

BEYOND CENTER FOR FUNDAMENTAL CONCEPTS IN SCIENCE

Cancer Forum

Complex Systems Theory and Cancer Biology
February 22 - 23, 2014

Arizona State University
Tempe Mission Palms Hotel

AGENDA

Saturday, February 22

9:00 – 9:30 am Paul Davies

Brief welcome address and aims of the meeting

Session 1: The need for a new conceptual framework

Session Chair: Paul Davies

9:30 – 10:15 Robert Austin

“Why we are failing”

10:15 – 10:30 Discussion

10:30 – 11:00 *Tea/coffee break*

11:00 – 11:45 Thea Tlsty

“The nature of the challenge”

11:45 – 12:00 Discussion

12:00 – 12:45 TBD

“Genetic and epigenetic links between cancer and embryo development”

12:45 – 1:00 pm Discussion

1:00 – 2:30 *Lunch*

Session 2: A network approach

Session Chair:

2:30 – 3:15 TBD

“Cancer as a transformation of GRNs”

3:15 – 3:30 Discussion

3:30 – 4:00 *Tea/coffee break*

4:00 – 4:45 Timothy Newman

“A topological theory of cancer”

4:45 – 5:00 Discussion

5:00 – 5:30 General discussion

Sunday, February 23

Cancer as an ancestral phenotype

Session Chair: Luis Cisneros

9:00 – 9:45 Mark Vincent

“Towards the general theory of the target”

9:45 – 10:00 Discussion

10:00 – 10:45 Charles Lineweaver

“Targeting the weakness: therapeutic implications of the atavism theory”

10:45 – 11:00 Discussion

11:00 – 11:30 *Tea/coffee break*

11:30 – 12:15 Carol MacKintosh

“Cancer as a disorder of signal multiplexing in the vertebrate animals”

12:15 – 12:30 Discussion

12:30 – 2:00 *Lunch*

The way ahead: a systems approach?

Session Chair:

2:00 – 2:45 Sui Huang

“Cancer attractors: non-Darwinian effects”

2:45 – 3:00 Discussion

3:00 – 3:45 Kunihiko Kaneko

“The origin of cancer: gene expression profile plasticity and robustness”

3:45 – 4:00 Discussion

4:00 – 4:30 *Tea/coffee break*

4:30 – 5:30 TBD

“Take home ideas”

5:30 pm *Meeting concludes*

6:30 pm Combined reception