

# Arizona State University

## ARIZONA CANCER AND EVOLUTION CENTER and BEYOND CENTER FOR FUNDAMENTAL CONCEPTS IN SCIENCE

### Tracing the Deep Evolutionary Roots of Cancer

Workshop April 23rd-24th, 2018

April 23 - 25, 2018

Scottsdale

## Agenda

### Sunday April 22<sup>nd</sup> – Garden Courtyard

6:30 – 8:00 pm Informal welcome reception

### Monday April 23<sup>rd</sup> – Pueblo Room I

9:00 – 9:30 am Paul Davies

Brief welcome address, outline of the subject and aims of the meeting

### Session 1

#### The need to re-conceptualize cancer

9:30 – 10:00 am Carlo Maley

“New approaches to cancer and evolution”

10:00 – 10:45 am Robert Austin

“The lessons of failure”

10:45 – 11:00 am Discussion

11:00 – 11:30 am *Tea/coffee break*

11:30 – 12:15 pm Thomas Bosch

“Why cancer will never be eradicated”

12:15 – 12:30 pm General discussion

12:30 – 2:00 pm *Lunch – Vista Verde Dining Room (2<sup>nd</sup> Floor)*

## **Session 2**

### **Evolution and development**

2:00 – 2:45 pm Athena Aktipis

“Cancer across species”

2:45 – 3:30 pm Carlos Sonnenschein

“Shortcomings of the somatic mutation theory”

3:30 – 4:00 pm Discussion

4:00 – 4:30 pm *Tea/coffee break*

4:30 – 5:15 pm Ana Soto

“Cancer: the embryo’s evil twin”

5:15 – 5:30 pm Discussion

**Tuesday April 24<sup>th</sup> – Pueblo Room I**

## **Session 3**

## **Phylostratigraphy**

9:00 – 9:45 am Tomislav Domazet-Loso

“Cancer as a window on the past”

9:45 – 10:00 am Discussion

10:00– 10:45 pm David Goode

“Ancient genes drive cancer”

10:45 – 11:00 am Discussion

11:00 – 11:30 pm *Tea/coffee break*

11:30 – 12:15 pm Mark Vincent

“Cancer as a re-primitivized phenotype”

12:15 – 12:30 pm Discussion

12:30 – 2:00 pm *Lunch – Vista Verde Dining Room (2<sup>nd</sup> Floor)*

## **Session 4**

### **Cancer as an ancestral phenotype**

2:00 – 2:45 pm Susan Rosenberg

“Randomness and non-randomness in mutations”

2:45 – 3:00 pm Discussion

3:00 – 3:45 pm Kimberley Bussey

“Cancer as a mutator response to stress”

3:45 – 4:00 pm Discussion

4:00 – 4:30 am *Tea/coffee break*

4:30 – 5:15pm Dany Adams

“Bioelectric determinants of phenotypes: an ancient mechanism”

5:15 – 5:30 pm Discussion

## **Wednesday April 25<sup>th</sup> – Pueblo Room I**

### **Session 5**

#### **A theory of cancer: lessons from physics and mathematics**

9:00 – 9:45 am Charley Lineweaver

“The need for testable predictions”

9:45 – 10:00 am Discussion

10:00 – 10:45 am Sui Huang

“The mathematics of phenotypes”

10:45 – 11:00 am Discussion

11:00 – 11:30 am *Tea/coffee break*

11:30 – 12:30 pm Sara Walker

“The software of cancer”

12:30 – 2:00 pm *Lunch*

*Meeting ends*