

Program Schedule | Science & Roger Penrose

Day 1 – Tuesday - August 3, 2021 9:00 am – 12:30 pm PST/AZ

OVERVIEW

Session Chair

Stuart Hameroff, University of Arizona

9:00 am – 10:30 am

Sir Roger Penrose, Nobel Laureate

Oxford University

Consciousness, Quantum State Reduction, Black holes, and Conformal Cyclic Cosmology— Connecting Threads

BLACK HOLES

Session Chair

Roger Penrose, Nobel Laureate

Oxford University

10:30 am – 11:15 am

Reinhard Genzel, Nobel Laureate

Max Planck Institute/UC Berkeley

A 40-Year Journey

11:15 am – 12:00 noon

Roger Blandford

Stanford University

Black Holes - Nature or Nurture?:

The Roles of Rotation and Accretion in Powering Cosmic Sources

12:00 noon – 12:30 pm

Discussion

Day 2 – Wednesday - August 4, 2021 9:00 am – 12:30 pm PST/AZ

QUANTUM MEASUREMENT – OBJECTIVE REDUCTION (OR)

Session Chair

Roger Blandford, Stanford University

9:00 am – 9:45 am

Ivette Fuentes-Guridi

University of Southampton

Exploring the unification of quantum theory and general relativity with a Bose-Einstein condensate"

9:45 am – 10:30 am

Hendrik Ulbricht

University of Southampton

Probing new physics by levitated mechanical systems

10:30 am – 11:15 am

Dirk Bouwmeester

UC Santa Barbara | Leiden University, NL

An experimental investigation of the reduction of the quantum wavefunction

11:15 am – 12:00 noon

Philip C.E. Stamp

University of British Columbia

The correlated worldline (CWL) theory of quantum gravity

12:00 noon – 12:30 pm

Discussion

Day 3 – Thursday - August 5, 2021 9:00 am – 12:30 pm PST/AZ

CONSCIOUSNESS – ORCH OR

Session Chair

Justin Riddle, University of North Carolina

9:00 am – 9:45 am

Stuart Hameroff, University of Arizona

The Orch OR theory of consciousness

9:45 am – 10:30 am

Greg Scholes, Princeton University

Biological quantum phenomena and the brain

10:30 am – 11:15 am

Alysson Muotri, UC San Diego

Complex neural networks spontaneously emerge from human brain organoids

PANEL – QUANTUM BIOLOGY OF MICROTUBULES

Jack Tuszyński, University of Alberta - Panel Chair

11:15 am - 11:25 am - Opening Remarks

11:25 am -11:35 am

Aarat Kalra, Princeton University

Light at the end of the tunnel: Optical signaling through microtubules

11:35 am – 11:45 am

Travis Craddock, Nova Southeastern University

Fano resonances in the resonance Raman spectra of tubulin and microtubules reveals active quantum effects

11:45 am – 11:55 am

Aristide Dogariu, University of Central Florida

Experimental and computational insights into the remarkable electromagnetic properties of microtubules

11:55 am – 12:05 pm

M. Bruce MacIver, Stanford University

Probing consciousness with anesthetics

12:05 pm – 12:15 pm

Anirban Bandyopadhyay, National Institute of Material Sciences, Japan

Triplet of triplet fractal resonance band of tubulin, microtubule

and neuron membrane: Quantum optics & microwave study

12:15 pm – 12:45 pm

Discussion

Day 4 – Friday - August 6, 2021 9:00 am – 12:30 pm PST/AZ

A PRE-BIG BANG UNIVERSE: CONFORMAL CYCLIC COSMOLOGY

Session Chair

Sir Roger Penrose, Nobel Laureate

Oxford University

9:00 am – 9:45 am

Paul Tod, Oxford University

The mathematics behind Penrose's Conformal Cyclic Cosmology

9:45 am – 10:30 am

Brian Keating, UC San Diego

Was there a Big Bang?

10:30 am – 11:15 am

Krzysztof Meissner, University of Warsaw, Poland

Black holes and Conformal Cyclic Cosmology

11:15 am – 12:00 noon

Vahe Gurzadyan, Yerevan Physics Institute, Armenia

Cosmological Constant, CCC, observations

12:00 noon – 12:30 pm

Discussion

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