Connecting the Immunotherapy Community to Drive Innovation and Collaboration

CAMBRIDGE HEALTHTECH INSTITUTE'S 11TH ANNUAL

Immuno-Oncology SUMMIT BOSTON 2023

AUGUST 7-9, 2023
SEAPORT HOTEL, BOSTON, MA

IN-PERSON | VIRTUAL

Conference Programs

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- Bispecific Antibodies for Cancer Immunotherapy
- Emerging Technologies for IO Targeting and Discovery
- Advances in CAR T Therapy
- Emerging Cell-Based Immunotherapies
- AI in Cancer Immunotherapy
- Preclinical & Translational Immuno-Oncology

Plenary Keynote

Cokey Nguyen, PhD
CSO, Atara Biotherapeutics, Inc.

Register Early for Maximum Savings!

Plenary Keynote Panel

Mohammed Asmal, MD, PhD
Senior Vice President, Head of Clinical, Prime Medicine, Inc.

Anthony J. Coyle, PhD
President, R&D, Repertoire Immune Medicines

David R. Kaufman, MD, PhD
Partner, Third Rock Ventures LLC

Uciane Scarlett, PhD
Principal, MPM Capital

Organized by Cambridge Healthtech Institute

#IOSummit **Immuno-OncologySummit.com**

About the Event

Over the past 11 years, CHI's Immuno-Oncology Summit has become the leading annual meeting focusing on the next wave of biotherapeutics, advances in technologies, and the valuable exchange of high-quality research from all disciplines of immuno-oncology. CHI's IO Summit provides access to a comprehensive 3-day program for participants to evaluate bi- or multi-specific biotherapeutics, explore the latest developments in existing and emerging cellular therapies, develop predictive preclinical models for translational strategies, and appraise AI and computational tools for the discovery of new targets, target classes, and combinations to overcome resistance.

Every year, we assemble an international mix of thought-leaders and decision-makers from industry and academia to bring you the latest developments in immuno-oncology, so that, together, we continue to align as a formidable force against cancer. Additionally, the progressive venue provides extensive networking and collaborative opportunities to enable teams to focus on their goals as they advance our understanding of the immune system to provide next-generation immunotherapies to all patients.

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Conference Programs

Mon, August 7 & Tues AM, August 8

- Bispecific Antibodies for Cancer Immunotherapy — View
- Advances in CAR T Therapy — View
- AI in Cancer Immunotherapy — View

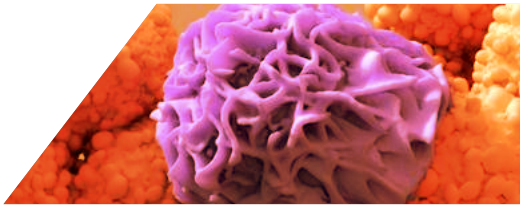
Tues PM, August 8 & Wed, August 9

- Emerging Technologies for IO Targeting and Discovery — View
- Emerging Cell-Based Immunotherapies — View
- Preclinical & Translational Immuno-Oncology — View

Flexible Registration Policy

Seamlessly switch between in-person and/or virtual registration

Select an in-person or virtual option, and you have the flexibility to switch your preferred event experience at any time leading up to the conference. Simply contact us, and we will either charge you the difference for upgrading to in-person or credit back the price for transferring to virtual. Our flexible registration is designed to take the uncertainties out of these uncertain times.



PLENARY KEYNOTE SESSIONS

TUESDAY, AUGUST 8, 2023 | 11:05 - 11:40

Advances in Cellular Immunotherapies

Cokey Nguyen, PhD
CSO, Atara Biotherapeutics, Inc.

TUESDAY, AUGUST 8, 2023 | 1:10 - 1:40

Plenary Keynote Panel Presentation:
The Outlook for Biotech Innovation in I-O and Cell Therapy

PANELISTS:

MODERATOR:
David R. Kaufman, MD, PhD
Partner, Third Rock Ventures LLC

Mohammed Asmal, MD, PhD
Senior Vice President, Head of Clinical, Prime Medicine, Inc.

Uciane Scarlett, PhD
Principal, MPM Capital

Anthony J. Coyle, PhD
President, R&D, Repertoire Immune Medicines

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DINNER SHORT COURSES*

TUESDAY, AUGUST 8, 2023 | 6:00 - 8:30 PM | **IN-PERSON ONLY**

Our short courses are designed to be instructional, interactive, and provide in-depth information on a specific topic. They allow for one-on-one interaction between the participants and instructors to facilitate the explanation of the more technical aspects that would otherwise not be covered during our main presentations.

SC2: Targeting Solid Tumors and Understanding the TME

Instructor:

Tony R. Arulanandam, DVM, PhD, Consultant, Immuno-Oncology and Co-Founder NextPoint Therapeutics

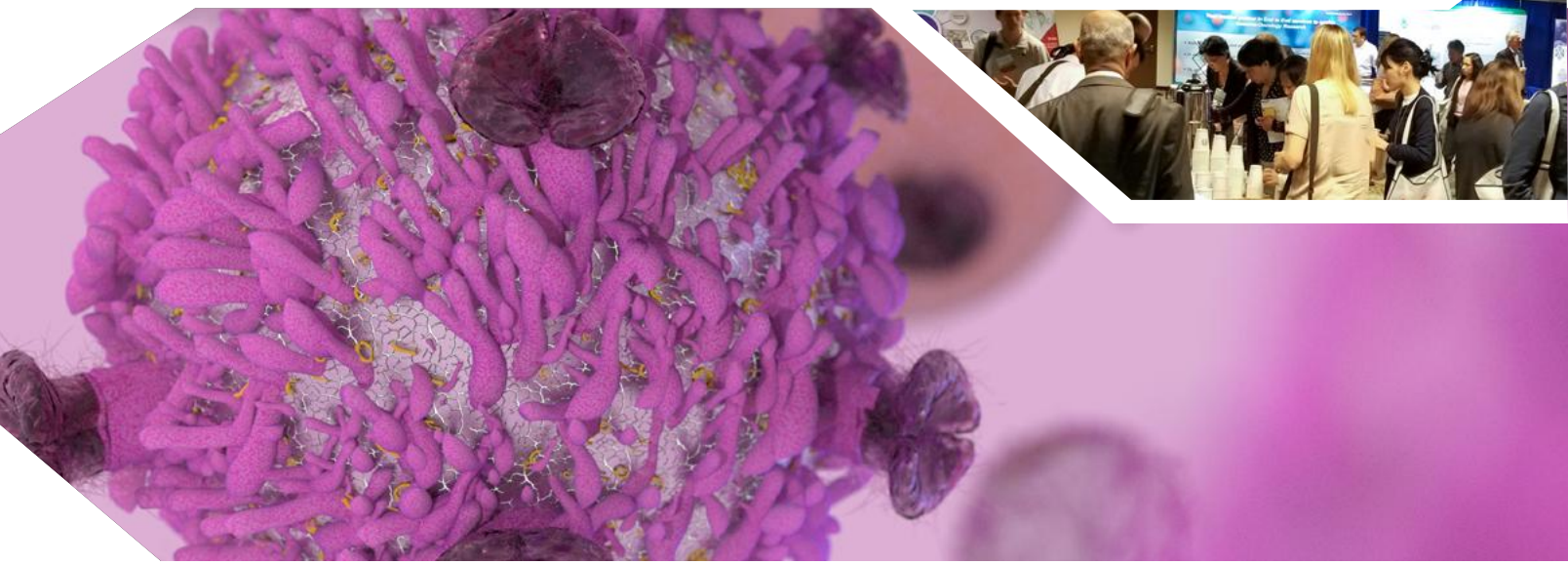
IN PERSON ONLY SHORT COURSE

INSTRUCTOR BIOGRAPHY

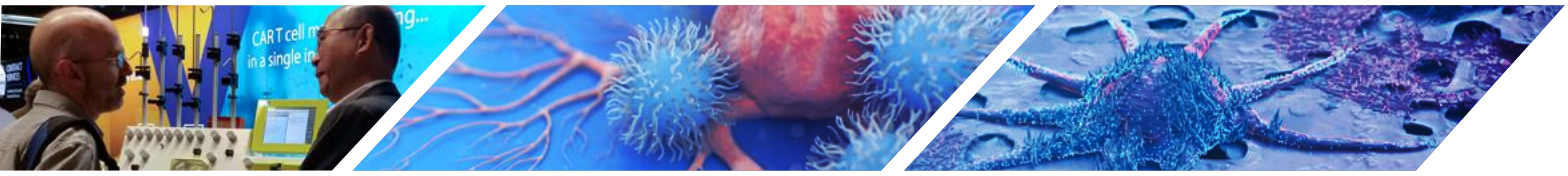
Tony R. Arulanandam, DVM, PhD, Consultant, Immuno-Oncology and Co-Founder NextPoint Therapeutics

Tony Arulanandam, DVM, PhD is an Immuno-oncology consultant at Dana-Farber Cancer Institute. He is currently Vice President and Head of Preclinical Research at Cytovia Therapeutics focused in developing NK Cell engager bispecific antibody and iPSC derived CAR-NK therapies for cancer. He is an immunologist with 20+ years of research and development experience developing multiple immunotherapies for autoimmune/ inflammatory diseases and cancer (5 BLA's and multiple IND's). He is also currently a mentor for post-docs at the Dana-Farber Cancer Institute through the post-graduate association.

**Separate Registration required.*



SPONSORSHIP & EXHIBIT OPPORTUNITIES



SPONSORSHIP & EXHIBIT OPPORTUNITIES

CII offers comprehensive packages that can be customized to your budget and objectives. Sponsorship allows you to achieve your goals before, during, and long after the event. Packages may include presentations, exhibit space, and branding, as well as the use of delegate lists. Signing on early will maximize your exposure to qualified decision-makers and drive traffic to your website in the coming months.

Podium Presentations – Available within Main Agenda!

Showcase your solutions to a guaranteed, targeted audience through a 15- or 30-minute presentation during a specific program, breakfast, lunch, or a pre-conference workshop. Package includes exhibit space, on-site branding, and access to cooperative marketing efforts by CII. Lunches are delivered to attendees who are already seated in the main session room. Presentations will sell out quickly! Sign on early to secure your talk.

Invitation-Only VIP Dinner/Hospitality Suite

Select specific delegates from the pre-registration list to attend a private function at an upscale restaurant or a reception at the hotel. From extending the invitations, to venue suggestions, CII will deliver your prospects and help you make the most of this invaluable opportunity.

One-to-One Meetings

CHI will set up 6-8 in-person meetings during the conference, based on your selections from the advance registration list. Our staff will handle invites, confirmations, and reminders, and walk the guest over to the meeting area. This package also includes a meeting space at the venue, complimentary main-conference registrations, branding, an 8'x10' exhibit space, and more.

Exhibit

Exhibitors will enjoy facilitated networking opportunities with qualified delegates, making it the perfect platform to launch a new product, collect feedback, and generate new leads. Exhibit space sells out quickly, so reserve yours today!

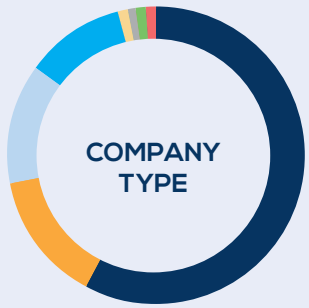
Additional branding and promotional opportunities are available, including:

» Conference Tote Bags
» Literature Distribution (Tote Bag Insert or Chair Drop)
» Badge Lanyards
» Conference Materials Advertisement
» Padfolios and More...

For more information regarding exhibit and sponsorship, please contact:

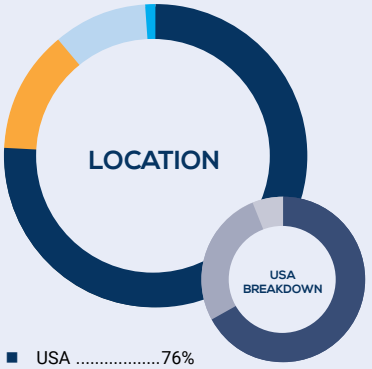
Rod Eymael
Business Development Manager
781-247-6286 | reymael@healthtech.com

2022 Attendee Demographics



- Biotech 58%
- Pharma 14%
- Healthcare 13%
- Academic 11%
- Financial 1%
- Government 1%
- Services 1%
- Other 1%

- Executive 24%
- Director 15%
- Manager 4%
- Professor 11%
- Scientist/Technologist 29%
- Sales & Marketing 16%
- Assistant 1%



- USA 76%
- Europe 13%
- Asia 10%
- Rest of World ..1%

- East Coast..... 67%
- West Coast 27%
- Mid West 6%

MONDAY, AUGUST 7

7:30 am Registration and Morning Coffee

NOVEL TARGETING AND COMBINATION STRATEGIES

8:30 Organizer's Remarks
Nicole Cerniuk, Conference Producer, Cambridge Innovation Institute

8:35 Chairperson's Opening Remarks
Patricia Giblin, PhD, Vice President, Biology, Revitope Oncology

8:40 KEYNOTE PRESENTATION: Single-Domain Antibodies Targeting Activating Receptors on NK Cells Enable Facile Engineering of Various Potent NK Cell Engager Formats
Stefan Zielonka, PhD, Senior Director and Global Head of Antibody Discovery and Protein Engineering, Merck Healthcare KGaA
We have generated camelid-derived single domain antibodies targeting different Natural Cytotoxicity Receptors for the conditional activation of NK cells. Combined with a humanized Fab version of Cetuximab for tumor targeting, resulting NK cell engagers (NKCEs) trigger potent NK cell-mediated killing of EGFR-overexpressing tumor cells. By modulating valencies of incorporated binders as well as via engineering the spatial orientation of individual paratopes, killing capacities of constructed NKCEs can be augmented significantly.

9:10 TwoGATE—A Differentiated Approach for T Cell Redirection in Solid Tumors
Patricia Giblin, PhD, Vice President, Biology, Revitope Oncology
T cell engagers promise to revolutionize cancer treatment, however, on-target off-tumor toxicities limit therapeutic potential. Revitope is developing a class of cancer therapeutics with split anti-CD3 paratopes that enable targeting each half-paratope to different antigens on the same cell. TwoGATE have pM potency *in vitro*, potently regress tumors *in vivo*, are well-tolerated in non-human primates, and have highly favorable developability properties. Data on our lead program, REV403 will be presented.

9:40 SELECTED POSTER PRESENTATION: PB203: An Innovative Multi-Specific Fc Fusion Protein Simultaneously Targeting PD-L1, VEGF-A, and PlGF for Enhanced Cancer Treatment
Hyungul Yang, PhD, Senior Researcher, R&D, Panolos Bioscience
PB203 stands alone as the sole Fc fusion protein in the world that simultaneously engages PD-L1, VEGF-A, and PlGF. PB203 has demonstrated synergy with chemotherapy in the treatment of pancreatic cancer by altering the tumor microenvironment. Through structural fine-tuning, our team has enhanced its stability and functionality. Exhibiting superior *in vivo* performance, this multi-specific protein drug is being developed as a viable and promising treatment for cancer patients.

NETWORKING COFFEE BREAK WITH INTERACTIVE BREAKOUT DISCUSSIONS

10:10 Interactive Breakout Discussions
Engage in in-depth discussions with industry experts and your peers about the progress, trends, and challenges you face in your research! Breakout discussion groups play an integral role in networking with potential collaborators. They provide an opportunity to share examples from your work, vet ideas with peers, and be part of a group problem-solving endeavor. Grab a cup of coffee and gather with colleagues during the discussion of your choice. Please visit the Breakout Discussion page on the conference website for a complete listing of topics and descriptions.

IN-PERSON ONLY BREAKOUT DISCUSSION: Challenges and Opportunities of Targeting Agonistic Co-Stimulators and Cytokines as Immunotherapy for Cancer
Josh Xiao, PhD, Entrepreneur in Residence, RA Capital Management
- What are the challenges and opportunities in targeting co-stimulators for IO
- What are the challenges and opportunities in targeting cytokines for IO
- How can we build conditional-active agonistic co-stimulators and cytokines to target only right type of cells in the right place?

IN-PERSON ONLY BREAKOUT DISCUSSION: How to Design Bispecific Antibodies or Bifunctional Antibody Fusions to Modulate TME
Zhinan Xia, PhD, CSO, DynamiCure Biotechnology
- How to normalize tumor blood vessels for better drug delivery into solid tumor?
- How to modulate TME to optimize immune cell's anti-tumor activity?
- How to reduce hypoxia in solid tumor TME?
- Bispecific Ab ADC better than mAb ADC ?

NOVEL TARGETING AND COMBINATION STRATEGIES (CONTINUED)

10:55 Bispecific Macrophage Engager (BiME) for Solid Tumor Immunotherapy
Hongtao Lu, PhD, CSO & Co-Founder, Discovery, Elpiscience Biopharma Ltd.
Anti-CD3-based bispecific T cell engagers (BiTE) showed limited clinical efficacy in solid tumors and caused significant cytokine storm. Similar to BITE where T cells are activated by CD3 antibody, we constructed a novel bispecific macrophage engager (BiME) platform where macrophage is activated by a SIRPa inhibitory antibody that is directed to a particular tumor via the targeting of the tumor-associated antigen (TAA) antibody, resulting in phagocytosis of the tumor.

11:25 Identification of Novel pHLA Targets for Solid Tumor Targeting with High Potency Modalities
Lisa Kirkemo, PhD, Senior Scientist, Therapeutic Discovery, 3T Biosciences, Inc.
T cells recognize intracellular targets presented by HLA to enable potent anti-tumor immune responses, and these targets can be leveraged to generate off-the-shelf therapeutics using T cell bispecific engagers to treat a broad patient population. We've developed 3T-TRACE to rapidly identify the antigens of orphan T cells from patient tumors and a TCR mimetic platform to rapidly generate potent and specific binders for therapeutic development.

11:55 Navigating the Manufacturing Roadmap for Bispecific Antibodies in Immuno-Oncology: Insights into Overcoming Bottlenecks
Weili Wang, PhD, Senior Director of Technical Support, GenScript ProBio USA Inc.
Bispecific antibodies show immense promise in cancer immunotherapy, but optimizing their manufacturing process presents unique challenges compared to conventional mAbs. This talk will review key CMC considerations in developing a robust, scalable bispecific antibody workflow, from clone selection to purification and analytical assay. Case studies of upstream optimization, purification process optimization, analytical characterization will illustrate innovative strategies to address aggregation, improper pairing, low yields, and process variability.

12:25 pm Transition to Lunch

12:30 LUNCHEON PRESENTATION Sanyou Biopharmaceuticals--Global leading integrated R&D Service platforms for innovative biologics research
Jin Qiu, Dr., Scientific Director, Corporate strategy, Sanyou Bio

1:00 Session Break

MODULATING BISPECIFIC ANTIBODIES AND THEIR MICROENVIRONMENTS

1:30 Chairperson's Remarks
Laura von Schantz, PhD, CTO, Alligator Bioscience AB

1:35 A Novel Next-Generation T Cell Bispecific Antibody with a Unique Mechanism to Optimize TME

Shinya Ishii, Senior Manager, Research Division, Chugai Pharmaceutical Co. Ltd.

T cell bispecific antibodies have been effective in hematologic malignancies, but have shown limited efficacy in solid tumors. One of the critical factors behind the limited efficacy of T cell bispecifics is the suppressive tumor microenvironment. To overcome this, we developed a novel T cell bispecific antibody which uses a unique mechanism to remodel the tumor microenvironment and improve T cell activation status. The preclinical data will be presented.

2:05 Bispecific Neo-X-Prime Antibodies Targeting CD40 and Tumor-Associated Antigens Promote Cross-Priming of T Cells Resulting in an Anti-Tumor Response Superior to Monospecific Antibodies

Laura von Schantz, PhD, CTO, Alligator Bioscience AB

Alligator´s Neo-X-Prime platform consists of bispecific antibodies targeting CD40 and tumor-associated antigens (TAA) that efficiently enhance cross priming of tumor-specific T cells. Neo-X-Prime bispecific antibodies display superior preclinical anti-tumor efficacy compared to the combination of the two monospecific antibodies. We have demonstrated that the lead Neo-X-Prime candidate drug – ATOR-4066, targeting CD40 and CEA – is safe and induces potent anti-tumor effects in preclinical models.

2:35 Building Next-Gen Biologics Leveraging Industry-Leading Fully Human Heavy Chain-Only Antibody Platforms

Jiyong Zhang, Ph.D., Head of Business Development, Nona Biosciences

The HCAb Harbour Mice®, presented by Nona Biosciences, is the first fully human Heavy Chain only Antibody (HCAb) transgenic mice platform in history. It is optimized and clinically validated with global patent protection. HCAb Harbour Mice® efficiently produces high affinity, and functional HCAbs with excellent biophysical characteristics. Fully human HCAbs are the ideal antibody format to generate a multitude of next-generation therapeutic modalities, including bispecific/multispecific antibodies, CAR-T, ADC, and mRNA therapy.

3:05 Grand Opening Refreshment Break in the Exhibit Hall with Poster Viewing

MODULATING BISPECIFIC ANTIBODIES AND THEIR MICROENVIRONMENTS (CONTINUED)

3:45 Rapid, Site-Specific Labeling of "Off-the-Shelf" and Native Serum Autoantibodies with T Cell-Redirecting Domains

Burcin Altun, PhD, Senior Research Investigator, Hospital of the University of Pennsylvania

We developed a method that can site-specifically and covalently attach an anti-CD3 scFv or anti-CD3 nanobody to any off-the-shelf, human IgG, or patient's own anti-tumor antibodies. Biggest advantage of this system is that it does not require antibody engineering, cloning, or any modifications. As a result, we can rapidly prepare bispecific antibodies with high purity and are able to combine it with personalized tumor targeting autoantibody-based T cell immunotherapy.

4:15 Conditionally Active Agonistic Bi-/Tri-Specific Biologics for Cancer

Jack Feng, PhD, Founder & CEO, Binacea Pharma

Cancer immunotherapies have revolutionized cancer treatment. However, the majority of patients either do not respond or relapse soon after treatment with checkpoint inhibitor(s). In this talk, we will share our strategy and progress in developing innovative conditionally active bi-/multi-specific cytokines or co-stimulators that have significant therapeutic window. They become very active precisely on tumor reactive T cells only in the tumor microenvironment, but are extremely weak in the peripheral blood.

4:45 PANEL DISCUSSION: Novel Strategies for Microenvironment Modulation

Moderator: Laura von Schantz, PhD, CTO, Alligator Bioscience AB

Topics for Discussion
- Using single domain antibodies for the next-gen therapeutics
- Developability of fully human single domain antibodies

Panelists:

Jack Feng, PhD, Founder & CEO, Binacea Pharma

Jiyong Zhang, PhD, Head of Business Development, R&D, Nona Biosciences

Shinya Ishii, Senior Manager, Research Division, Chugai Pharmaceutical Co. Ltd.

5:15 Welcome Reception in the Exhibit Hall with Poster Viewing

6:15 Close of Day

TUESDAY, AUGUST 8

7:30 am Registration and Morning Coffee

OVERCOMING OBSTACLES TO EFFICACY

8:30 Chairperson's Remarks

Brian A. Rabinovich, PhD, CSO, R&D, Fuse Biotherapeutics

8:35 NVG-222: A ROR1-Targeting T Cell Engager with Integral Autoregulating Capability Designed to Reduce the Risk of Serious Adverse Events Related to T Cell Activation

David W. Granger, PhD, Vice President, R&D, NovalGen Ltd.

T cell engagers (TCEs) are realising their promise with several recent approvals and multiple ongoing clinical trials. Their efficacious mechanism of action does come with a cost, as grade =3 adverse events are commonplace. NovalGen's autoregulation technology has the potential to reduce these life-threatening toxicities and extend the TCE therapeutic window, enhancing patient safety. NVG-222 is a next-generation ROR1-targeting autoregulating TCE primed for entry into the clinic in 2024Q1.

9:05 Talk Title to Be Announced

Wei Li, PhD, CSO, Cytovia Therapeutics

9:35 Coffee Break in the Exhibit Hall with Poster Viewing

OVERCOMING OBSTACLES TO EFFICACY (CONTINUED)

10:05 Computational Models to Predict the Therapeutic Index and Optimal Design of Bispecific Antibody

Ran Li, PhD, Principal Scientist, Preclinical & Translational PKPD, Genentech, Inc.

Bispecific antibodies (bsAbs) have been developed to enhance tumor targeting while reducing systemic toxicity. However, it is still unclear how to design bsAb to maximize its therapeutic index (TI). I will describe computational models that predict PK, efficacy, toxicity, and TI of bsAbs. I will demonstrate that our *in silico* predictions match with *in vivo* observation, and these models can be used to guide the rationale design of bsAbs.

10:35 Engineering Bispecific Conditional Agonists for Solid Tumors: Considerations of Geometry and Payloads to Enhance Innate and Adaptive Immunity while Reducing Immune Exhaustion and Toxicity

Brian A. Rabinovich, PhD, CSO, R&D, Fuse Biotherapeutics

First-generation bispecific conditional-agonists were designed for maximum potency. Challenges included toxicity, exhaustion, lack of memory, and response durability. We developed a bispecific platform that simultaneously adjusts synaptic distance and apparent affinity to optimize signal strength. As such, we are able to generate conditional agonists that maintain immune fitness and tune such proteins for little to no cytokine release for inclusion of a tumor-targeted controlled pro-inflammatory payload.

11:05 Transition to Plenary Session

PLENARY SESSION

11:10 PLENARY KEYNOTE PRESENTATION:
Advances in Cellular Immunotherapies
Cokey Nguyen, PhD, CSO and CTO, Atara Biotherapeutics, Inc.
Allogeneic EBV T cell therapies: ushering in the next wave of innovation opportunities and challenges for different cell therapy platforms and approaches. Our journey behind the EU approval of the industry's first-ever allogeneic T cell therapy and how this experience is aiding us to design the next generation of CAR T to overcome limitations of therapies today.

11:45 Enjoy Lunch on Your Own

1:05 pm Organizer's Remarks
Mary Ann Brown, Executive Director, Conferences, Cambridge Healthtech Institute

1:15 PLENARY KEYNOTE PANEL: The Outlook for Biotech Innovation in I-O and Cell Therapy




Moderator: David R. Kaufman, MD, PhD, Partner, Third Rock Ventures LLC
It has been a challenging year for the biotech market, with significant external pressures on 'classical' I-O, bispecifics, and cell therapies. How have these external pressures manifested, and what strategic shifts have preclinical and clinical-stage companies in these spaces had to make? What are the implications for new company creation efforts, and what scientific advances are creating tailwinds despite the challenging market environment? This insider VC panel shares their perspectives.
Panelists:
Anthony J. Coyle, PhD, President, R&D, Repertoire Immune Medicines
Mohammed Asmal, MD, PhD, Senior Vice President, Head of Clinical, Prime Medicine, Inc.
Uciane Scarlett, PhD, Principal, MPM Capital

1:45 Close of Bispecific Antibodies for Cancer Immunotherapy Conference

5:30 Dinner Short Courses*
SC2: IN PERSON ONLY: Targeting Solid Tumors and Understanding the TME
*Separate registration is required. See short course pages for details.

MONDAY, AUGUST 7

7:30 am Registration and Morning Coffee

TARGETING SOLID TUMORS

8:30 Organizer's Remarks
Virginia Maxwell, Senior Associate Producer, Cambridge Healthtech Institute

8:35 Chairperson's Opening Remarks
Mitchell Ho, PhD, Senior Investigator and Deputy Chief, Laboratory of Molecular Biology; Director, Antibody Engineering Program, National Cancer Institute (NCI), National Institutes of Health

8:40 Engineering of CAR T Cells Targeting Glypicans in Solid Tumors
Mitchell Ho, PhD, Senior Investigator and Deputy Chief, Laboratory of Molecular Biology; Director, Antibody Engineering Program, National Cancer Institute (NCI), National Institutes of Health
My laboratory has characterized glypicans including GPC1, GPC2, and GPC3 as immunotherapeutic targets for antibody and cell-based immunotherapies. In this talk, I will discuss our recent research towards the optimization of the extracellular hinge to improve CAR T cells for treating solid tumors such as liver cancer and pancreatic cancer. I will also discuss nanobody-based CAR T cells.

9:10 Phase I/II Trial of MUC1*-Targeting CAR T Cells for Solid Tumor Cancers
Cynthia C. Bamdad, PhD, CEO, Minerva Biotechnologies Corp.
Previous attempts to therapeutically target MUC1 failed because they targeted the tandem repeat domain, which is shed from tumor cells. Cancer cells express a cleavage product, MUC1*. We have two MUC1*-targeting CAR Ts in the clinic, wherein one bears 1XX mutations for increased persistence. Both are targeted to the tumor by an antibody that binds to a cryptic site, only revealed after cleavage and release of the tandem repeat domain.

9:40 KEYNOTE PRESENTATION: Need for Solid Tumor-Specific CARs: Current Status and Future Directions
Prasad Adusumilli, MD, FACS, FCCP, Deputy Chief and Attending, Thoracic Surgery; Vice Chair, Department of Surgery; Director, Mesothelioma Program, Memorial Sloan-Kettering Cancer Center; Associate Professor, Cardiothoracic Surgery, Weill Cornell Medical Center
CAR T cells in solid tumors have to overcome several barriers specific to solid tumor microenvironment: stroma, heterogenous tumor antigen expression, immunosuppressive microenvironment, as well as T cell exhaustion in the presence of overwhelming tumor burden. The presentation will focus on the influence of these factors on CAR T cell function that also differs from site to site within a patient, depending on the solid organ harboring the metastasis.

NETWORKING COFFEE BREAK WITH INTERACTIVE BREAKOUT DISCUSSIONS

10:10 Interactive Breakout Discussions
Engage in in-depth discussions with industry experts and your peers about the progress, trends, and challenges you face in your research! Breakout discussion groups play an integral role in networking with potential collaborators. They provide an opportunity to share examples from your work, vet ideas with peers, and be part of a group problem-solving endeavor. Grab a cup of coffee and gather with colleagues during the discussion of your choice. Please visit the Breakout Discussion page on the conference website for a complete listing of topics and descriptions.

IN-PERSON ONLY BREAKOUT DISCUSSION: CAR Ts for Solid Tumors
Prasad Adusumilli, MD, FACS, FCCP, Deputy Chief and Attending, Thoracic Surgery; Vice Chair, Department of Surgery; Director, Mesothelioma Program, Memorial Sloan-Kettering Cancer Center; Associate Professor, Cardiothoracic Surgery, Weill Cornell Medical Center

COMBINING POWERS AGAINST SOLID TUMORS

10:55 Multimodular CAR T Cell Therapies for Durable Efficacy against Solid Tumors
Katie M. O'Callaghan, Director, Immuno-Oncology Pharmacology, Elpis Biopharmaceuticals
We utilize proprietary mRNADis and mSCAFold platform technologies to discover modules for cell engineering and processing. We will present preclinical studies of EPC-002, a human B7H3 armored CAR that simultaneously counters multiple mechanisms of TME immunosuppression and mediates persistent anti-tumor activity. EPC-002 is being advanced to clinic for resistant/refractory B7H3-positive solid tumor indications.

11:25 Combinatorial Treatment with Oncolytic Adenoimmunotherapy and CAR T Cell Therapy for Solid Tumor Treatment
Masataka Suzuki, PhD, Assistant Professor, Center for Cell & Gene Therapy, Department of Medicine, Baylor College of Medicine
In solid tumors, CAR T cells must overcome the challenges of the immunosuppressive tumor microenvironment. We hypothesized that pre-treating tumors with our binary oncolytic/helper-dependent adenovirus (CAdVEC) that produces local oncolysis and expresses immunostimulatory molecules enhances the anti-tumor activity of adoptively transferred CAR T cells. Our preclinical results indicate that local treatment of CAdVEC can systemically enhance CAR T cell responses. We are now investigating this combination strategy in patients (NCT03740256).

11:55 Perspectives and Best Practices for Performing Pharmacology and Toxicology Studies with CAR T Cells charles river
David Harris, Research Director, Charles River
The preclinical pathway for CAR T drug development continues to evolve. The current paradigm for evaluating pharmacology and safety is bespoke and driven by product specific attributes. Typically, cell therapy product development will utilize a variety of *in vitro* and *in vivo* assays to assess activity and toxicology. I will provide perspectives on best practices regarding preclinical study designs using selected data from studies with CD19 and HER2-targeting CAR T cells.

12:25 pm Transition to Lunch

12:30 Enjoy Lunch on Your Own

1:00 Session Break

OVERCOMING THE TUMOR MICROENVIRONMENT

1:30 Chairperson's Remarks
Katie M. O'Callaghan, Director, Immuno-Oncology Pharmacology, Elpis Biopharmaceuticals

1:35 Development of CAR T Cell Therapy for Renal Cell Carcinoma Treatment
Yufei Wang, PhD, Research Fellow, Cancer Immunology & Virology, Dana Farber Cancer Institute
Chimeric Antigen Receptor (CAR) T cell therapy has proven to be a powerful immunotherapy for hematologic malignancies. However, this success has not yet been transferred to solid tumors due to the immunosuppressive tumor microenvironment (TME). To provide a more favorable TME, we engineered CAR T cells targeting carbonic anhydrase IX (CAIX) secreting immune checkpoint inhibitors (ICIs) to rewire TME into active antitumor immunity for renal cell carcinoma (RCC) treatment.

2:05 Refueling CAR T Cell Therapy for Solid Tumors
Xiaotong Song, PhD, Associate Professor, Translational Medical Sciences, Texas A&M University
The competition for scarce nutrients in the TME between tumor cells and T cells presents a major challenge to sustained T cell proliferation and function. To overcome these challenges, we have created a novel platform that enhances CAR T cell mobility and provides alternative fuel for T cell growth and function in the absence of glucose.

2:35 Building Next-Gen Biologics Leveraging Industry-Leading Fully Human Heavy Chain-Only Antibody Platforms

Jiyong Zhang, Ph.D., Head of Business Development, Nona Biosciences

The HCAb Harbour Mice®, presented by Nona Biosciences, is the first fully human Heavy Chain only Antibody (HCAb) transgenic mice platform in history. It is optimized and clinically validated with global patent protection. HCAb Harbour Mice® efficiently produces high affinity, and functional HCAbs with excellent biophysical characteristics. Fully human HCAbs are the ideal antibody format to generate a multitude of next-generation therapeutic modalities, including bispecific/multispecific antibodies, CAR-T, ADC, and mRNA therapy.

3:05 Grand Opening Refreshment Break in the Exhibit Hall with Poster Viewing

ANTIBODY-BASED CAR Ts, LOGIC GATES, AND CONTROLLING CAR T FUNCTION

3:45 Identifying Tumour-Specific HLA-Associated Peptides & Generating TCR-Mimetic Antibody-Based CAR T Cell Therapies

David J. DiLillo, PhD, Senior Director, Regeneron Pharmaceuticals, Inc.

This presentation will focus on: outlining a proteogenomic/immunopeptidomic platform for the identification of tumour-specific HLA-associated peptides from patient tumours; immunization and screening strategies to generate HLA/peptide-binding TCR-mimetic antibodies with high affinities and specificities; and optimizing TCR-mimetic antibody-based CAR design for maximal anti-tumour potency and benchmarking to TCR-based cell therapies.

4:15 Synthetic Gene Circuits for Cancer Immunotherapy—Turning Cancer Cells against Themselves

Ming-Ru Wu, MD, PhD, Assistant Professor, Department of Cancer Immunology and Virology, Dana-Farber Cancer Institute, Harvard Medical School

We have developed synthetic cancer-targeting gene circuits that specifically target cancer cells. Once the circuits enter cells, they will sense the activity of several cancer-associated transcription factors and get activated in tumor cells, to trigger tumor-localized combinatorial immunotherapy. Circuits mediate robust therapeutic efficacy in ovarian cancer mouse models. This platform can be adjusted to treat multiple cancer types and can potentially trigger any genetically-encodable immunomodulators as therapeutic outputs.

4:45 Improving CAR T Manufacturing and Efficacy with CellPryme

Daniel A. Shelly, PhD, Vice President, Business Development & Alliances, Prescient Therapeutics Pty Ltd.

The clinical grade CellPryme technology is used to make better immune cells. CellPrymeM is a single 24-hour administration during the expansion stage of CAR-immune cell manufacturing that shifts cells towards a memory phenotype, conferring stronger persistence, less exhaustion, improved tumor trafficking/penetrance, and significantly improves tumor/cell killing. CellPryme-A is administered before and/or alongside a cell therapy to address the immunosuppressive tumour microenvironment.

5:15 Welcome Reception in the Exhibit Hall with Poster Viewing

6:15 Close of Day

TUESDAY, AUGUST 8

7:30 am Registration and Morning Coffee

DECENTRALIZED MANUFACTURING AND ALLOGENEIC APPROACHES

8:30 Chairperson's Remarks

Lee Buckler, Senior Vice President, Advanced Therapies, Blood Centers of America

8:35 Tomorrow's Cell-Based IOs: Cheaper, Better, Faster—and Local

Lee Buckler, Senior Vice President, Advanced Therapies, Blood Centers of America

First-generation CAR T cell therapies represent life-changing medical innovation and signal significant disruption in both healthcare delivery and reimbursement models, but they come with serious manufacturing, supply chain, and cost challenges. This talk will highlight some of the technology push, market pull, and regulatory innovations already underway which suggests next-generation cell-based immunotherapies will begin to address some of these challenges.

9:05 FEATURED PRESENTATION: Genome Engineering Strategies for Allogeneic CAR T Cell Therapies to Improve Efficacy and Durability

Justin Skoble, PhD, Vice President, Tech Operations, Caribou Biosciences, Inc.

This presentation will discuss: Developing a robust and scalable manufacturing platform process for efficiently editing healthy donor T cells, and increasing potency and persistence in next-generation CAR T cell therapies using the chRDNA genome editing technology.

9:35 Coffee Break in the Exhibit Hall with Poster Viewing

IN VIVO ENGINEERED CAR T THERAPIES

10:05 *In situ* CAR Therapy Using oRNA

Robert Mabry, PhD, CSO, Orna Therapeutics

We have developed a novel, synthetic, circular coding RNA platform (oRNA technology) which exhibits significant improvements in production, expression, and formulation compared to mRNAs. Given the successes as well as remaining challenges with CAR T cell therapies, we combined our oRNA technology with novel immunotropic LNPs to create an off-the-shelf "autologous" *in situ* CAR (isCAR) therapy that effectively delivers anti-CD19 CAR to immune cells and regresses tumors *in vivo*.

10:35 *In vivo* Reprogramming of CAR T Cells Using Targeted LNPs

Viktor Lemgart, PhD, Research Fellow, Tidal Therapeutics, a Sanofi Company

Ex vivo CAR T cell therapies have proven successful in the clinic but still face significant challenges due to the elaborate and expensive engineering and manufacturing of T cells. Tidal Therapeutics has developed a new technology that allows the generation of CAR T cells directly *in vivo*. The technology uses mRNA, formulated in lipid nanoparticles that are specifically targeted to circulating T cells to transiently express CARs on the surface.

11:05 Transition to Plenary Session

PLENARY SESSION

11:10 PLENARY KEYNOTE PRESENTATION: Advances in Cellular Immunotherapies

Cokey Nguyen, PhD, CSO and CTO, Atara Biotherapeutics, Inc.

Allogeneic EBV T cell therapies: ushering in the next wave of innovation opportunities and challenges for different cell therapy platforms and approaches. Our journey behind the EU approval of the industry's first-ever allogeneic T cell therapy and how this experience is aiding us to design the next generation of CAR T to overcome limitations of therapies today.

11:45 Enjoy Lunch on Your Own

1:05 pm Organizer's Remarks

Mary Ann Brown, Executive Director, Conferences, Cambridge Healthtech Institute

1:15 PLENARY KEYNOTE PANEL: The Outlook for Biotech Innovation in I-O and Cell Therapy




Moderator: David R. Kaufman, MD, PhD, Partner, Third Rock Ventures LLC
It has been a challenging year for the biotech market, with significant external pressures on 'classical' I-O, bispecifics, and cell therapies. How have these external pressures manifested, and what strategic shifts have preclinical and clinical-stage companies in these spaces had to make? What are the implications for new company creation efforts, and what scientific advances are creating tailwinds despite the challenging market environment? This insider VC panel shares their perspectives.
Panelists:
Anthony J. Coyle, PhD, President, R&D, Repertoire Immune Medicines
Mohammed Asmal, MD, PhD, Senior Vice President, Head of Clinical, Prime Medicine, Inc.
Uciane Scarlett, PhD, Principal, MPM Capital

1:45 Close of Advances in CAR T Therapy Conference

5:30 Dinner Short Course*
SC2: IN PERSON ONLY: Targeting Solid Tumors and Understanding the TME
*Separate registration is required. See short course pages for details.

MONDAY, AUGUST 7

7:30 am Registration and Morning Coffee

DATA SCIENCE – MEASURING, MINING, AND MODELING

8:30 Organizer's Remarks

Mary Ann Brown, Executive Director, Conferences, Cambridge Healthtech Institute

8:35 Chairperson's Opening Remarks

Shameer Khader, PhD, Executive Director, Global Head of Data Science, Data Engineering and Computational Biology, Sanofi

8:40 Turning Machine Learning Science into Novel Medicines

Andrew Buchanan, PhD, FRSC, Principal Scientist, Biologics Engineering, Oncology, AstraZeneca

Turning science into medicine with computational & ML-empowered tools for biologic molecule design. Andrew will give an overview of the languages of biotherapeutics & machine learning, discuss the impact of quality curated data, and finally, demonstrate applications of machine learning in biomolecule design.

9:10 Context-aware Amino Acid Embedding Advances Analysis of TCR-epitope Interactions

Heewook Lee, PhD, Assistant Professor, Computer Science & Engineering, Arizona State University

Accurate prediction of binding interaction between TCRs and host cells is fundamental to understanding the regulation of the adaptive immune system as well as to developing data-driven approaches for personalized immunotherapy. In this talk, I demonstrate the importance of devising a suitable embedding technique and present our context-aware amino acid embedding models (catELMo) designed explicitly for TCR analysis.

9:40 Improved Prediction of Immune Checkpoint Blockade Efficacy across Multiple Cancer Types

Diego Chowell, PhD, Principal Investigator, Precision Immunology Institute, Icahn School of Medicine

We developed a machine learning model to predict immune checkpoint blockade (ICB) response by integrating genomic, molecular, demographic and clinical data from a comprehensively curated cohort of patients treated with ICB across 16 different cancer types. In a retrospective analysis, the model achieved high sensitivity and specificity in predicting clinical response to immunotherapy and predicted both overall survival and progression-free survival in the test data across different cancer types.

NETWORKING COFFEE BREAK WITH INTERACTIVE BREAKOUT DISCUSSIONS

10:10 Interactive Breakout Discussions

Engage in in-depth discussions with industry experts and your peers about the progress, trends, and challenges you face in your research! Breakout discussion groups play an integral role in networking with potential collaborators. They provide an opportunity to share examples from your work, vet ideas with peers, and be part of a group problem-solving endeavor. Grab a cup of coffee and gather with colleagues during the discussion of your choice. Please visit the Breakout Discussion page on the conference website for a complete listing of topics and descriptions.

IN-PERSON ONLY BREAKOUT DISCUSSION: AI in Antibody Discovery and Engineering

Sherlock Hu, Chief Information Officer, GV20 Therapeutics

Xiaole Shirley Liu, PhD, CEO, GV20 Therapeutics

- AI in predicting binders
- AI in predicting epitopes and paratopes
- AI in optimizing antibody affinity and specificity
- AI in humanizing antibodies
- AI in evaluating antibody developability

BREAKOUT DISCUSSION: IN-PERSON ONLY BREAKOUT DISCUSSION: Data Delicacies: Crafting High-Quality, Consent-Driven Data Products for AI & ML in Biopharmaceuticals

Justin H Johnson, Executive Director, Oncology Data Science, AstraZeneca Oncology R&D

- Mastering the Data Lifecycle: Best practices for end-to-end data product engineering while ensuring data quality and relevance.
- Data Governance Done Right: Implementing data management strategies to maintain data integrity and consistency throughout the pipeline.
- Streamlined Data Pipelines: Architecting efficient data processing workflows that enable traceability, data integrity, and reproducibility.
- Collaboration is Key: Fostering interdisciplinary teamwork between data scientists, engineers, and domain experts to design robust data products.

DATA-DRIVEN IO THERAPY DEVELOPMENT

10:55 A Machine Learning-Driven Approach for the Multiparametric Lead Optimisation of Anti-tumour T Cell Engagers

Pierre-Yves Colin, PhD, Associate Principal Scientist, Antibody Engineering, LabGenius Ltd.

Optimising therapeutic antibodies across multiple properties is challenging. For T cell engagers (TCE) targeting solid tumours, cancer-vs.-normal cell selectivity is particularly difficult to achieve. LabGenius' lead optimisation platform generates high-quality data from complex assays for machine learning to decipher design-fitness relationships and guide screening efforts to fruitful areas of the design space. We demonstrate our capability by discovering HER2 TCEs up to 400-fold more tumour-selective than a clinical benchmark.

11:25 AI-Driven Immuno-Oncology Drug Discovery, Development, and Repositioning

Shameer Khader, PhD, Executive Director, Global Head of Data Science, Data Engineering and Computational Biology, Sanofi

11:55 Deciphering Mechanisms of Tumor Immune Escape Using AI-Driven Analytics for Patient Stratification in Clinical Trials

BostonGene

Michael Goldberg, Director, Immunology and Immunoprofiling, R&D, BostonGene

While the involvement of multiple molecular and cellular factors is known to impact patient responses, they are often not considered in IO clinical trial enrollment or therapeutic decision-making. BostonGene shares how providing a comprehensive profile of a patient's disease for therapy selection and stratification for IO clinical trials improve outcomes using CLIA-certified WES and RNA-seq paired with best-in-class analytics.

12:25 pm Transition to Lunch

12:30 Enjoy Luch on Your Own

1:00 Session Break

PLATFORMS FOR PRECISION-BASED TARGET DEVELOPMENT

2:00 Chairperson's Remarks

Andrew Buchanan, PhD, FRSC, Principal Scientist, Biologics Engineering, Oncology, AstraZeneca

2:05 AI, ML, and DL in Molecular Design and Immunoediting Mechanisms and Implications in Individualized Cancer Therapeutics

John A. Catanzaro, PhD, Founder & CEO, Neo7Bioscience, Inc.

Precision and personalized medicine require patient multi-omics datasets to generate molecular editing designs that mitigate and augment progressive changes that favor cancer progression. To achieve high-confidence design selection, molecular immunoediting in cancer mitigation, immunosurveillance, defense, regulation, and editing adaptation depends on functional protein-protein interactions, facilitated cell signal controls, and featured hallmark expressions, which necessitate complex prediction mapping, ranking, and modeling analytics.

2:35 EDGE: State-of-the-Art Artificial Intelligence Driven Platform to Identify T Cell Targets

Ankur Dhanik, PhD, Vice President, Bioinformatics and Data Science, Gritstone Bio

Accurate identification of T cell targets is critical for the development of specific and potent vaccines against cancer or infectious diseases. Gritstone's EDGEis a state-of-the-art AI-driven platform that can identify T cell targets with high accuracy. The platform is powered by the best advancements in AI and rich datasets. We have demonstrated that the targets identified by EDGE elicit immune response in patients.

3:05 Grand Opening Refreshment Break in the Exhibit Hall with Poster Viewing

3:45 CANCELLED Harnessing Spatial Genomics with Machine Learning and AI to Develop Biomarker and Therapeutic Strategies for Immunotherapy in Cancer

Tae Hyun Hwang, PhD, Principal Investigator, Artificial Intelligence & Informatics, Mayo Clinic Labs

4:15 PELEUS NeoRanker: AI Neoantigen Immunogenicity Ranker Trained with Unbiased, Biologically Relevant Data

Andrew Craig, PhD, Vice President, Bioinformatics, Achilles Therapeutics

4:45 KEYNOTE PRESENTATION: AI-Based Target and Antibody Discovery for Cancer Immunotherapeutics

Xiaole Shirley Liu, PhD, CEO, GV20 Therapeutics

GV20 Therapeutics have computationally extracted hundreds of millions of tumor-infiltrating antibody sequences from tumor RNA-seq profiles. Using AI trained on these tumor-infiltrating antibodies, GV20 can *de novo* design antibodies against targets without any known antibody sequences against the targets. This approach not only designs antibodies enriched in functional binders and good developability profiles, but also provides insights on target identification and validation.

5:15 Welcome Reception in the Exhibit Hall with Poster Viewing

6:15 Close of Day

TUESDAY, AUGUST 8

7:30 am Registration and Morning Coffee

ALGORITHMS FOR VALIDATING BIOMARKERS AND PREDICTING PATIENT RESPONSE

8:00 Chairperson's Remarks

Fahad Ahmed, MD, Pathology Department, Wayne State University; Founder, Alghorismus, LLC

8:05 Identification, Quantification, and Validation of New Spatial Signatures Using AI in Cancer Tissues with Multiplex Immunofluorescence

Daniel Jimenez-Sanchez, PhD, Johns Hopkins University

Multiplex immunofluorescence tissue imaging is increasingly being used to identify new spatial signatures able to predict responses to immunotherapy. However, the identification of new signatures typically requires a prior selection of cell types, marker expression levels, and their spatial interactions, which can be challenging as the number of potential signatures quickly increases with the number of markers. Here, we show how AI can identify spatial signatures in an unsupervised fashion.

8:35 Pretreatment Prediction of Non-Responders to PD-1 Axis Inhibitors in Advanced Urothelial Carcinomas Using a Hybrid Multimodal Deep Learning Algorithm

Fahad Ahmed, MD, Pathology Department, Wayne State University; Founder, Alghorismus, LLC

Aim: Develop a machine learning algorithm to predict pretreatment response and non-response in patients with advanced urothelial carcinomas that will receive immunotherapy. Methods: The current analysis includes 4 experiments that include clinical data (including radiological staging), transcriptomics, and genomics (FGFR mutation, TMB status). Results/Conclusion: Our best algorithm was the MLP classifier using high/low cut-off for transcriptomics and genomics and clinical data with the best PPV and NPV; further validation is required.

9:05 Maximizing Biodevelopability with AI-Assisted Generation of Tens of Thousands of High-Affinity Pembrolizumab Variants

Randolph Lopez, PhD, CTO and Co-Founder, A-Alpha-Bio

We utilized AlphaSeq protein-protein interaction (PPI) measurements and machine learning to generate tens of thousands of diverse high-affinity pembrolizumab variants. We generated over one hundred thousand PPI measurements from three design-test cycles, incorporating transfer learning of unrelated antibody:antigen PPI data and state-of-the-art protein language modeling techniques (ESM2). Finally, we validated 20 predicted improved variants from the model and demonstrated significant improvements across multiple biodevelopability metrics.

9:35 Coffee Break in the Exhibit Hall with Poster Viewing

10:05 PANEL DISCUSSION: What's Data Got to Do With It?

Moderator: Fahad Ahmed, MD, Pathology Department, Wayne State University; Founder, Alghorismus, LLC

The complexity of the immune system and the duplicity of cancer, plus the expense of treatments and variable patient responses, make for a perfect data storm. Optimally utilizing and effectively mining these large diverse data sets is daunting. The combined efforts of researchers, clinicians, and data scientists are required. Hear from this panel of experts as they share strategies for advancing AI/ML/DL technology for the development of cancer immunotherapies.

Panelists:

Andrew Buchanan, PhD, FRSC, Principal Scientist, Biologics Engineering, Oncology, AstraZeneca

Ankur Dhanik, PhD, Vice President, Bioinformatics and Data Science, Gritstone Bio

Shameer Khader, PhD, Executive Director, Global Head of Data Science, Data Engineering and Computational Biology, Sanofi

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11:05 Transition to Plenary Session

PLENARY SESSION

11:10 PLENARY KEYNOTE PRESENTATION: Advances in Cellular Immunotherapies

Cokey Nguyen, PhD, CSO and CTO, Atara Biotherapeutics, Inc.

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1:05 pm Organizer's Remarks
Mary Ann Brown, Executive Director, Conferences, Cambridge Healthtech Institute

1:15 PLENARY KEYNOTE PANEL: The Outlook for Biotech Innovation in I-O and Cell Therapy




Moderator: David R. Kaufman, MD, PhD, Partner, Third Rock Ventures LLC
It has been a challenging year for the biotech market, with significant external pressures on 'classical' I-O, bispecifics, and cell therapies. How have these external pressures manifested, and what strategic shifts have preclinical and clinical-stage companies in these spaces had to make? What are the implications for new company creation efforts, and what scientific advances are creating tailwinds despite the challenging market environment? This insider VC panel shares their perspectives.
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Uciane Scarlett, PhD, Principal, MPM Capital

1:45 Close of AI in Cancer Immunotherapy

5:30 Dinner Short Course*
SC2: IN PERSON ONLY: Targeting Solid Tumors and Understanding the TME
*Separate registration is required. See short course pages for details.

TUESDAY, AUGUST 8

10:30 am Registration Open

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NOVEL APPROACHES

1:55 Organizer's Remarks
Nicole Cerniuk, Conference Producer, Cambridge Innovation Institute

2:00 Chairperson's Opening Remarks
Naniye Malli-Cetinbas, PhD, Director of Immuno Oncology & Antibody Drug Conjugates, Biology, Mersana Therapeutics

2:05 KEYNOTE PRESENTATION: Therapeutic Targeting of Myeloid Cells in Cancer
Dmitry I. Gabrilovich, PhD, Chief Scientist, Cancer Immunology, AstraZeneca
Myeloid cells are a major component of the tumor microenvironment and are critically involved in the tumor progression and metastasis. The biology of myeloid cells is largely defined by classical and pathological states of activation, with the latter state named myeloid-derived suppressor cells. The understanding of the biology of myeloid cells and patient subsets where these cells drive therapy resistance is critically important for the success of myeloid cell-targeted therapies.

2:35 Single Domain Antibody-Based Bispecifics Mimicking Cytokine Functionalities
Stefan Zielonka, PhD, Senior Director and Global Head of Antibody Discovery and Protein Engineering, Merck Healthcare KGaA
Cytokines emerged as promising molecules for therapeutic intervention in order to modulate the immune response. However, their often pleiotropic nature combined with their high potency when administered systemically restricts their therapeutic applicability. We have generated cytokine mimetics with tailor-made mode-of-actions based on multifunctional antibody derivatives.

3:05 Selective Activation of CD8+ T Cells by AB821, a CD8-Targeted IL-21, Results in Enhanced Cytotoxicity and Anti-Tumor Activity
Yik Andy Yeung, PhD, CTO, Asher Biotherapeutics
IL-21 is a pleiotropic cytokine that can mediate both immune stimulatory and suppressive effects. Such pleiotropy, along with large pharmacological sink and low bioavailability, limits its clinical utility in oncology. To maximize the therapeutic potential of IL-21, we have developed AB821, a cis-targeted IL-21 that selectively activates CD8+ T cells and exhibits improved bioavailability. Preclinically, AB821 demonstrates promising anti-tumor activity with good tolerability.

3:35 Refreshment Break in the Exhibit Hall with Poster Viewing

SPEED-NETWORKING

3:50 How Many New Contacts Can You make?- IN-PERSON ONLY
Mary Ann Brown, Executive Director, Conferences, Cambridge Healthtech Institute

NOVEL APPROACHES (CONTINUED)

4:10 XMT-2056, a HER2-Targeted STING Agonist Antibody Drug-Conjugate Elicits Potent Anti-Tumor Activity via Multi-Faceted Mechanisms
Naniye Malli-Cetinbas, PhD, Director of Immuno Oncology & Antibody Drug Conjugates, Biology, Mersana Therapeutics
XMT-2056 is a systemically-administered novel Immunosynthen STING agonist ADC that targets a novel HER2 epitope and activates STING pathway in both tumor cells and tumor-resident immune cells, stimulating anti-tumor immune responses in preclinical studies. XMT-2056 exhibited potent anti-tumor activity in multiple tumor models as single-agent and in combination with anti-PD1 and other HER2-targeted therapies. This presentation will focus on the MOA of the anti-tumor activity elicited by XMT-2056.

4:40 Molecular Glues: The Adhesive Connecting Targeted Protein Degradation to the Clinic
Qiongqiong Angela Zhou, PhD, Scientific Program Manager, Content Operations, CAS
Targeted protein degradation and molecular glues show great potential for treating diseases. Here we use data from the CAS Content Collection and the publication landscape to provide insights into these molecules: their advantages, the recent advancement, and drug candidates in the development pipelines. We hope our work provides a comprehensive reference to support the future development of molecular glues in medicine.

5:10 Close of Day

5:30 Dinner Short Course*
SC2: IN PERSON ONLY: Targeting Solid Tumors and Understanding the TME
*Separate registration is required. See short course pages for details.

WEDNESDAY, AUGUST 9

7:30 am Registration and Morning Coffee

BREAKFAST BREAKOUT DISCUSSIONS

8:00 Breakfast Breakout Discussions

Engage in in-depth discussions with industry experts and your peers about the progress, trends, and challenges you face in your research! Breakout discussion groups play an integral role in networking with potential collaborators. They provide an opportunity to share examples from your work, vet ideas with peers, and be part of a group problem-solving endeavor. Grab a cup of coffee and gather with colleagues during the discussion of your choice. Please visit the Breakout Discussion page on the conference website for a complete listing of topics and descriptions.

IN-PERSON ONLY BREAKOUT DISCUSSION: Overcoming the Tumor Microenvironment for Effective Immunotherapy

Kamal D. Puri, PhD, CSO, OncoResponse, Inc.

- What recent developments in targeting TME have influenced the field the most?
- What could tumor associated macrophage targeting therapies achieve in the next 5-7 years?
- What are some of the challenges and unmet needs in biomarker development for myeloid therapies?

IN-PERSON ONLY BREAKOUT DISCUSSION: Role of the Digital Revolution (AI) In Discovery and Technology Development: Opportunities and Challenges

Zohreh Amoozgar, PharmD, PhD, Collaborator and Affiliate, Harvard Medical School

- AI has established its role in diagnostics, and therapy response, what are the opportunities in drug delivery developments?
- Reliability of AI in predicting? How can we prevent a Junk in- junk out the outcome
- Are our current understanding of machine learning advanced enough? How much we are in charge?
- What the ethics in using technology? Are we in control?

UNDERSTANDING THE TARGET AND IMPROVING DELIVERY

8:55 Chairperson's Remarks

Ashish A. Kulkarni, PhD, Assistant Professor, Chemical Engineering, University of Massachusetts, Amherst

9:00 Lipid Nanodiscs Improve STING Agonist Delivery and Immunotherapy by Overcoming Barriers to Tumor Penetration

Eric L. Dane, PhD, Research Scientist, Research Division, Massachusetts Institute of Technology

To develop a novel anti-tumor adjuvant, a STING-activating CDN-prodrug conjugated to a PEGylated lipid was incorporated into lipid nanodiscs (LNDs). When administered intravenously, LND-CDNs outperformed the parent drug and liposomes and induced rejection of established tumors with the formation of immune memory against rechallenge. A range of experimental data demonstrating the unique ability of LND-CDNs to penetrate throughout the tumor bed and promote productive DC activation will be highlighted.

9:30 The Immunotherapeutic Potential of CD200/CD200R Blockade

Christopher L. Moertel, MD, CMO, Research, OX2 Therapeutics LLC

This talk will center around an understudy checkpoint blockade CD200R and a newly discovered and developed activation receptor called the CD200AR-L which OX2 currently is using to treat recurrent glioblastoma patients along with a planned trial for pediatric DIPG.

10:00 Alleviating Resistance to Checkpoint Inhibitor by Reprogramming the Tumor Microenvironment

Zohreh Amoozgar, PharmD, PhD, Collaborator and Affiliate, Harvard Medical School

Numerous IO modalities are developed but their benefit only reaches to >20% of eligible patients. A major source of the lack of efficacy is the tumor microenvironment (TME), which enables resistance to natural antitumor activities and therapies. Normalizing TME by reprogramming pro-tumor immune cells (Regulatory T cells) and enhancing the delivery of reactivated anti-tumor cells are among the modalities that can alleviate resistance and synergize with the standard of care.

10:30 Coffee Break in the Exhibit Hall with Last Chance for Poster Viewing

MODULATING THE TUMOR MICROENVIRONMENT

11:15 Emerging Strategies for Reprogramming Tumor-Associated Macrophages

Ashish A. Kulkarni, PhD, Assistant Professor, Chemical Engineering, University of Massachusetts, Amherst

Tumors are heavily infiltrated with tumor-associated macrophages, facilitating tumor progression and directly and indirectly mounting an immune suppressive effect. I will present a nanotechnology-based approach called supramolecular nanotherapeutics, which can focally modulate the tumor immune contexture towards the immune responsive mode with minimal systemic side effects. Supramolecular nanotherapeutics exert a sustained tumor regression in syngeneic murine breast cancer and melanoma models by efficiently converting immunosuppressive tumor macrophages to effector macrophages.

11:45 Taking Clues from Patients to Target Tumor-Associated Macrophages

Kamal D. Puri, PhD, CSO, OncoResponse, Inc.

A common basis for cancer immunotherapy treatment failure appears to be the suppressive tumor microenvironment (TME). We are investigating the B cell repertoire of immunotherapy responders to identify antibodies that can relieve immunosuppression in the TME. I will present data on OR2805, a clinical-stage anti-CD163 antibody that relieves immunosuppression caused by macrophages; and OR502, an anti-LILRB2 antibody that rescues T cells from macrophage-mediated suppression and induces anti-tumor responses.

12:15 pm Transition to Lunch

12:20 LUNCHEON PRESENTATION LiCellMo: Paving the Way for Metabolic Research and Cell and Gene Therapy

PHCbi

Joanna Bybee, Area Manager, PHC Corporation of North America

In a variety of fields including cancer immunotherapy, stem cell research, commercial cell and gene therapy (CGT) manufacturing process development, investigating and understanding of the metabolic activities of cells is gaining importance. To meet this need in the field, PHC Corporation is developing a continuous metabolic analyzer providing real-time visualization of the metabolic condition of living cells to support new discoveries in these critical life science fields.

12:50 Session Break

OVERCOMING CHALLENGES IN IO

1:30 Chairperson's Remarks

Russell Jenkins, MD, PhD, Faculty Member, Center for Cancer Research, Massachusetts General Hospital

1:35 Selectively Targeting the VISTA Immune Checkpoint with Conditionally-Active Antibodies

Edward van der Horst, PhD, CSO, Sensei Bio

Lack of selectivity has posed a significant challenge to expanding the range of immunotherapy options for patients. Sensei Biotherapeutics is developing conditionally active antibodies that function selectively in the low-pH of the tumor microenvironment to promote anti-tumor activity without on-target off-tumor effects. SNS-101, Sensei's VISTA-blocking antibody, has demonstrated its potential to deliver powerful anti-tumor activity without the negative effects that have thwarted past efforts against this target.

2:05 Optimal Site of Conjugation Modulates ADC Efficacy and Reduces Toxicity for Complex Immuno-Oncology Payloads

Colby Souders, PhD, CSO, BrickBio

Developing effective antibody drug conjugates (ADCs) for solid tumors remains challenging, particularly for potent payloads like pyrrolobenzodiazepines (PBD), due to narrow therapeutic index. We highlight bioconjugation for precise (site-specific), flexible (site-selective), and scalable production of PBD-based ADCs using unnatural amino acid incorporation into the antibody backbone. BrickADCs were selected to shield toxicity of high-potency, hydrophobic payloads while maintaining activity. Up to 3-fold enhanced efficacy was attributed to optimal conjugation sites.

2:35 Targeting TBK1 to Overcome Resistance to Cancer Immunotherapy

Russell Jenkins, MD, PhD, Faculty Member, Center for Cancer Research, Massachusetts General Hospital

Despite the success of immune checkpoint blockade (ICB) in melanoma and other cancers, effective treatment strategies to overcome ICB resistance are lacking. We identified TANK-binding kinase 1 (TBK1) as a candidate immune evasion gene in a pooled genetic screen. Using a suite of genetic and pharmacologic tools across multiple experimental model systems, we confirm a role for TBK1 as an immune evasion gene.

3:05 Conference Wrap-Up

3:45 Close of Summit

2ND ANNUAL

EMERGING CELL-BASED IMMUNOTHERAPIES

Progress in TILs, TCRs and Novel Formats

TUESDAY, AUGUST 8

10:30 am Registration Open

PLENARY SESSION

11:10 PLENARY KEYNOTE PRESENTATION: Advances in Cellular Immunotherapies

Cokey Nguyen, PhD, CSO and CTO, Atara Biotherapeutics, Inc.

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Moderator: David R. Kaufman, MD, PhD, Partner, Third Rock Ventures LLC

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ADVANCES IN TILs – A NEW ERA IN IMMUNO ONCOLOGY?

1:55 Organizer's Remarks

Mary Ann Brown, Executive Director, Conferences, Cambridge Healthtech Institute

2:00 Chairperson's Opening Remarks

Michelle Simpson-Abelson, PhD, Executive Director, Iovance Biotherapeutics

2:05 Progress with TILs in Lung Cancer

Adam Schoenfeld, MD, Medical Oncologist, Memorial Sloan Kettering Cancer Center

Emerging data on adoptive cell therapy with autologous tumor-infiltrating lymphocytes (TIL) in the treatment of lung cancer will be presented.

2:35 KEYNOTE PRESENTATION: Progress on TILs

Allison Betof Warner, MD, PhD, Director, Melanoma Medical Oncology and Solid Tumor Cell Therapy, Stanford University

Cellular therapy, particularly with CAR T cell technology, has dramatically improved outcomes for many patients with hematologic malignancies, but treatment of solid tumors has been more challenging. Advances in adoptive cell therapy with tumor-infiltrating lymphocytes (TIL) are now bringing the promise of cellular therapy to solid tumor histologies. This presentation will highlight advances in TIL technology, data on clinical efficacy, and areas for future development.

3:05 Next Generation TIL

Michelle Simpson-Abelson, PhD, Executive Director, Iovance Biotherapeutics

Next-generation TIL therapies aim to overcome suppressive barriers encountered by TIL to broaden and deepen responses in difficult to treat solid tumors, particularly in epithelial cancers. New approaches aim to enrich for less differentiated and more stem-like TIL, increase the frequency of tumor reactive cells, downregulate expression of inhibitory receptors, and express tethered cytokines to increase function and persistence.

3:35 Refreshment Break in the Exhibit Hall with Poster Viewing

SPEED-NETWORKING

3:50 How Many New Contacts Can You make?- IN-PERSON ONLY

Mary Ann Brown, Executive Director, Conferences, Cambridge Healthtech Institute

4:10 Are Tumor-Reactive TIL Exhausted or Can They Be Rescued for Clinical Benefit?

Andrew Weinberg, PhD, Chief, Laboratory of Basic Immunology, Providence Health & Services; CSO, AgonOx

Co-expression of CD39 and CD103 highly enrich for tumor-reactive CD8 T cells from all solid malignancies tested thus far (at least 10 tumor types). These cells also express some exhaustion markers but we can rescue their proliferative and functional capacities. Once rescued and expanded, they can kill autologous tumors *in vitro* and *in vivo* and we have FDA approval for a Phase I ACT clinical trial using these cells.

4:40 Armoring Tumor-Infiltrating Lymphocytes (TIL) with Controllable Immune Mediators for Increased Persistence and Potency without Adjuvant IL-2

Michelle Ols, PhD, Senior Director, Head, Cell Therapy, Obsidian Therapeutics, Inc.

To address limitations in current TIL therapies, we are building an engineered TIL pipeline that incorporates our cytoDRiVE platform for pharmacologically-controlled protein expression. The lead candidate in our cytoTIL15 platform (OBX-115) employs controllable membrane-bound IL-15 (mbIL15) that drives IL-2 independent TIL persistence and superior efficacy in PDx models, creating an IL-2 free product. OBX-115 is being evaluated in the clinic for melanoma (NCT05470283) and preclinically for other indications.

5:10 Close of Day

5:30 Dinner Short Course*

SC2: IN PERSON ONLY: Targeting Solid Tumors and Understanding the TME

*Separate registration is required. See short course pages for details.

WEDNESDAY, AUGUST 9

7:30 am Registration and Morning Coffee

BREAKFAST BREAKOUT DISCUSSIONS

8:00 Breakfast Breakout Discussions

Engage in in-depth discussions with industry experts and your peers about the progress, trends, and challenges you face in your research! Breakout discussion groups play an integral role in networking with potential collaborators. They provide an opportunity to share examples from your work, vet ideas with peers, and be part of a group problem-solving endeavor. Grab a cup of coffee and gather with colleagues during the discussion of your choice. Please visit the Breakout Discussion page on the conference website for a complete listing of topics and descriptions.

BREAKOUT DISCUSSION: IN PERSON ONLY: The Role of Emerging Cell Therapies in IO
Bruce K. Walcheck, PhD, Professor, Veterinary & Biomedical Sciences, University of Minnesota Twin Cities

EMERGING CELL-BASED THERAPIES

8:55 Chairperson's Opening Remarks
Frank Borriello, PhD, Scientific Founder & CEO, Alloplex Biotherapeutics, Inc.

9:00 eTILs – Revolutionizing the Treatment of Solid Tumors
Micah J. Benson, PhD, CSO, KSQ Therapeutics, Inc.
eTILs are gene-edited Tumor Infiltrating Lymphocyte (TIL) cell therapy products that have demonstrated transformational tumor-killing abilities against solid tumors. We have developed eTIL products KSQ-001 and KSQ-004 by applying our CRISPRomics platform and CRISPR2 technology to T cells to discover the top single and multiplexed gene edits to inactivate with CRISPR/Cas9 with the goal of maximizing the ability of TIL to destroy solid tumors and drive durable clinical responses.

9:30 SUPLEXA Platform for Reprogramming of Immune Cells for Treatment of Cancer
Frank Borriello, PhD, Scientific Founder & CEO, Alloplex Biotherapeutics, Inc.
Alloplex Biotherapeutics is pioneering an adoptive cell therapy that involves the *in vitro* training of peripheral blood mononuclear cells (PBMC) to differentiate, proliferate, and acquire tumoricidal properties against a broad range of tumor types. We have advanced this program into Phase I against multiple types of metastatic cancers. Early clinical results show SUPLEXA are safe, have activity in multiple solid tumor types, and induced pharmacodynamic changes in patient PBMC.

10:00 Engineering Fit T Cells to Overcome the Tumor Microenvironment Challenges
Elena Geretti, PhD, Director, Immunotherapy, ElevateBio
Despite unprecedented successes in hematologic malignancies, T cell therapies are still facing significant challenges for the treatment of solid tumors. T cell exhaustion, lack of persistence, and an immunosuppressive tumor microenvironment are among the causes for the poor success thus far. ElevateBio is leveraging synthetic biology and multiplexed base-editing approaches to target epigenetic and metabolic pathways to engineer TCR T cells with improved fitness and functions to overcome these challenges.

10:30 Coffee Break in the Exhibit Hall with Last Chance for Poster Viewing

TARGETING SOLID TUMORS

11:15 NK Cell Engineering for Enhanced Targeting of Advanced Solid Tumors
Rizwan Romee, PhD, Associate Professor Medicine & Director, Haploidentical Donor Transplant Program, Dana-Farber Cancer Institute
We described human memory-like NK cells with enhanced anti-tumor activity. In my talk, I will describe key properties of the memory-like NK cells; summarize the preclinical development of the CAR-armed memory-like NK cells in ovarian and pancreatic cancer, and describe early clinical results and correlative labs from our ongoing clinical trial of cytokine-engineered allogeneic NK cells in combination with CTL4 blockade in patients with advanced head and neck

11:45 T Cell Receptor (TCR)-Based Cell Therapy for Patients with Solid Tumors
Gang Zeng, PhD, CEO, T-Cure
T-Cure Bioscience is a clinical-stage TCR T company focusing on solid tumors. Our lead assets are derived from dominant TCR of extraordinary responders, i.e., 800 TCR T targeting HERV-E for stage IV non-resectable renal cell carcinoma patients who fail standard of care, and 820 TCR T targeting KK-LC-1-expressing gastric, lung, cervical, and TNBC. T-Cure has a proprietary iSORT platform that discovers "all-natural and high-affinity" TCR against customer tumor antigen/HLA combo.

12:15 pm Transition to Lunch

12:20 Enjoy Lunch on Your Own

12:50 Session Break

EMERGING CELL-BASED THERAPIES

1:30 Chairperson's Remarks
Bruce K. Walcheck, PhD, Professor, Veterinary & Biomedical Sciences, University of Minnesota Twin Cities

1:35 Engineered Myeloid Cells for Solid Tumor Therapy
Yuxiao Wang, PhD, Co-Founder & Senior Director, Discovery Research, Myeloid Therapeutics
The immunosuppressive tumor microenvironment (TME) of solid tumors is a barrier to cellular and immunotherapies. Myeloid cell-derived tumor associated macrophages (TAMs) accumulate in tumors but frequently are co-opted by tumor cells into supporting tumor growth. We developed the Activate, Target, Attack & Kill (ATAK) myeloid cell platform to engineer myeloid cells to recognize and phagocytize tumor cells as well as orchestrate a broad anti-tumor immune response against solid tumors.

2:05 Producing and Testing Multiantigen-Targeted Cytotoxic CD4+ T Cells (CD4 CTLs) for Cancer Therapy
Baochun Zhang, PhD, Assistant Professor, Medical Oncology, Dana Farber Cancer Institute
Recent progress in understanding tumor immunity in animal models and patients with cancer has highlighted the potential of cytotoxic CD4+ T cells (CD4 CTLs) for cancer immunotherapy. Leveraging our knowledge of CD4 CTL differentiation, we developed novel approaches to producing multiantigen-targeted CD4 CTLs for immunotherapy for B cell malignancies as well as other cancers. I will present and discuss results from preclinical and translational studies.

2:35 Advances in NK Cells
Bruce K. Walcheck, PhD, Professor, Veterinary & Biomedical Sciences, University of Minnesota Twin Cities
Allogeneic and autologous natural killer (NK) cell therapies are being actively investigated for various malignancies. Strategies to augment NK cell function and survival in patients include IL-15 stimulation. Such stimuli, however, activate ADAM17 in NK cells, which functions as a negative feedback mechanism to diminish their function. We describe a function-blocking ADAM17 mAb that greatly augments NK cell proliferation by IL-15 and the underlying mechanism, which includes CD137.

3:05 The TAC T Cell Technology: A Promising Adoptive Cell Therapy Platform to Tackle Solid Tumors
Deyaa A Adib, CMO, Triumvira Immunologics USA, Inc.
Triumvira Immunologics, Inc., ("Triumvira"), is a clinical-stage company developing unique, non-gene edited, first-in-class targeted autologous and allogeneic T cell therapeutics that co-opt the natural biology of T cells to treat patients with solid tumors. The company's proprietary T cell Antigen Coupler (TAC) technology is a robust and versatile platform that activates natural T cell functions differently from cell therapies such as CAR T and engineered T cell receptor (TCR) therapies.

3:35 Conference Wrap-Up

3:45 Close of Summit

8TH ANNUAL

PRECLINICAL AND TRANSLATIONAL IMMUNO-ONCOLOGY

Predictive Preclinical Models and Translational Strategies for Cancer Immunotherapy

TUESDAY, AUGUST 8

10:30 am Registration Open

PLENARY SESSION

11:10 PLENARY KEYNOTE PRESENTATION: Advances in Cellular Immunotherapies

Cokey Nguyen, PhD, CSO and CTO, Atara Biotherapeutics, Inc.

Allogeneic EBV T cell therapies: ushering in the next wave of innovation opportunities and challenges for different cell therapy platforms and approaches. Our journey behind the EU approval of the industry's first-ever allogeneic T cell therapy and how this experience is aiding us to design the next generation of CAR T to overcome limitations of therapies today.

11:45 Enjoy Lunch on Your Own

1:05 pm Organizer's Remarks

Mary Ann Brown, Executive Director, Conferences, Cambridge Healthtech Institute

1:15 PLENARY KEYNOTE PANEL: The Outlook for Biotech Innovation in I-O and Cell Therapy




Moderator: David R. Kaufman, MD, PhD, Partner, Third Rock Ventures LLC

It has been a challenging year for the biotech market, with significant external pressures on 'classical' I-O, bispecifics, and cell therapies. How have these external pressures manifested, and what strategic shifts have preclinical and clinical-stage companies in these spaces had to make? What are the implications for new company creation efforts, and what scientific advances are creating tailwinds despite the challenging market environment? This insider VC panel shares their perspectives.

Panelists:

Anthony J. Coyle, PhD, President, R&D, Repertoire Immune Medicines

Mohammed Asmal, MD, PhD, Senior Vice President, Head of Clinical, Prime Medicine, Inc.

Uciane Scarlett, PhD, Principal, MPM Capital

PRECLINICAL STUDIES AND TRANSLATIONAL STRATEGIES

1:55 Organizer's Remarks

Virginia Maxwell, Senior Associate Producer, Cambridge Healthtech Institute

2:00 Chairperson's Remarks

Johanna Kaufmann, PhD, Executive Vice President, Oncology, Codagenix

2:05 Combined Viroimmunotherapy with the Codon-Modified Influenza Virus CodaLytic Broadens the Utility of Checkpoint Inhibition

Johanna Kaufmann, PhD, Executive Vice President, Oncology, Codagenix

In this presentation, we will describe the design and mechansims of action of CodaLytic, a codon-modified influenza-based virotherapeutic. With a focus on immunotherapy-resistant preclinical models of breast cancer including orthotopic murine models and primary human tumoroids, we will highlight the combination benefit of CodaLytic with immune checkpoint inhibition. Together, this data provides reasons to believe for clinical translation of CodaLytic as a component of breast cancer immunotherapeutic regimens.

2:35 Treating Solid Tumors with ARTEMIS T Cells Engineered with Antibody T Cell Receptor (AbTCR)

Hongbing Zhang, PhD, Vice President, Drug Discovery, Eureka Therapeutics, Inc.

Eureka is developing ARTEMIS T cell therapy, a next-generation T cell immunotherapy to treat solid tumors. Leveraging Eureka's proprietary ARTEMIS cell receptor platform and E-ALPHA antibody discovery platform, our ARTEMIS T cells have demonstrated better safety profile, improved T cell infiltration, and persistence in proof-of-concept and preclinical studies. The company has two ongoing clinical programs: ECT204, targeting Glypican-3 (GPC3), and ET140203, targeting Alpha-Fetoprotein (AFP) for the treatment of liver cancers.

3:05 Novel Therapeutic Approaches Targeting Immunosuppressive Cells in the Tumor Microenvironment to Overcome Resistance to PD-1 Inhibition and Restore Anti-Tumor Immune Responses

Monica Gostissa, PhD, Former Vice President, Preclinical Sciences, Jounce Therapeutics, Inc.

The tumor microenvironment (TME) is enriched in immunosuppressive cells, such as myeloid-derived suppressor cells and T regulatory cells, which mediate resistance to currently available immunotherapies. Novel approaches to deplete or reprogram these cells, with the goal to restore anti-tumor immune responses, will be discussed. Particular focus will be given to *in vivo* and *ex vivo* models to allow preclinical validation and ensure clinical translatability.

3:35 Refreshment Break in the Exhibit Hall with Poster Viewing

SPEED-NETWORKING

3:50 How Many New Contacts Can You make?- IN-PERSON ONLY

Mary Ann Brown, Executive Director, Conferences, Cambridge Healthtech Institute

PRECLINICAL STUDIES AND TRANSLATIONAL STRATEGIES (CONT.)

4:10 Rapcaptagene Autoleucel, a Transformation in CAR T Manufacturing Leads to Better Efficacy

Louise M. Treanor, PhD, Associate Director, Novartis Institutes for BioMedical Research

4:40 KEYNOTE PRESENTATION: New Approaches to Targeting KRAS

Benjamin G. Neel, MD, PhD, Professor, Medicine, NYU Grossman School of Medicine; Director, Laura and Isaac Perlmutter Cancer Center, NYU Langone Health

KRAS-driven cancers remain a major unmet medical need. The development of specific KRAS inhibitors, as well as inhibitors of upstream regulators (e.g., RTKs, SHP2, SOS) and downstream signaling components have been important advances, yet responses are not durable. I will discuss reasons for therapy failure and how to engender an anti-tumor immune response for improved therapeutic efficacy.

5:10 Close of Day

5:30 Dinner Short Course*

SC2: IN PERSON ONLY: Targeting Solid Tumors and Understanding the TME

*Separate registration is required. See short course pages for details.

WEDNESDAY, AUGUST 9

7:30 am Registration and Morning Coffee

BREAKFAST BREAKOUT DISCUSSIONS

8:00 Breakfast Breakout Discussions

Engage in in-depth discussions with industry experts and your peers about the progress, trends, and challenges you face in your research! Breakout discussion groups play an integral role in networking with potential collaborators. They provide an opportunity to share examples from your work, vet ideas with peers, and be part of a group problem-solving endeavor. Grab a cup of coffee and gather with colleagues during the discussion of your choice. Please visit the Breakout Discussion page on the conference website for a complete listing of topics and descriptions.

IN-PERSON ONLY BREAKOUT: Inducing Effective Tumor Antigen-Specific Immune Responses – The Resurgence of Cancer Vaccines

Johanna Kaufmann, PhD, Executive Vice President, Oncology, Codagenix

- Commonalities and differences between cancer vaccine modalities, ranging from personalized neoantigen vaccines using mRNA to cell-based vaccines to *in situ* vaccination using pathogens
- Scientific and clinical development lessons from prior waves of cancer vaccine clinical trials that enable the resurgence of the approach
- Future directions for modulation of antigen specificity and quality of T cell responses to cancer-specific antigens

IN-PERSON ONLY BREAKOUT: Selection of Mouse Models for Immuno-Oncology Studies

Michael Brehm, PhD, Associate Professor, Diabetes Center of Excellence, Program in Molecular Medicine, University of Massachusetts Chan Medical School

- Discuss pros and cons of available models, including syngeneic and humanized
- Translation of results from mouse models to the clinic
- Discuss the future of modeling immunotherapy in mice

GAMMA DELTA T CELL THERAPIES

8:55 Chairperson's Remarks

Xiaowei Xu, MD, PhD, Professor, Pathology and Dermatology, University of Pennsylvania

9:00 Gamma Delta T Cell-Based Therapies for Solid Tumors

Xiaowei Xu, MD, PhD, Professor, Pathology and Dermatology, University of Pennsylvania

γδ cells are distinctively different from aßT cells in their TCR gene usage, which allows them to be used in an allogeneic setting. We discover T cell levels in PBMC predict their expansion capacity and cellular functions. Our Vd2 Index Score may be used for donor selection. Costimulation of TCR γδ and TLR7/8 is an effective approach for γδT cell expansion by enhancing PI3K-Akt-mTOR signaling pathway and regulating APC function.

9:30 Off-the-Shelf Solid Tumor CAR T Therapies

Jeff Liter, CEO & Founder, Luminary Therapeutics

Talk will discuss a novel approach to developing a highly functional allogeneic cell chassis which accommodates dual targeting CAR T cells with optimal co-stimulation and metabolic fitness to enhance anti-tumor activity and equally prevents antigen escape in solid tumors.

MOUSE MODELS TO EVALUATE CANCER IMMUNOTHERAPIES

10:00 Preclinical Evaluation of Therapeutic Combinations to Enhance Efficacy of T Cell Engagers for Solid Tumors

Anupurna Kaul, PhD, Senior Scientist, Amgen, Inc.

T cell engagers (TCEs) represent a promising off-the-shelf treatment option for multiple tumor types; however, a large gap exists in our understanding of factors governing response or resistance to TCEs. Using preclinical immunocompetent mouse tumor models, we have elucidated immunotherapy combinations that can synergize with TCEs to enhance response in poorly T cell-infiltrated, checkpoint-refractory tumor types.

10:30 Coffee Break in the Exhibit Hall with Last Chance for Poster Viewing

11:15 Humanized Mouse Models with Enhanced Innate Immunity

Michael Brehm, PhD, Associate Professor, Diabetes Center of Excellence, Program in Molecular Medicine, University of Massachusetts Chan Medical School

This presentation will provide an overview of the advantages and limitations of currently available humanized mouse models. We will describe current advancements in humanized models that enhance the development of innate immunity. We will discuss factors to be considered for the design of experiments with humanized mice to study tumor-immune cell interactions and to test therapeutics.

11:45 PD-1 Blockade Unleashes the Pathogenicity of Skin-Infiltrating CD8 T Cells: A Potential Mechanism of Cutaneous irAEs

Martina Damo, PhD, Postdoctoral Associate, Department of Immunobiology, Yale School of Medicine

The pathogenic mechanisms of immune-related Adverse Events (irAEs) occurring in checkpoint inhibitor (CPI)-treated cancer patients are poorly understood. Clinical evidence suggests the hypothesis that many irAEs, including cutaneous irAEs, are caused by CPI-dependent activation of self-reactive T cells specific for tissue antigens. We developed a new engineered mouse model to test this hypothesis and understand how CPIs cause cutaneous immunopathology with features of lichenoid irAEs.

12:15 pm Transition to Lunch

12:20 LUNCHEON PRESENTATION: Liposomal Formulations in Cancer Immunotherapy and Challenges in IND-enabling Preclinical Studies and CMC

FUJIFILM
Value from Innovation

Naoki Yamada, PhD, Director of Strategy and Operation, FUJIFILM Pharmaceuticals U.S.A., Inc.

The number of clinical trials of chemotherapeutic agents in combination with Immune Checkpoint Inhibitors (ICI) is growing to improve anti-tumor effects. We will introduce preclinical results that liposome formulations can boost the effect of chemotherapy synergistically with ICI by stimulating cancer immunity. In addition, challenges and solutions in early-stage development from bench top to the First-in-Human trial of liposome formulations: species difference and CMC, will be presented and discussed.

12:50 Session Break

TECHNOLOGIES TO TRANSITION FROM ANIMAL TESTING

1:30 Chairperson's Remarks

Floriana Cremasco, PhD, Senior Scientist, Roche

1:35 Preclinical *in vitro* Models for Cancer Immunotherapy Drugs Mode of Action

Floriana Cremasco, PhD, Senior Scientist, Roche

In order to overcome the intrinsic limitations of 2D *in vitro* and *in vivo* preclinical experimental models, currently available for Cancer Immunotherapy (CIT) drug development, we establish two distinct, fully human, imaging approaches for the dynamic visualization and characterization of interactions between cancer cells, immune cells, and stromal cells, and for the mid-throughput 3D *in vitro* screening of immune cell trafficking and infiltration to tumors in response to CIT-drugs.

2:05 Recapitulating the Dynamics of the Tumor Microenvironment for *ex vivo* Evaluation of Immune Checkpoint Inhibitors

Jeffrey Borenstein, PhD, Laboratory Fellow, Draper Laboratory

Immune checkpoint inhibitors are a promising approach but suffer from variable response rates across patients and types of cancer, and current preclinical models are often not predictive of human responses. We report a microfluidic model that recapitulates the dynamic tumor microenvironment for evaluation of immune checkpoint inhibitor efficacy. A novel 3D-printed platform provides customizable and multiplexed device configurations that simplify operation and permit ease of integration into pharmaceutical workflows.

2:35 Cancer-on-a-Chip for CAR T Cell Therapy Modeling and Screening

Weiqiang Chen, PhD, Associate Professor, Mechanical and Biomedical Engineering, New York University

CAR T cell is a new immunotherapy for B cell acute lymphoblastic leukemia (B-ALL), yet, patient responses to this new therapy are variable, largely limiting its clinical benefit. We herein developed a microfluidics-based human Cancer-on-a-Chip technology for *in vitro* modeling/screening of CAR T cell therapy in a biomimetic leukemia bone marrow microenvironment. Such an *in vitro* immuno-oncology model would contribute significantly to developing novel personalized CAR T cell therapies.

3:05 Engineered Microphysiological Systems

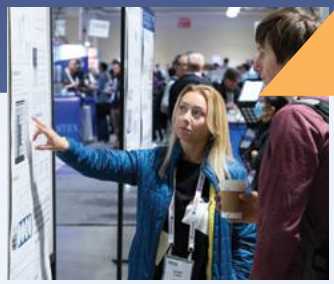
Marco Campisi, PhD, Research Fellow, Dana Farber Cancer Institute

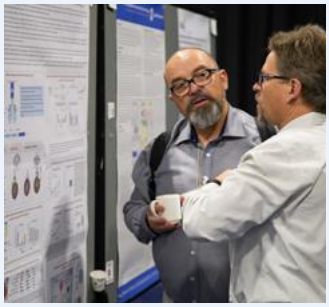
Testing next-generation immune therapies requires more sophisticated *ex vivo* models. We developed a 3-dimensional microphysiological TME model using microfluidic technology, comprising cell line tumor spheroids and vascular models embedded in ECM-like hydrogels, to perform preclinical studies on cell therapies.

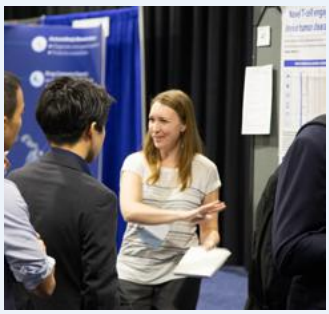
3:35 Conference Wrap-Up

3:45 Close of Summit

Immuno-Oncology SUMMIT BOSTON 2023







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AUGUST 7-9, 2023
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