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Session Overview

1. Clinical Decision Making: Enabling Continuous Learning : Session Chair Laura Esserman MD, MPH. UCSF CCC

Outline: The landscape of clinical decision-making in precision oncology is rapidly evolving, driven by artificial intelligence (AI), multi-omics integration, and real-world data insights. In order for cancer care to become personalized, next-generation decision support systems will be needed to help transform raw data into actionable information, such as the risk of distant recurrence and the likelihood of adverse events, to enable providers and patients to make better decisions.

The key to enabling machine learning and predictive analytics and to help oncologists navigate the complexity of tumor heterogeneity, biomarker-driven therapies, and adaptive clinical trial designs is to assemble systems for data collection at the point of care that facilitate data collection, QI, and integration of care and research using a middle layer of decision support on top of our EHRs.

To enable this vision, there is a need to develop systems that power data collection through the capture of key exposures and outcomes. In a fast-moving field, we cannot rely on "evidence" that has matured over a decade, as those strategies may no longer be relevant in the context of novel therapies. Therefore, processes for data capture need to be integrated into routine care to enable continuous monitoring of the efficacy and safety of treatments.

As AI models evolve, they will increasingly be integrated into oncology workflows to support oncologists, radiologists, and pathologists in making faster, more precise, and evidence-based decisions. Data and evidence will become akin to software, which is constantly improving and being upgraded. In this session, we will discuss how technology can enable this future, and discuss what needs to be accomplished to realize this vision.

A real-world evidence platform will be presented for implementation in clinical care practices and tools that are rapidly improving the standardization and interoperability of EHR data which will drive integration of care and research.

As Clinical trials begin to test personalized approaches to care, response adaptive care can be tested. We will briefly describe the I SPY 2 TRIAL platform model as an illustration. Trials need to be conducted, integrating complex biomarkers, to predict results early in the course of care, so that treatment can be adjusted. Tools that predict therapeutic responses need to be available at the point of care so that interventions can be tailored to individual patients. Ideally, these tools and systems will continue to evolve as data accumulates. Early endpoints can be developed for disease response and symptom monitoring, and those can be strengthened over time, and new data that is generated can be translated into constantly improving algorithms to guide care. That will then need to translate into tools for transforming clinical care. At the heart of this is the need for data collection and systems for ongoing monitoring and improvement.

A challenge of running trials, testing data and AI models generated from biomarkers or research tools for decision making, is that these are mostly generated outside the EHR and not available in real time for decision making. We will discuss the challenge of "writing back" that information

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to the EHR in a way that is available to clinicians at the point of care to make decisions, and to capture adherence and reasons for following the strategy or not. We will demonstrate an example of how this has been solved in the setting of the I SPY 2.2 TRIAL, the architecture that was used, and the "OneSource philosophy" for rapid implementation at sites. As well, we need tools that automate capture of structured data, to minimize manual electronic re-entry of data.

Patient reported outcomes are becoming increasingly important, and if we can quantify the impact of a given treatment on quality of life, we can develop combined endpoints that enable integration of efficacy and toxicity. The key to successful implementation of ePROs in a trial though really requires integration into clinical workflow, and the ability of clinicians to see the data their patients are providing. We will use the I SPY 2.2 experience in ePRO integration as an example of how to successfully implement tools across sites, partner with clinicians, and use patient experience as early indicators of impending serious immune related adverse events. To evaluate new therapies going forward, we must include the key outcomes that impact not only the length of life but the quality of life. It is critical to collect quality of life measures during trials, both short and long term, so that the appropriate trade offs can be made. Even when optimal treatment strategies are identified, we need systems for ongoing monitoring in the real world setting. However, We need to create the systems at the point of care to continuously collect and refine data and monitor their ability to predict both efficacy and toxicity.

We will discuss

- The existing tools and the near-term future landscape, and emphasize the explore the cutting-edge AI-driven approaches that can revolutionize clinical decision-making across precision oncology, including:
- Recent developments in technological standards and federal policies that enable interoperability of EHR data across the healthcare system.
- Development of tools and processes to transform clinical care into a learning health system
- Tools to track outcomes for continuous quality improvement
- OneSource connect, an e-Source solution for streamlining capture of data from care into clinical trial databases, and to enable decision support
- OneSource AI, a zero-trust/safe haven platform as an example of cloud-based data sharing with compute resources and meta-data crosswalks supporting transparent and reproducible research
- Examples of Complex biomarkers (AI algorithms) to predict response to treatment
- Integration of research data into electronic health records (EHRs) for seamless clinician support
- Predictive analytics for patient response and toxicity management to optimize treatment plans
- Systems for collecting patient reported outcomes which enable use of PROs in decision support and as combined endpoints so that both efficacy and toxicity can be taken into account when evaluating new drug combinations.
- AI tools to harness PROs as early predictors of immune related adverse events
- Interactive Cloud based resources to integrate genomic, clinical, and imaging data

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Benefits from attending session:

- This session will address key challenges in data generation from clinical care and integration of care and research.
- Attendees will gain insights into the strategy shaping federal policies on the standardization and interoperability of EHR data
- Attendees will gain insights into how Sequential Multiple Assignment Randomized Trials and response adaptive treatment can reshape clinical workflows, and enable personalized precision oncology in trials and eventually in care.
- Explore case study on integration of Electronic Data Capture into electronic health records (EHRs) to automate data collection and provide real-time decision support.
- Understand the challenges of complex decision support implementation, including interpretability, physician trust, regulatory approvals, and ethical considerations.

Session Key components and Panel focus areas:

- The importance of focusing on the point of care as the lynch pin for data capture in trials and in care– this will be enabled by improving the standardization and interoperability of data generated at the point of care
- Methods to integrate care and research – for streamlining clinical trial data collection and providing results/visualization of complex biomarkers for decision making at the point of care,
- Predictive Modeling for Patient Outcomes & Toxicity Management – Using AI to forecast treatment response, disease progression, and adverse effects.
- Multi-Omics & AI in Precision Oncology – How genomics, transcriptomics, proteomics, and metabolomics data inform cancer therapy decisions.
- EHR Integration & AI Decision Support Tools – Embedding insights into electronic health record (EHR) systems for real-time decision-making.

Panel Focus Areas:

- Do we need a new philosophy in trials and data where data and evidence are considered more like software, which is constantly improving and being upgraded. As AI models evolve, they will increasingly be integrated into oncology workflows to support oncologists, radiologists, and pathologists in making faster, more precise, and evidence-based decisions.

- Optimizing Personalized Treatment Strategies – Using AI to tailor treatments based on patient-specific data and predictive analytics.

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2.Basic and Translational Research: Session Chair: Adam Marcus, PhD. Winship CCC

Outline: Artificial intelligence is revolutionizing cancer research by accelerating discoveries in basic and translational research to improve clinical translation. By integrating AI with genomics, imaging, computational modeling, and multi-omics data, researchers can implement new approaches to analyze multi-scale data, predict treatment responses, and develop novel therapeutic strategies. This session explores AI-driven innovations in a variety of areas that span cancer genomics, digital pathology, and drug discovery, highlighting how AI is reshaping our understanding of cancer biology and how this can be leveraged for translational research. Discussions will also address challenges in AI adoption, data integration, and ethical considerations. Attendees will gain insights into the latest AI applications that are driving the future of cancer research and precision oncology.

This must-attend session will provide a forward-looking perspective on how AI-driven innovation is shaping the next generation of cancer research and clinical translation.

Benefits from attending session:

- Gain insights into the latest AI-driven breakthroughs in basic and translational cancer research.
- Learn from leading AI researchers, oncologists, and data scientists about practical applications in genomics, imaging, and therapeutics.
- Explore real-world case studies and success stories from AI-driven oncology initiatives.
- Understand challenges in AI adoption, including data governance, ethics, and regulatory landscapes.
- Network with industry leaders, biotech innovators, and clinical researchers driving AI advancements in cancer care.

Session Key components and Panel focus areas:

- AI in Cancer Genomics & Multi-Omics Research – Leveraging machine learning for genomic sequencing, biomarker identification, and patient stratification.
- Digital Pathology & Computational Imaging – Enhancing diagnostic accuracy, disease classification, and predictive analytics through AI-powered pathology tools.
- Computational Drug Discovery & Precision Therapeutics – How deep learning models are expediting target identification, drug repurposing, and AI-generated compounds for cancer treatment.
- Predicting Treatment Responses with AI – Exploring predictive modeling, multi-modal data integration, and real-time analytics to guide treatment selection and optimize therapy effectiveness.
- AI for Clinical Trial Acceleration – Optimizing patient recruitment, trial design, and adaptive protocols through AI-powered predictive analytics.
- Data Integration, Ethics, and AI Governance – Addressing data harmonization, model transparency, regulatory considerations, and bias mitigation in AI-driven cancer research.

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3. Diagnosis and Risk Prediction: Session Chair : Issam El Naqa, PhD. Moffitt CCC

Outline: Artificial intelligence is transforming the diagnosis and risk prediction of cancer, enabling earlier detection, improved prognostic assessments, and more precise treatment strategies. By integrating machine learning, multi-omics data, digital pathology, and advanced imaging analytics, AI-powered tools are redefining how clinicians assess cancer risk, stratify patients, and enhance diagnostic accuracy.

This session will explore cutting-edge AI applications that support risk prediction, early diagnosis, and clinical decision-making, including:

- AI-enhanced imaging for early cancer detection in radiology and pathology
- Predictive modeling for individualized risk assessment and patient stratification
- Multi-omics integration to identify novel biomarkers and genetic risk factors
- Real-time AI analytics for improving diagnostic workflows and reducing clinical variability

Additionally, experts will discuss the challenges of AI adoption, including interpretability, regulatory considerations, bias mitigation, and the ethical implications of using AI in oncology diagnostics.

Benefits from attending session include:

- Attendees will gain insights into how AI-powered diagnostic and risk prediction models are driving earlier interventions, personalized treatment pathways, and improved patient outcomes in cancer care.
- Gain a deep understanding of AI-driven innovations in cancer diagnostics and risk prediction.
- Learn from leading AI researchers, oncologists, and data scientists about real-world applications in precision oncology.
- Explore AI-powered solutions that enhance diagnostic accuracy, efficiency, and clinical decision-making.
- Understand barriers to AI adoption, including data bias, interpretability, and regulatory concerns.
- Network with industry leaders, biotech innovators, and healthcare professionals advancing AI in oncology.
- This session will provide a comprehensive overview of how AI is redefining cancer diagnosis and risk assessment, empowering clinicians with faster, more accurate, and personalized insights to improve patient outcomes. Join us as we shape the future of AI-driven oncology diagnostics

Session Key components and Panel focus areas:

- AI-Enabled Early Cancer Detection – Leveraging deep learning and imaging analytics for early and accurate cancer identification.
- AI-Powered Risk Prediction Models – How machine learning algorithms assess genetic, lifestyle, and clinical factors to refine cancer risk stratification.

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- Multi-Omics and Precision Diagnosis – Using genomic, proteomic, and metabolomic data to enhance biomarker discovery and personalized diagnostics.
- Digital Pathology and AI-Driven Histopathological Analysis – Automating tumor classification, grading, and molecular profiling through AI-powered pathology.
- Real-World Data and Predictive Oncology – Harnessing electronic health records (EHR), wearable data, and AI-based simulations for continuous risk assessment.
- AI for Clinical Decision Support – Integrating AI insights into oncology workflows to aid radiologists, pathologists, and oncologists in decision-making.
- Bridging AI and Clinical Workflows – How AI is seamlessly integrating into diagnostic imaging, pathology, and oncology clinics.
- Risk Prediction and AI-Powered Preventative Oncology – Using AI to identify high-risk individuals and optimize cancer prevention strategies.
- AI and Molecular Diagnostics – The role of multi-omics integration and computational modeling in predicting disease progression and treatment response.
- Reducing Bias and Increasing Equity in AI Diagnostics – Ensuring AI models work equitably across diverse patient populations.
- Regulatory and Ethical Considerations in AI-Driven Diagnosis – Addressing AI model validation, transparency, and FDA approval pathways.

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4. Prevention and Early Detection: "*Harnessing AI to Transform Cancer Outcomes*"
Session Chair Cristian Tomasetti, PhD: City of Hope Translational Genomics Research Institute

Outline: The landscape of clinical decision-making in precision oncology is rapidly evolving, driven by artificial intelligence (AI), multi-omics integration, and real-world data insights. As cancer care becomes increasingly personalized, next-generation decision support systems are transforming how oncologists identify optimal treatment strategies, predict therapeutic responses, and tailor interventions to individual patients. As AI models evolve, they are increasingly being integrated into oncology workflows to support oncologists, radiologists, and pathologists in making faster, more precise, and evidence-based decisions.

This session will explore the cutting-edge AI-driven approaches that are revolutionizing clinical decision-making across precision oncology, including:

- AI-powered treatment recommendations that integrate genomic, clinical, and imaging Real-World Data
- Machine learning models for predicting drug response and resistance
- Advanced clinical trial matching leveraging AI-driven patient stratification
- Real-world evidence (RWE) and federated learning for optimizing treatment pathways
- Integration of AI into electronic health records (EHRs) for seamless clinician support
- Predictive analytics for patient response and toxicity management to optimize treatment plans

By harnessing deep learning, machine learning, large language models, and predictive analytics, oncologists can now navigate the complexity of tumor heterogeneity, biomarker-driven therapies, and adaptive clinical trial designs with unprecedented accuracy and efficiency.

Benefits from attending session:

- This session will also address key challenges in AI adoption, including interpretability, bias mitigation, regulatory compliance, and physician-AI collaboration.
- Attendees will gain insights into how AI is reshaping clinical workflows, reducing uncertainty in treatment choices, and enabling personalized precision oncology.
- Discover groundbreaking AI applications that support oncologists, radiologists, and clinical researchers in making more precise decisions.
- Learn from top AI and oncology experts on how AI enhances treatment planning, clinical trial matching, and patient risk stratification.
- Explore case studies on AI integration into electronic health records (EHRs) and real-time decision support systems.
- Understand the challenges of AI implementation, including interpretability, physician trust, regulatory approvals, and ethical considerations.
- Network with oncology leaders, AI pioneers, and industry partners shaping the future of AI-driven clinical decision support.

- This session will provide a comprehensive look at how AI is empowering clinicians to make faster, more accurate, and personalized treatment decisions, ultimately improving

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cancer care and patient survival rates. Join us to explore how AI is reshaping the future of clinical decision-making in oncology!

Session Key components and Panel focus areas:

- AI-Driven Treatment Decision Support – How machine learning models integrate genomic, clinical, and imaging data to recommend personalized therapies.
- Clinical Trial Accrual & AI-Powered Patient Matching – AI-based platforms that match patients to biomarker-driven clinical trials in real-time.
- AI for Radiology & Pathology Decision Support – Improving cancer diagnosis, grading, and staging with AI-enhanced imaging and histopathology analysis.
- Predictive Modeling for Patient Outcomes & Toxicity Management – Using AI to forecast treatment response, disease progression, and adverse effects.
- Multi-Omics & AI in Precision Oncology – How genomics, transcriptomics, proteomics, and metabolomics data inform cancer therapy decisions.
- EHR Integration & AI Decision Support Tools – Embedding AI-driven insights into electronic health record (EHR) systems for real-time decision-making.

Panel Focus Areas:

- Bridging AI and Oncology Decision-Making – How AI is actively being integrated into clinical workflows for oncologists and multidisciplinary teams.
- Optimizing Personalized Treatment Strategies – Using AI to tailor treatments based on patient-specific data and predictive analytics.
- AI and Clinical Trial Optimization – Enhancing patient recruitment, eligibility screening, and trial stratification using AI-driven models.
- Regulatory and Ethical Considerations in AI Decision Support – Addressing FDA approvals, AI transparency, and clinical validation.
- Physician & AI Collaboration in Cancer Care – Ensuring AI tools act as clinical augmentations rather than replacements to enhance decision-making.
- Real-World AI Implementation in Cancer Centers – Success stories and challenges of deploying AI decision-support systems in clinical oncology.

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5. Clinical Trials: Transforming Clinical Trials with AI and Real-World Data. Session Chair Anai N. Kothari, MD, MS – Medical College of Wisconsin

Outline: "Transforming Clinical Trials with AI and Real-World Data" Artificial intelligence (AI) and real-world data (RWD) are revolutionizing clinical trial design, patient recruitment, and outcome prediction, transforming the landscape of oncology research. Traditional clinical trial models often face challenges such as slow enrollment, high costs, and limited patient diversity, but AI-driven innovations are addressing these barriers and accelerating trial efficiency.

This session will explore how AI-powered tools and advanced data analytics are reshaping every stage of clinical trials, from protocol design to post-market surveillance. Key focus areas include:

- AI-driven patient matching and recruitment, leveraging natural language processing (NLP) and real-time clinical data
- Predictive modeling for trial feasibility and success, optimizing study design and adaptive trial methodologies
- Integration of multi-omics, imaging, and digital biomarkers to enhance trial stratification and precision medicine approaches
- Federated learning and decentralized trials, enabling multi-institutional collaborations while maintaining data privacy
- Real-world evidence (RWE) and synthetic control arms, improving trial efficiency and reducing the need for placebo groups
- AI-powered automation for trial monitoring and regulatory reporting, ensuring compliance and efficiency
- How AI-powered tools and advanced data analytics are reshaping every stage of clinical trials, from protocol design to post-market surveillance, to decentralized trials.

By harnessing AI, clinical trials can become more adaptive, inclusive, and efficient, ultimately bringing life-saving treatments to patients faster. This session will also address challenges in AI adoption, including regulatory considerations, data standardization, and ethical concerns, ensuring that these advancements maintain scientific rigor and patient safety. Join us to explore how AI-driven clinical trials are shaping the future of oncology research, accelerating drug development, and improving access to innovative therapies worldwide.

Benefits from attending session:

- Attendees of this session will gain valuable insights into how artificial intelligence (AI) and real-world data (RWD) are revolutionizing oncology clinical trials, addressing long-standing challenges in trial design, patient recruitment, and outcome prediction.
- Enhance Patient Recruitment & Matching – Learn how AI-driven tools, including natural language processing (NLP) and real-time clinical data, are improving patient identification, increasing enrollment speed, and reducing disparities in trial participation.
- Optimize Study Design & Trial Success – Understand how predictive modeling and AI-powered feasibility assessments enable more efficient trial structures, adaptive protocols, and better success rates.

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- Leverage Multi-Omics & Digital Biomarkers – Discover how AI-driven multi-omics analysis, imaging data, and digital biomarkers enhance precision medicine and stratify patients for more personalized treatment approaches.
- Expand Access with Decentralized & Hybrid Trials – Explore how federated learning and decentralized trial models are enabling multi-institutional collaborations, reducing patient burden, and ensuring secure data sharing while maintaining regulatory compliance.
- Reduce Dependence on Placebo Groups with Synthetic Control Arms – Gain insights into how real-world evidence (RWE) and AI-powered synthetic control arms streamline trial execution and improve efficiency without compromising scientific integrity.
- Ensure Compliance & Regulatory Alignment – Address challenges in AI adoption, data standardization, and ethical considerations, ensuring that AI-driven innovations in clinical trials maintain scientific rigor and patient safety.
- Accelerate Drug Development & Access to Life-Saving Therapies – Understand how AI-powered automation in trial monitoring, regulatory reporting, and post-market surveillance is reducing trial timelines and expediting access to innovative treatments
- By attending this session, oncology researchers, clinical trial leaders, industry professionals, and AI innovators will gain actionable strategies to integrate AI and RWD into their trial workflows, improving efficiency, patient access, and the overall impact of cancer research.

Session Key components and Panel focus areas:

- This session will feature a panel of experts from oncology research, clinical trial operations, AI development, regulatory agencies, and biopharma to discuss the most pressing opportunities and challenges in leveraging artificial intelligence (AI) and real-world data (RWD) for clinical trials.
- AI-Driven Patient Recruitment & Trial Optimization
- How AI and natural language processing (NLP) enhance patient identification and eligibility matching
- Reducing disparities in trial participation and increasing diverse patient representation
- Using real-time clinical data to optimize trial enrollment efficiency
- Predictive Modeling & Adaptive Clinical Trials
- AI-powered feasibility assessments: improving protocol design and predicting trial success rates
- The role of AI in adaptive trial methodologies and real-time adjustments to study design
- Case studies on how AI improves patient stratification for personalized oncology trials
- Leveraging Multi-Omics, Imaging, and Digital Biomarkers
- Integrating genomics, imaging, and digital biomarkers for better patient segmentation
- AI-driven tools for automated pathology review and precision medicine approaches
- Standardization of multi-omics data for trial inclusion and decision-making
- The shift toward decentralized clinical trials (DCTs) and their impact on patient accessibility
- How AI supports remote patient monitoring, wearables, and digital endpoints
- Federated learning models for data sharing across institutions while maintaining privacy and compliance

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- Synthetic Control Arms & Real-World Evidence (RWE) in Trials
- The role of RWE in replacing traditional placebo groups to streamline trials
- AI-powered synthetic control arms and their regulatory considerations
- Demonstrating regulatory acceptance of AI-driven RWE methodologies in oncology research
- Ensuring data integrity, standardization, and compliance across AI-based trial methodologies
- Ethical concerns around AI-driven decision-making, patient privacy, and bias mitigation
- How AI automates data monitoring, adverse event detection, and compliance reporting
- Using real-world data (RWD) for post-market surveillance and long-term treatment efficacy assessment
- Outlook: How AI will shape the next generation of clinical trials and oncology research
- Industry leaders and researchers will share real-world use cases, challenges, and lessons learned in AI-driven clinical trials
- Attendees will have the opportunity to engage in an interactive Q&A session with panelists on integrating AI into their clinical research initiatives
- This panel will provide critical insights for oncology researchers, pharmaceutical leaders, clinical trial professionals, and AI innovators, offering actionable strategies to leverage AI and RWD to accelerate clinical trial efficiency, diversity, and patient-centered research outcomes.

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6. The Future of AI and Data Science in Oncology: Perspectives from Chief AI Officers
Session Chair Madhu Behera, PhD. Emory Health

Outline: "Transforming Cancer Care and Research" We are witnessing a revolution in oncology driven by artificial intelligence (AI) and data science, transforming prevention, early detection, diagnosis, treatment, and clinical trials. As cancer mortality rates decline, AI-driven tools are accelerating innovation, reshaping precision oncology, and enabling data-driven clinical decision-making at an unprecedented pace.

Join us for an engaging session at the Ci4CC conference, where we will be joined by Chief AI Officers from leading academic centers. This session will delve into the latest advancements and applications of artificial intelligence in scientific research and healthcare. Our distinguished panel will share their insights on the integration of AI technologies in cancer research, discuss the challenges and opportunities in this rapidly evolving field, and explore the future landscape of AI and data science. The panel offers a comprehensive look at the present and future of AI in oncology, providing actionable insights into how AI and data science are redefining cancer care, accelerating research, and transforming clinical trials.

Attendees will have the opportunity to engage with experts, ask questions, and gain valuable knowledge on how AI is transforming academic research and healthcare delivery. Join us as we chart the future of AI-driven oncology, uncovering new possibilities and addressing the critical challenges that lie ahead.

Key Focus Areas:

The State of AI in Oncology Today

- AI-powered risk prediction models for personalized cancer prevention
- Enhancing cancer screening accuracy through AI-driven imaging and pathology analysis
- Real-time analysis of multi-omics, genomic, and clinical data to enable biomarker-driven precision medicine
- AI-driven clinical decision support systems (CDSS) for optimizing treatment strategies

AI and Data Science: Converging for Smarter Cancer Research

- Machine learning, deep learning, and NLP for mining complex oncology datasets
- Federated learning and privacy-preserving AI for multi-institutional research collaboration
- AI-driven multi-omics integration to uncover novel cancer subtypes and therapeutic targets
- Digital twins in oncology: AI-powered simulations for treatment optimization and drug discovery

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AI-Powered Innovation in Clinical Trials and Drug Development

- Automating patient-trial matching and accelerating recruitment with AI-powered screening
- Predictive analytics for trial feasibility and adaptive designs
- Real-world evidence (RWE) and synthetic control arms for optimizing trial efficiency
- AI-driven automation for regulatory reporting, compliance, and post-market surveillance

Challenges, Ethical Considerations, and the Future of AI in Oncology

- Overcoming bias, reproducibility, and explainability in AI-driven models
- Regulatory adoption of AI-powered oncology innovations (FDA, EMA perspectives)
- AI's role in ensuring health equity and reducing disparities in cancer care
- The evolution of self-learning AI systems and autonomous decision-making in oncology

Looking Ahead: Where is AI Taking Oncology?

- The rise of AI-powered digital oncology ecosystems for seamless data integration
- The potential for automated precision oncology platforms to optimize care in real time
- Future AI applications in predictive modeling, patient stratification, and treatment personalization

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7. Ci4CC Technology Download & Innovation Session: Session Chair Laura Hilty. HealthX

Outline: Cancer Center Informatics Society Technology Download is a new forum kicked off in 2024 designed to explore and showcase cutting edge technologies primarily for but not limited to the field of Cancer Informatics. The *Ci4CC Tech Download* session will cover a range of topics related to the application of emerging technologies in cancer research, diagnosis, treatment, and overall patient care. The goal is to further facilitate the exchange of knowledge, promoting collaborations, and propelling progress to enhance cancer care, elevate patient outcomes, and further translational research.

The aim behind the introduction of the "Ci4CC Technology Download" Session is to also initiate a compelling monthly Cancer Center Informatics Society Membership Seminar Series, set to commence in April 2024. This program seeks to unite startups, investors, cancer centers, and advisors with a shared interest in expediting innovation in cancer and translational research. The collaborative efforts of these stakeholders aim to accelerate the delivery of treatments to patients by combining inventive ideas with execution wisdom and power.

Scope: The Session will center on the convergence of technology start-ups with potential customers, investors, and advisors who can help assess potential fit and collaborate to execute vision into reality. This will provide a dedicated forum for cancer centers to share their perspective on key innovation domains, for tech start-ups to showcase their innovations and for pharma and investor partners to share perspectives to advance the conversations.

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Benefits from attending sessions:

- Insight into Cutting-Edge Technologies: Gain insights into the latest cancer informatics technologies and their application in improving research, diagnosis, treatment, and patient outcomes.
- Networking with Innovators: Connect with a broad spectrum of innovators, including startups and investors, to forge partnerships that propel cancer care advancements
- Collaborative Opportunities for Innovation: Engage in a collaborative platform that links technology startups with key stakeholders to fast-track the execution of innovative cancer treatments.

Session Key components and Panel focus areas

- An introductory overview, setting expectations for the Tech Download series.
- Panel on strategic priorities and trends, featuring insights from cancer centers and investors.
- Tech Spotlight, allowing pre-selected tech companies to present their innovations for audience voting, enhancing engagement.
- Audience Interaction, enabling attendees to vote and provide feedback on technologies via an app, with a winner to be featured in the next monthly Tech Download Series session.
- This session aims to drive discussion, collaboration, and innovation in the cancer technology landscape.

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8. Hands On AI Driven Hackathon: Session Chair Doug Fridsma, MD, PhD. Health Universe.

- **Ci4CC–Health Universe Hackathon: Accelerating Innovation in Cancer Care Through Applied AI**

  As part of the CI4CC Spring Conference, we are proud to launch the AI Collaborative Initiative in partnership with Health Universe, featuring both virtual and in-person hackathon experiences. The initiative is designed to foster the development of modular, customizable apps that can function independently or integrate into AI-powered workflows aimed at enhancing cancer care. The goal is to identify high-value applications and workflows, culminating in a high-quality, peer-reviewed publication.

- **Hackathon Overview**

  In March 2025, Health Universe launched the AI Collaborative Initiative with Ci4CC to engage cancer centers and oncologists in building sharable applications and workflows that improve the quality and efficiency of cancer care. The initiative will officially kick off with a two-part hackathon aligned with the CI4CC Spring Conference (May 16–18, 2025).

  Topical Areas of Focus

  - Clinical Trials Management (all phases)
  - Clinical Decision Support for Oncology
  - Access to High-Quality Guidelines (e.g., NCCN, CAP)
  - Patient-Facing Support Apps
  - Administrative Efficiency Tools (e.g., Prior Authorization, Record Summarization)

  Virtual Hackathon (Programmers)

  - Kickoff: April 24, 2025, during the CI4CC Community Call
  - Target Audience: Students and teams with programming experience
  - Team Size: Up to 5 members
  - Participants will:
    - Develop and deploy apps within the Health Universe environment
    - Use Streamlit for stand-alone apps or FastAPI for workflow-integrated apps using Navigator
    - Submit a 5-minute demo video, app name, workspace, framework used (Streamlit or FastAPI), and GitHub repository

  Technical Requirements:

  - Teams will receive a dedicated workspace in Health Universe
  - Use GitHub for source control and connect to their workspace
  - Utilize secrets management for API/database integration
  - Use Slack (via Ci4CC) for collaboration and support

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    - Bring their own dev environments; Health Universe will assist in identifying public datasets (e.g., TCGA)
  - Expected Participation: 5–10 teams

- Non-Programmer Hackathon (In-Person)
- Sessions:
  - May 15, 2025
  - May 17, 2025

This hands-on experience will allow non-programmers to:

- Build simple apps using Streamlit and LLMs (e.g., ChatGPT)
- Deploy apps in a shared workspace within Health Universe
- Focus on usability and relevance, not technical implementation

No programming experience is required. All apps will be deployed publicly for review by conference attendees.

- **Judging & Awards**
  - Submission Deadline for Virtual Hackathon: May 16, 2025, at midnight PST
  - Judging: May 17, 2025
  - Virtual apps will be judged within their dedicated workspacesNon-programmer apps judged based on usability and innovation; GitHub or video submissions optional
  - **Awards Presentation:** May 18, 2025. *Prizes for top virtual and non-programmer apps will be announced soon.*

- **How to Participate**

  - Interested individuals and teams should register here:
  - CI4CC–Health Universe Hackathon Registration

- Important Dates

Date	Event
April 24, 2025	Virtual Hackathon Kickoff (via CI4CC Community Call)
May 15, 2025	First Non-Programmer Hackathon Session
May 16, 2025	Submission Deadline for Virtual Hackathon
May 16–18, 2025	Ci4CC Spring Conference – La Jolla, CA
May 17, 2025	Second Non-Programmer Hackathon + Judging Day
May 18, 2025	Awards & Presentation of Winning Apps

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9. Cancer Center Initiatives: Session Chair Sorena Nadaf-Rahrov, MS, MMI

Introduction & Outline: Ci4CC stands at the forefront of innovation and collaboration in the field of Cancer Informatics, fostering a community of diverse experts in clinical, biomedical, translational informatics, and bioinformatics. Our community, which includes basic researchers, clinicians, data scientists, AI/ML subject matter experts, and industry professionals, collaboratively commits to pushing the boundaries of cancer informatics, data science, Precision Oncology, Digital platforms, and Genomics.

Cancer Center Informaticians & Data Scientists are acutely aware of the challenges involved in constructing and maintaining digital platforms within our organizations, recognizing that this approach is no longer feasible for many. In conjunction with these efforts, Ci4CC proactively promotes and initiates collaborative partnerships between technology startups, seasoned biotech companies, and Cancer Centers. This inclusive strategy enhances the diversity of expertise within our community, fostering an environment where emerging innovations seamlessly integrate with established practices.

Benefits from attending session:

Whether you're a seasoned professional or an emerging talent in the field, we invite you to join our community and contribute to the transformative work happening within our task forces. Together, we forge ahead, pioneering solutions that make a lasting impact on the future of cancer research and healthcare. Welcome to a community where expertise meets innovation, and collective efforts drive meaningful change. Joining the session is an opportunity to delve into the forefront of innovation and collaboration within Cancer Informatics. Explore key components of this session, where a community of diverse experts, including clinical, biomedical, translational informatics, and bioinformatics professionals, converge to push the boundaries of cancer informatics, data science, Precision Oncology, Digital platforms, and Genomics.

Don't miss the chance to be part of a session that not only discusses but actively contributes to shaping the future of cancer informatics, fostering collaboration, and driving innovative solutions in the fight against cancer.

Session Key components and Panel focus areas:

- Gain insights from basic researchers, clinicians, data scientists, AI/ML subject matter experts, and industry professionals united in their commitment to advancing cancer informatics
- Understand the challenges involved in constructing and sustaining digital platforms within organizations, acknowledging the shifting landscape where traditional approaches are no longer universally feasible
- Explore how Ci4CC actively promotes and initiates collaborative partnerships between technology startups, seasoned biotech companies, and the Cancer Center Informatics Society Membership

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Session Overview

- Witness the inclusive strategy employed by Ci4CC, enhancing the diversity of expertise within the community. Understand how this approach creates an environment where emerging innovations seamlessly integrate with established practices
- Learn about Ci4CC's decade-long journey as a trailblazer, strategically establishing specialized task forces and working groups. Each initiative is meticulously designed to address specific facets of the overarching mission, showcasing agile, expert-driven teams in action
- Engage with the session to understand how Ci4CC's initiatives exemplify agile teams diligently working to overcome challenges, drive advancements, and achieve strategic goals in the dynamic landscape of precision oncology and translational research