





February 15-17, 2019

Inspire2Live, a cancer patient foundation based in Amsterdam, partnered with the Whitehead Institute at the Massachusetts Institute of Technology to host a three-day oncology Discovery Forum in Cambridge, MA in mid-February. Among the unique attributes of this forum was that it assembled top world-wide preclinical and clinical researchers in key oncology sub-disciplines to present their latest findings. The forum group followed their initial presentations of current work by collectively brainstorming on ways in which their individual research could inform and influence their peers' work. Inspire2Live pioneered this approach to integrate disciplines in the latest oncology research areas in order to achieve collaborative value beyond any one institution or researcher.

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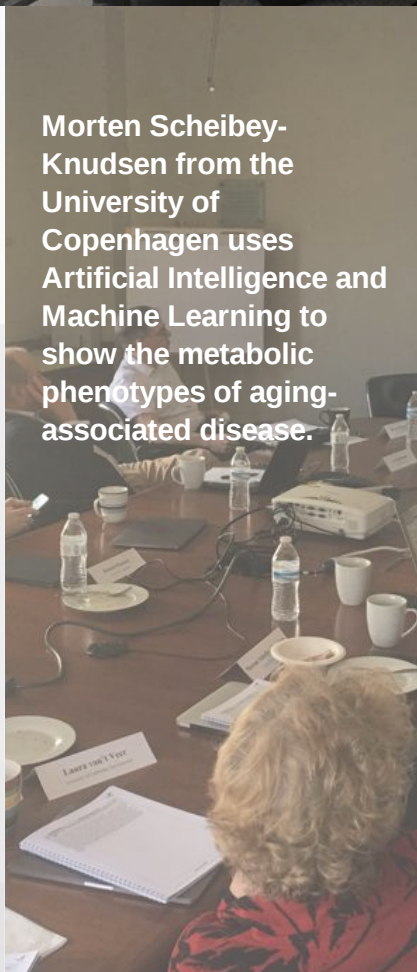
CEO of Inspire2Live, Peter Kapitein, and Whitehead Institute Founding Member, Bob Weinberg kicked off the forum over a working dinner on Friday evening. Leading off the presentations of current research were:



Valter Longo from the University of Southern California in Los Angeles

Valter Longo explained about his work on 'starvation' of cancer cells. Via fasting or intermediate fasting, in combination with chemotherapy the process of starvation can be induced in cancer cells.

Morten Scheibye-Knudsen from the University of Copenhagen uses Artificial Intelligence and Machine Learning to show the metabolic phenotypes of aging-associated disease.





Lex Eggermont, General Manager of the Institute Gustav Roussy in Paris.



Lex Eggermont described the success of PD1 and PDL1 inhibitors in immunotherapies

Jan Hoeijmakers from the Erasmus Medical Center in Rotterdam showed the protective effect of dietary restrictions for cancer treatments and the emerging ability to selectively eliminate senescent cells from living tissues as an anti-aging intervention.



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An early start over breakfast on Saturday morning

continued the research presentations by:

- Edward Giovannucci from the Harvard School of Public Health explained that 35% of the cancers in the U.S. are due to lifestyle including nutrition and physical activity. Two important aspects are insulinemic and pro-inflammatory factors that affect metabolic conditions.
- Ronald Plasterk from the University of Amsterdam described the progress in DNA sequencing that makes it possible to identify mutation-based cancer neoantigens. One class of these mutations are called 'frame shifts', which can lead to the synthesis of novel oligopeptides and, in turn, tumor-specific vaccines being developed for cancer patients.
- Brent Reynolds from the University of Florida in Gainesville discussed analogies between cancer treatment and ecological interventions . . . which he refers to as 'Ecology Oncology'. He is investigating this model in an application to high-grade glioma.
- Matthew Vander Heiden of the Koch Institute at MIT is exploring the use of metabolic pathways to address therapeutic vulnerabilities of cancer cells.
- Laura van 't Veer from the University of California in San Francisco documented her work in the use molecular and genetic biomarkers to predict and better treat breast cancers. This encompasses escalating and de-escalating treatment based on the data and the I-SPY2 platform trial for neoadjuvant treatment of locally advanced breast cancer at UCSF.
- Jedd Wolchok from the Memorial Sloan Kettering Cancer Center described the successes of immunotherapy to block molecular checkpoints that restrain T-cell activity. New innovations include tumor-specific T cells for adoptive transfer and the use of virotherapy and other injectable agents to induce baseline immunity responses.
- Bob Weinberg from the Whitehead Institute and MIT presented his research on the epigenetic determinants of cancer, which influence the behavior of cancer cells and tumors. He explained the importance of the epithelial-mesenchymal transition (EMT), which governs the behavior of advanced carcinoma cells and the formation of cancer stem cells (CSCs) including the formation of therapy-resistant CSCs.

How each other's research could benefit from or influence the work of others.

Beginning Saturday afternoon of the Discovery Forum, the group turned its focus to brainstorming collectively on how each other's research could benefit from or influence the work of others. The discussions were facilitated by Lex Eggermont from IGR. Although there was insufficient time to generate conclusions or results, the discussion prompted new ideas including on the topics:

- Importance of the microbiome and the potential reduction of cancer mortality via metabolic means via lifestyle, diet, and fasting
- Rational application of combination therapies
- Expanding the efficacy of immunotherapy including the use of vaccines in combination with checkpoint inhibitors
- Better prediction and treatment of metastases
- Potential applicability of eco-oncology models





Whitehead Institute

Saturday evening was an opportunity for a more relaxing and social dinner with the team.

Once again on Sunday, the collaborative and integrative discussions began early over breakfast at the Whitehead Institute. The group concluded by agreeing to ponder potential areas of mutual interest. It was recommended that a follow-up session be scheduled in 6-9 months.