vastly improve trial efficiency if used appropriately. For instance, if a targeted therapy is truly hitting its target, one might see molecular changes (like clearance of an oncogenic mutation in blood DNA) well before radiographic changes.

He suggested that in some cases, these could serve as early **"go/no-go" signals** in development: rather than waiting 6 months for RECIST response, a 4-week ctDNA drop might tell you if the drug is biologically active.

He also stated that not every molecular change correlates with patient benefit, hence the need for rigorous validation. Spetzler is working on technologies like comprehensive tumor profiling and AI predictive modeling to define better endpoints. One concept mentioned was **"tumor dynamics"** – using high-frequency, quantitative measurements (could be imaging or ctDNA) and modeling tumor growth kinetics under treatment. It's possible that an AI could detect a subtle change in growth rate that presages long-term benefit, even if tumor size doesn't shrink dramatically. In fact, the closing session preview cited *"evaluation of tumor dynamics using modalities like TBI"* (Tumor Burden Index) as an area of focus, linking to the PDS-SAS presentation.A theme echoed by multiple panelists was the need for **creative trial designs** that embed these endpoints. For example, adaptive trials can incorporate interim analyses of surrogate endpoints—such as MRD—to optimize the study. This approach may allow for early transition of responders to different therapies, or stopping the trial early for futility."

[1]The panel also discussed master protocols—such as platform trials—in which multiple drugs share a common control group. This design can enable more powerful use of surrogate endpoints by allowing cross-validation of the surrogate across different therapies. One panelist remarked that we should *"think more creatively around endpoints…measured earlier…and study designs that are embedded in clinical care or leverage real-world evidence, [which] are more economically and operationally feasible than [traditional trials]"*. This sentiment succinctly captured the panel's forward-looking vision: **earlier endpoints, plus innovative trial designs, equals faster, cheaper trials** – if we can ensure the surrogate truly signals real benefit.

Regulatory representatives in the room (like Dr. Blumenthal, who previously worked at FDA) acknowledged the discomfort of uncertainty. The worst-case scenario is a drug approved on a surrogate that ultimately doesn't translate to patient benefit (or worse, causes harm). To mitigate that, the panel endorsed stronger **post-market evidence generation**. If surrogate-based approvals continue (and they likely will, to expedite drugs in aggressive cancers), then **confirmatory trials** must be done and done well. Recent policy proposals include enforcing commencement of confirmatory trials by the time of approval and requiring recruitment to be well underway (to avoid delays in verification). The panel supported these moves; industry members noted it's in their interest too to confirm value and expand labels.

There was considerable optimism about some new endpoints on the horizon: for instance, ctDNA as a marker of minimal residual disease in solid tumors (already used in colon cancer trials as an adjuvant therapy decision tool), or novel imaging tracers that can show drug target engagement in vivo. If validated, these assessments could sharply reduce trial sizes or durations. However, panelists cautioned against **overhyping single studies**.

An interesting point was raised by Dr. Soria: as treatments get better and more personalized, traditional statistical frameworks might need updating. For example, when a therapy is tailored to a rare biomarker, randomized trials are extremely challenging – you can't find enough patients or equipoise. In such cases, **single-arm evidence with a surrogate** plus real-world data might have to suffice. He advocated for a *"precision regulation"* approach matching precision medicine, meaning regulators may need to accept different evidentiary thresholds for narrow subpopulations. *"We have not caught up [with regulatory pathways],"* he said, given these new paradigms.

The Endpoints and Evidence panel called for a dual strategy: **refine and strengthen** the use of existing surrogates (through validation and appropriate use in accelerated approval), and **innovate** new measures that align with modern therapies. The discussion acknowledged current frustrations – e.g., the recent emphasis on overall survival has made oncology trials larger and longer, raising costs and delaying approvals, which is not sustainable for all drug development. The panelists seemed to converge on a vision where a combination of **molecular endpoints, advanced imaging, and smarter trial designs** could allow future trials to demonstrate drug activity faster, with confirmatory evidence built in through adaptive designs or phase IV commitments. The ultimate goal they described aligns with the Roundtable's mission: to create an ecosystem where evidentiary standards are "**durable [and] predictable**", so that innovators have a clear path to proving a drug works, patients can trust that approved drugs truly help, and fewer promising therapies languish due to impractical trial demands.

As a coda, Dr. Blumenthal noted that this discussion would feed into the Roundtable's ongoing work with FDA and other bodies to develop **guidance on surrogate endpoint frameworks**. Indeed, the closing remarks of the conference highlighted *"surrogate endpoint frameworks"* and *"AI validation environments"* as one of 2026 focus areas, showing that this panel's content will directly translate into action items. By the panel's end, there was a sense that while challenges in endpoints and evidence are complex, the convergence of science (new endpoints) and policy (regulatory openness) presents a chance to solve the longstanding *speed vs. certainty* dilemma in oncology drug development.

Breakthrough Therapies

Engineering the Next Generation of Cancer Immunotherapy

Session: "Breakthrough Therapies: Engineering the Next Generation of Cancer Immunotherapy"

Moderator: Zhen Su, MD, MBA — Chief Executive Officer, Marengo Therapeutics

Panelists: • Sushil Patel, PhD — Chief Executive Officer, Replimune • Christian Hinrichs, MD — Chief, Section of Cancer Immunotherapy, Rutgers Cancer Institute • Alicia Zhou, PhD — Chief Executive Officer, Cancer Research Institute (James Gulley, MD, PhD — Clinical Director, National Cancer Institute, was unable to attend due to the U.S. government shutdown).

Dr. Zhen Su opened the discussion by acknowledging the absence of Dr. James Gulley, noting that "*even science is not immune to government inertia.*" The comment framed a broader theme: while discovery in immuno-oncology continues to accelerate, translation and operationalization lag behind. Su described the current phase of the field as "less about conceptual breakthroughs and more about engineering the next layer of predictability."

He urged participants to view immunotherapy as a systems design problem—where biology, data, and manufacturing must align to deliver reproducible efficacy. "We've proven we can make tumors disappear," he said. "Now the question is whether we can make results reproducible, scalable, and globally accessible."

Sushil Patel presented a candid assessment of the post-RP1 landscape, referencing the FDA's July 2025 decision not to approve Replimune's oncolytic virus therapy despite biologically compelling data. The experience, he said, revealed a structural misalignment: "Regulatory science hasn't caught up with immune biology."

He outlined three key lessons from the company's journey:

- Endpoints must evolve. ORR and PFS inadequately capture the kinetics of immune activation. Patel advocated for "integrated biomarkers of immune engagement"—combining spatial transcriptomics, T-cell persistence, and cytokine profiling.
- Manufacturability defines viability. He warned that "if you can't make it reproducibly at scale, it's not a platform—it's an experiment."
- Regulatory collaboration must begin early.

He cited the CEO Roundtable's AI-powered tumor assessment and surrogate endpoint framework as models for evidence modernization. Patel emphasized that immune therapies must be judged not by isolated trial outcomes but by their capacity to produce consistent biological effects across populations. "We need validation frameworks that match the complexity of what we're building," he concluded.

Christian Hinrichs — Rutgers Cancer Institute Hinrichs focused on programmable cell therapies—logic-gated CAR-T and TCR designs that respond only to specific molecular combinations. He described this evolution as "moving from brute-force biology to conditional computation." His lab's constructs use synthetic gene circuits that activate T cells only when two or more tumor antigens are simultaneously detected, sharply reducing off-tumor toxicity. "Our early CARs were powerful but dumb," he said. "Now we're teaching them to reason before they kill."

However, Hinrichs cautioned that scientific sophistication is outpacing manufacturing infrastructure. Even as automation improves, autologous workflows remain time- and labor-intensive. He called for a federated national manufacturing backbone, integrating federal programs such as BARDA and NCI with private manufacturing networks once government operations resume.

Alicia Zhou — Cancer Research Institute Zhou examined the systemic inefficiencies of immunotherapy development, arguing that "every company is rediscovering the same biological truths in parallel." CRI's response has been to build shared registries of immune response and irAE profiles—cross-sponsor, privacy-preserving datasets that enable "collective learning instead of competitive repetition." She highlighted the need for harmonized data standards and analytic vocabularies, particularly in assessing durability of response and immune-related toxicity. "

We're surrounded by biological diversity but starved for data comparability," Zhou observed, urging closer collaboration among regulators, data holders, and biopharma consortia. Her remarks reinforced the day's broader message: trustworthy data infrastructure—not discovery alone—is what will determine the next decade of immunotherapy progress.

Precision Signals

James Gulley, MD, PhD: The Architecture of Evidence

In this episode of Precision Signals, Dr. Sean Khozin speaks with Dr. James Gulley on trends shaping both the science and the clinical...

Dr. Su summarized three convergent imperatives emerging from the dialogue:

Precision Engineering

Transitioning from empirical immunology to predictable, programmable systems—CAR-Ts that compute, viruses that broadcast, and cytokines that self-regulate.

Regulatory Modernization

Developing co-validated endpoints and analytic frameworks alongside therapies, reducing the lag between discovery and evidentiary acceptance.

Infrastructure Readiness

Building an interoperable, distributed manufacturing ecosystem capable of producing advanced biologics with pharmaceutical reliability.

Dr. Su closed with a reflection that captured both realism and ambition:

> “Immunotherapy began as a moonshot. Now it’s a systems-engineering challenge. The winners of the next decade will be those who design for consistency, not just novelty."

Closing Reflections

From Dialogue to Design

David Reese, MD — Board Chair, CEO Roundtable on Cancer; EVP and Chief Technology Officer, Amgen

Sean Khozin, MD, MPH — Chief Executive Officer, CEO Roundtable on Cancer & Project Data Sphere

Dr. Reese closed the meeting by emphasizing that progress in oncology depends on sustained coordination, noti that the field has reached a point where scientific understanding, data technology, and regulatory capacity are mature enough to be re-engineered into a coherent system capable of accelerating translation.

The challenge, he noted, is not invention but integration—ensuring that new modalities, digital infrastructures, and analytic tools are embedded into care and research with rigor and measurable patient benefit. He urged participants to treat this inflection point as an opportunity to convert alignment into execution, using the Roundtable's neutral platform to turn shared intent into tangible systems change. His remarks underscored that the organization's strength derives from the sustained engagement of its members and partners, and that collective progress depends on disciplined collaboration beyond the meeting itself.

Dr. Khozin invited participants to "imagine what regulatory transformation looks like." He framed it not as a matter of speed or administrative reform, but as the structural alignment of evidence generation and evaluation—"bringing regulatory science, technology development, and policy into the same frame." He emphasized that genuine transformation not only regulatory science but biomedical research will emerge through the deliberate design of validation environments where AI models, imaging endpoints, and molecular biomarkers can be tested with transparency and reproducibility. This, he explained, represents the next evolution of CEORT and Project Data Sphere's work: constructing the connective infrastructure that allows innovation, oversight, cancer research, and clinical practice to evolve together. Khozin's remarks reinforced that this transformation is a collective responsibility—an engineering construct for institutions as much as for algorithms—and invited all sectors represented at the Roundtable to engage actively in shaping the frameworks that will define the future of cancer research and care.

Strategic Areas for Collective Advancement

Each session during the 2025 Annual Meeting was structured around these imperatives. Together, they define the architecture for CEORT and PDS's next phase of coordinated work:

Regulatory Modernization and Validation Infrastructure

- Build shared, regulatory-grade environments for validating AI-derived endpoints, imaging metrics, and molecular biomarkers under reproducible conditions.
- Establish traceable audit standards to strengthen regulatory confidence in computational evidence.

Clinical Trial Recruitment and Representation

- Modernize recruitment using integrated data sources, digital prescreening, and community partnerships.
- Address persistent challenges in recruitment across race, geography, and socioeconomic status to ensure clinical generalizability.

Evidence and Endpoint Evolution

- Advance surrogate and composite endpoints that better capture early and durable treatment benefit.
- Align validation protocols with FDA and payer expectations to shorten development cycles without compromising rigor.

Data Interoperability and Infrastructure Alignment

- Integrate ongoing CRF harmonization, FHIR, and CDISC initiatives to support cross-trial and real-world analytics.
- Expand secure federated learning frameworks to enable distributed computation while protecting patient privacy.

Payer and Policy Alignment

- Collaborate with payers and HTA bodies to link reimbursement models to validated endpoints and outcomes.
- Position new evidence standards within sustainable value frameworks for equitable patient access.

AI in Evidence Transformation

- Advance the development of **Total Tumor Burden Index (TTBI)** through Project Data Sphere to redefine how tumor response and clinical outcomes are quantified.
- Establish **quantitative, auditable, and reproducible standards** for evidence generation—demonstrating how AI can serve as a regulatory-grade foundation for cancer research and care.

Looking Ahead

Turning Shared Conviction into Systems Change

Dr. Reese's reminder of the "hinge moment" and Dr. Khozin's statement on ecosystem transformation converge on a single imperative: to act collectively on the structural opportunities revealed by science and technology. The CEO Roundtable on Cancer looks forward to working with its members, partners, and affiliates to advance these priorities—translating the insights of the meeting into operational frameworks that make innovation reproducible, equitable, and trustworthy. The work ahead is clear: to transform collaboration into capability, and to ensure that the next decade of progress in oncology is measured not only by discovery, but by design.















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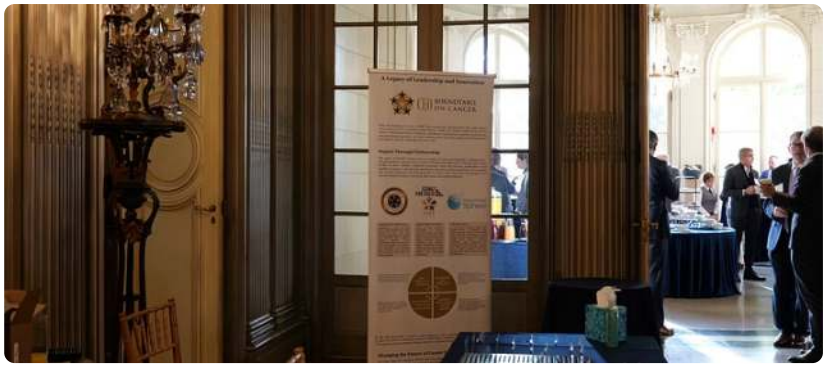






CEO Roundtable on Cancer 2025 Annual Meeting, October 27-28, 2025

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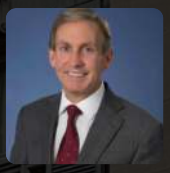

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This briefing document was prepared from meeting notes and official transcripts of the CEO Roundtable on Cancer 2025 Annual Meeting. Every effort has been made to ensure accuracy and completeness; however, minor errors or omissions may remain. For additional information or to suggest corrections, please contact ***info@ceort.org****.*