SASS/2024
Strategic Advances in Sarcoma Science
Natcher Conference Center – NCI

Sept 16-18, 2024

"Strategic Advances in Sarcoma Science" (SASS) is an annual sarcoma conference at the NIH campus (Bethesda, MD) on Sept 16-18, 2024. SASS2024 is co-sponsored by the Center for Cancer Research, NCI.

SASS2024 has eight main sessions on basic science and four breakouts on translational/clinical challenges. Main session chairs provide a 5 minute perspective after the speakers finish, e.g. on challenges/opportunities in the field or suggestions re: key discussion points.

SASS2024 aims for a fun and interactive workshop-like experience. Differentiating features of the conference include emphasis on continuity and deliverables. The SASS2024 program committee is raising funds to defray travel/lodging expenses for early career participants, conference expenses, and pilot projects in the breakout groups. "Early-career" includes students, research assistants, interns/residents, lab post-docs, clinical fellows, and faculty in the first 5 years of initial appointment. We are so grateful to our SASS2024 sponsors for making this possible!

SASS2024 SCIENCE SESSIONS
Genomic Integrity: Telomeres in the spotlight
Bioinformatics: Challenges and opportunities
Resistance & Persistence
Dialing up therapeutic selectivity: Biologic insights
Immune biology
Roadblocks to metastasis
Non-immune microenvironment
TRICS@SASS

SASS2024 BREAKOUT GROUPS
Complex (high-CIN) Sarcomas
Epigenetics
Improving T Cell Engineering Strategies for Sarcoma
Models

SASS2024 Organizers:
Jonathan Fletcher (DF/HCC); Sam Singer (MSKCC); Brigitte Widemann (NCI)

SASS2024 Program Committee:
SARC Discovery/Translation committee (www.tinyurl.com/SARC-DTC)

September 15
SASS-y meeting: Bethesdan Hotel – ~6 hours + dinner (early-career investigators)

September 16

8:30-9:00 Light Breakfast

9:00 SASS2024 Introduction:
Main session emphasis is mechanistic sarcoma science but make talks accessible to a diverse audience.

9:05–10:45 Science Session #1: Genomic Integrity – Telomeres in the Spotlight
Chair: Yves Pommier (NCI)
1a. Patrick Reynolds (Texas Tech) – telomere maintenance mechanisms and pediatric solid tumors
1b. Priya Chudasama (DKFZ/NCT, Heidelberg) – genomics/transcriptomics of activated TMM in complex sarcomas
1c. Frederic Chibon (Inserm - Toulouse) – TMM activation in myoblast-derived models
1d. Yves Pommier (NCI) – new twists for TOP3 and genomic instability
Chair – *Summation/perspective/challenges* (5 min)
Discussion: ~20-25 min

10:45–11:00 BREAK

11:00–11:45 Panel Session #1: working with CTEP: NCTN & ETCTN
Chair: TBD – *Introduction*: 5 min
Panelists: Steven Gore + Nita Seibel (CTEP), Alice Chen (NCI), Scott Schuetze (U Michigan), Candace Haddox (DF/HCC: early-career academia)

11:45–13:00 Breakout session #1 (box lunches): summarize pre-meetings; short "prompt" presentations re: key mechanisms, opportunities, and roadblocks. Discussion.

13:15–14:15 Poster session #1 (Odd # posters)

14:15–14:45 Proffered Posters (3 posters + 15 minute discussion)
Chairs: Rebecca Gladdy, Lee Helman, Angela Hirbe, Robert Maki

14:45–16:15 Science session #2: Bioinformatics – Challenges and opportunities
Chair: Benjamin Haibe-Kains (U Toronto)
2a. Eytan Ruppin (NCI) – precision oncology from the good ol' pathology slides
2b. Jovana Pavisic (MSKCC) – targeting master regulator dependencies in coexisting osteosarcoma cell states
2c. Li-Xuan Qin (MSKCC) – cancer transcriptomics: challenges and opportunities in data harmonization
2d. Benjamin Haibe-Kains – maximizing insights when intersecting big data sets
Chair – *Summation/perspective/challenges* (5 min)
Discussion: ~25 min

16:15–16:30 BREAK

16:30–18:00 Science session #3: Resistance & Persistence
Chair: Sebastian Bauer (Essen)
3a. Andrew Koff (MSKCC) – understanding DDLPS CDK4 inhibitor resistance by mapping the geroconversion regulatory landscape
3b. Matthew Steensma (Van Andel Institute) – p53 modulates kinase inhibitor resistance in NF1-related MPNST
3c. Patience Odeniyide (Johns Hopkins) – RAS-targeted therapies for rhabdomyosarcoma
3d. Jonathan Fletcher (DF/HCC) – GIST gets an assist: RTKs beyond KIT and PDGFRA
Chair – *Summation/perspective/challenges* (5 min)
Discussion: ~20 min

18:00–20:00 Dinner: Buffet at Natcher (mingling/networking)

September 17

8:00-8:30 Light Breakfast

8:30–10:15 Science session #4: Dialing up therapeutic selectivity – Biologic insights
Chair: Brigitte Widemann (NCI)
4a. Poul Sorensen (UBC) – scratching the surface(ome) for targetable vulnerabilities in childhood sarcomas
4b. Richard Gorlick (MDACC) – ADC challenges and opportunities
4c. Brian van Tine (Wash U) – selectivity by targeting specialized biology
4d. Patrick Grohar (U Michigan) – improving the activity and selectivity of combination therapies for Ewing sarcoma
Chair – *Summation/perspective/challenges* (5-10 min)
Discussion: ~20-25 min

10:15–11:15 Panel session #2: working with Industry and the FDA
Chair: Suzanne George (DF/HCC) – *Introduction*: 5 min
Panelists: Martha Donoghue (FDA), Leslie Doros (FDA), Bill Tap (MSKCC), Dave Kerstein (IDRx), Mac Tichenor (OSI & QuadW), Denise Reinke (U Michigan)

11:15–11:30 Break

11:30–12:30 Breakout session #2 (box lunches): do further work, define clinical endpoints, prepare readbacks

12:30–13:30 Poster session #2 (Even # posters)

13:30–14:00 Proffered Posters (3 posters + 15 minute discussion)
Chairs: Elizabeth Demicco, Marc Ladanyi, Elizabeth Lawlor, Andrew Wagner

14:00–15:30 Science session #5: Immune considerations
Chair: Seth Pollack (Northwestern)
5a. Everett Moding (Stanford) – sarcoma ecosystems predict immunotherapy response
5b. Nai-Kong Cheung (MSKCC) – bispecifics (and/or radioimmunotargeting) in pediatric sarcoma
5c. Ronald DeMatteo (Penn) – where is the ImmunoloGIST?
5d. Seth Pollack – making cellular therapy work better in sarcoma
Chair – *Summation/perspective/challenges* (5 min)
Discussion: ~20-25 min

15:30–15:45 BREAK

15:45–17:00 Science session #6: Roadblocks to metastasis
Chair: Keila Torres (MDACC)
6a. Marta Roman (UCSF) – Modeling metastasis inhibition in osteosarcoma
6b. Heide Ford (U Colorado) – SIX1: the Jekyll and Hyde of sarcoma metastasis
6c. Rebecca Dodd (U Iowa) – Mechanisms of MPNST metastasis
Chair – *Summation/perspective/challenges* (5 min)
Discussion: ~20-25 min

18:30-21:30 Dinner: Rock Creek Mansion, Bethesda: mingle for 1 hour, then sit-down dinner with presentations/discussion

September 18

8:00-8:30 Light Breakfast

8:30–9:45 Science session #7: Non-immune microenvironment
Chair: Troy McEachron (NCI)
7a. Elizabeth Lawlor (Seattle Children's and U Washington) – Ewing sarcoma cell plasticity creates CAF-like states that remodel the TME
7b. Jlenia Guarnerio (Cedars-Sinai and UCLA) – Metabolic targeting of sarcoma associated fibroblasts: Therapeutic implications
7c. Alice Browne (NCI) – Extracellular matrix remodeling in sarcoma – challenges and therapeutic opportunities
Chair – *Summation/perspective/challenges* (5 min)
Discussion: ~20-25 min

9:45–11:15 Science session #8: TRICS@SASS
Chair: Kevin Jones (Huntsman)
8a. Julien Vibert (Gustave Roussy) – sarcoma specific transcripts from genomically-silent regions
8b. Ryan Roberts (Nationwide/Ohio) – osteosarcoma subpopulations cooperate to colonize lung tissue
8c. Mark Hatley (St Jude) – finding ARMS in the wrong places: endothelial origin for alveolar fusion-positive rhabdomyosarcoma
8d. David Langenau (Harvard) – MYOD1L122R induces chemotx-resistance and cancer stem cell pathways in aggressive rhabdomyosarcoma
Chair – *Summation/perspective/challenges* (5 min)
Discussion: ~20-25 min

11:15–11:30 Break (pick up evaluation forms)

11:30–12:30 Breakout session #3a: Breakout 1 & 2 readbacks and discussions
(10 min summaries + 15 min discussion per breakout)

12:30–1:30 Breakout session #3b (box lunches): Breakout 3 & 4 readbacks and discussions

1:30–2:00 Breakout session #3c: SASS-y readback and discussion

2:00-2:15 Conclusions and next steps
- conference size, structure, themes, and duration. What should be changed?
- deliverables
- acknowledgements
- feedback is crucial (please drop off evaluation forms before leaving)

SASS2024 Breakout Groups

The SASS breakout groups meld biologic and therapeutics/clinical considerations. Additional meetings are held before/after SASS to accomplish the breakout deliverables. *The deliverables summarized below are provisional: they'll likely morph before/during SASS2024.*

1. Complex (high-CIN) Sarcomas: Liz Demicco (U Toronto), Rebecca Gladdy (U Toronto), Sam Singer (MSKCC), Mitch Achee (NLMSF). Early-career co-leads: Josephine Dermawan (Cleveland Clinic), David Shulman (DF/HCC). Coordinator: Alexa Eaton

This multidisciplinary group defines biologic relationships and emerging therapeutic themes in sarcomas characterized by high levels of chromosomal complexity (osteosarcoma, leiomyosarcoma, undifferentiated pleomorphic sarcoma, myxofibrosarcoma, and pleomorphic liposarcoma).

Deliverable: Complex Sarcoma state-of-the-science review. A schematic draft will be prepared prior to the breakout meeting and finalized after the SASS2024 conference.

2. Epigenetics: Ping Chi (MSKCC), Kevin Jones (Huntsman Cancer Center). Early-career co-leads: Benjamin Nacev (U Pittsburgh), Matt Hemming (U Mass), Jay Sarthy (Seattle Children's). Coordinator: Emily Ma

This group will evolve last year's epigenetics main sessions into an actionable format built around collaboration. The SASS cohort's expertise in the epigenetics space will be applied to a discussion on how to best leverage evolving technologies for epigenetic profiling and emerging epigenetic-targeting small molecules (including those available through CTEP). The breakout group will discuss and develop best practices for **one** of the following: a) epigenetic profiling in sarcoma clinical samples and clinical challenges of developing useful profiles/biomarkers; b) approaches for pre-clinical evaluation of epigenetic targets; and c) principles for epigenetic drug screening and monitoring pharmacodynamic biomarkers. This session will foster collaboration between modelers, epigenetics experts, clinical trialists, and bioinformaticians. The group will produce a white paper outlining considerations and insights into these important topics as this field continues to develop.

3. Improving T Cell Engineering Strategies for Sarcoma: Ron DeMatteo (Penn), Seth Pollack (Northwestern). Early-career co-leads: David Milewski (NCI), Jacqueline Oliva Ramírez (MDACC), Nicolas Llosa (Johns Hopkins). Coordinator: Omar Roman

This breakout defines opportunities and challenges in T cell engineering for sarcoma. We will discuss strategies for improved target selection, functionality, and production as strategies to improve conditioning and cell delivery.

Deliverable: TBD

4. Models: Rebecca Dodd (U Iowa), David Langenau (DF/HCC), Daniel Regan (Colorado State), Agnieszka Wozniak (Leuven), Jonathan Fletcher (DF/HCC). Early-career co-leads: Janai Carr-Ascher (UC Davis), Roland Imle (Heidelberg), Thomas Muehlenberg (Essen). Coordinators: Erika Kaschak & Janice Wang

This breakout discusses and reaches a better understanding of the strengths and limitations of the rapidly-expanding array of sarcoma models. Which models do we need more of, to ensure progress towards cures?

Deliverable options: a) state-of-the-science review on sarcoma models; or b) pilot project comparing 2-3 types of models with which to address the same critical question (and defining key strengths/weaknesses of each model).