



2017 TSC Plenary

Roger Penrose - Noam Chomsky - Deepak Chopra - Leon Chua - Peter Fenwick  
Lakshmi Chawla - Anirban Bandyopadhyay - Jiawei Dai - Joscha Bach  
Harmut Neven - Vs Ramachandran - Thomas Bever - Michael Spivey - Matthew Fisher  
Travis Craddock - Marom Bikson - John Allen - Marvin Berman - Michael Rohan  
Ivette Fuentes - Brian Keating - Jack Tuszynski - Gentry Patrick  
Charles Stevens - James Tagg - Elaine Chew - Scott Makeig - Stephen Grossberg  
Georg Northoff - Philip Low - Daniel Sheehan - Erik Viirre - Xu Yinglin  
Bruce Damer - Alysson Muotri - Stuart Hameroff

The Science of Consciousness  
June 5-10, 2017 - San Diego

*"To have a glimpse of what consciousness is would be the scientific achievement before which all others would pale."*  
- William James

'The Science of Consciousness' ('TSC') is an interdisciplinary conference on all aspects of the nature of conscious experience, awareness, feelings and existence. How does the brain produce consciousness? Is consciousness intrinsic to the universe, or an epiphenomenal illusion? How can consciousness causally affect brain processes? What are the best empirical theories? Do we have free will? How did life and consciousness originate and evolve? What are the origins of moral and aesthetic values? How can we improve mental, physical and cognitive function? Can consciousness persist after bodily death, e.g. through 'uploading' to machines, or via mental processes tied to the natural world?

Informal, intensive and interdisciplinary in a fun environment, the 24th annual TSC conference will consist of Plenary Sessions, Pre-Plenary Workshops, Evening Concurrent Talk and Poster sessions, Technology and Art Exhibits, Social Events and Entertainment.

For registration, hotel and other information see: <http://www.consciousness.arizona.edu>

Plenary Program PL1 - PL13

Tuesday June 6, 2017

Aventine Ballroom

PL1 2:00 to 4:10 pm

**CAN MACHINES BE CONSCIOUS?**

Sir Roger Penrose, Oxford, 'How can Consciousness Arise Within the Laws of Physics?'

Joscha Bach, Harvard, 'Consciousness as a Memory of Coordinating Attention: The Conductor Model of Consciousness'

Harmut Neven, Google, Quantum AI, 'Possible Roles of Quantum Effects and Subjective Experience in Artificial Intelligence'

Wednesday June 7, 2017

PL2 8:30 to 10:40 am

**LANGUAGE AND CONSCIOUSNESS**

Noam Chomsky, MIT, 'Language and Unconscious Mental Acts'

Thomas Bever, U Arizona, 'Three Aspects of (Un)conscious Processing in Language and its Normal Use'

Michael J Spivey, UC Merced, 'Language, Consciousness and Embodied Cognition'

PL3 11:10 am to 12:30 pm

**BIOPHYSICS I - MEMORY, SPIN AND ANESTHESIA**

Matthew Fisher, UC Santa Barbara, 'Are We Quantum Computers, or Merely Clever Robots?'

Travis Craddock, Nova Southeastern U, 'A Unitary Mechanism of Anesthesia?: Altering Collective Oscillations in Microtubules'

PL4 2:00 to 4:10 pm

**NON-INVASIVE BRAIN STIMULATION**

Marom Bikson, CCNY/CUNY, 'Non-Invasive Brain Stimulation Devices to Change Thought and Behavior'

John Allen, Arizona, 'Transcranial Ultrasound, Mood, and Resting State Network Connectivity'

Marvin Berman, VieLight, 'Integrating Noninvasive Photobiomodulation and Neuromodulation'

Michael Rohan, Harvard, 'The Effects of Low Field Magnetic Stimulation on Mood and Brain Function'

Thursday June 8, 2017

PL5 8:30 to 10:40am

**PHYSICS, COSMOLOGY AND CONSCIOUSNESS**

Ivette Fuentes, University of Vienna, 'Gravity in the Quantum Lab'

Brian Keating, UCSD, 'Conscious Cosmos'

James Tagg, Cengage, Penrose Institute, 'Are Human Beings Computers?'

PL6 11:10 am to 12:30 pm

**MUSIC AND THE BRAIN**

Elaine Chew, Queen Mary University London, 'Mind over Music Perception'

Scott Makeig, UCSD, 'Mind Over Consciousness?'

PL7 2:00 to 3:30 pm

**NEUROSCIENCE AND CONSCIOUSNESS 1**

Stephen Grossberg, Boston U, 'The Varieties of Brain Resonances and the Conscious Experiences They Support'

Georg Northoff, U Ottawa, 'Temporo-Spatial Theory of Consciousness'

Philip Low, NeuroVigil Inc., 'From Sleeping Finches to Stephen Hawking: Harnessing the Brain's Whispers'

Friday, June 9, 2017

PL8 8:30 to 10:40am

**NEUROSCIENCE AND CONSCIOUSNESS 2 - ANOMALIES**

Daniel P. Sheehan, U San Diego, 'It's About Time: Experiments in Consciousness and Retrocausation'

Peter Fenwick, UC London, 'A Meditation Teacher Who Can 'Transmit' Subjective Light/Energy'

Lakhmir S. Chawla, George Washington U, 'End-of-Life Brain Activity'

PL9 11:10 am to 12:30 pm

**BIOPHYSICS 2 - MEMRISTORS IN THE BRAIN?**

Leon Chua, UCSF, 'Brains are Made of Memristors'

Jack A. Tuszynski, U Alberta, 'Microtubules as Subcellular Memristors'

PL10 2:00 to 4:10 pm

**NEUROSCIENCE AND CONSCIOUSNESS 3**

Gentry Patrick, UCSD, 'Destruction as a Means of Remodeling: The Many Roles of Ubiquitin at the Synapse'

VS Ramachandran, UCSD, 'Embodied Brains and Disembodied Minds'

Charles F. Stevens, Salk Institute, UCSD, 'The Evolutionary Brain Mechanisms That Underlie Consciousness'

Saturday, June 10, 2017

**Vicino Ballroom**

PL11 9:00 to 11:10 am

**VIBRATIONS, RESONANCE AND CONSCIOUSNESS**

Anirban Bandyopadhyay, NIMS, Tsukuba, 'Vibrational Frequencies of Biomaterials are the Key to Integration of Information'

Jiapei Dai, South Central University, China, 'Biophotonic Activities and Transmission in Relation to Consciousness'

Erik Viirre, UCSD, 'Auditory Vibrations and Frequencies: Sounds in Your Head'

PL12 11:40 am to 1:00 pm

**EASTERN PHILOSOPHY**

Xu Yingjin, Fudan University, China, 'Contemporary Theories of Consciousness and Nishida's notion of 'Basho''

Deepak Chopra, Chopra Foundation, 'Mind, Body, and Universe as Human Constructs'

PL13 2:30 to 4:40 pm

**ORIGIN AND EVOLUTION OF LIFE AND CONSCIOUSNESS**

Bruce Damer, UC Santa Cruz, 'The Origin of Life and Consciousness'

Alysson R. Muotri, UCSD, 'Cerebral Organoids for Neurodevelopmental and Evolutionary Studies'

Stuart Hameroff, U Arizona, 'The 'Quantum Pleasure Principle' - Did Life Evolve to Feel Good?'

**Pre-Plenary Workshops**

(Included in conference registration)

**Monday Morning Workshops**

June 5, 2017 - 9:00 am to 1:00 pm

1. Integrated DEI East-West Forum 1

Aventine

(Dayalbagh Educational Institute, Agra, India)

2. Artificial Intelligence and Machine Consciousness

Syros

(Tagg, Bach, Neven, Penrose, Remmel, Verschure)

3. Tenniscentric (Valladares)

Tennis Courts

4. Yoga and Meditation (Birch)

Vicino Garden

**Monday Afternoon Workshops**

June 5, 2017 - 2:00 pm to 6:00 pm

1. Integrated DEI East-West Forum part 2

Aventine

2. Brain Stimulation/Consciousness Technology

Delphi

(Bikson, Sanguinetti, Berman, Rohan, Martin)

3. *Resonance, Life and Consciousness* Athena A

(Schooler, Hunt, Bandyopadhyay, Craddock, Grossberg, Chew)

4. *Consciousness and the Arts* Syros

(Day, Seifert, Kostiner, Electra, QUALIATIK)

5. *Redefining Well-Being: Consciousness* Mykonos A

(Jain, Guarneri, King, Evanow, Muehsam, Vieten)

#### Monday Evening Public Lecture

Institute of the Americas

June 5, 2017 - 6:30 pm to 8:00 pm

Sir Roger Penrose

*Fashion, Faith and Fantasy and the Big Questions in Modern Physics*

Institute of the Americas

10111 N. Torrey Pines Rd. · La Jolla, CA 92037 USA

<https://www.iamericas.org/en>

30 minute walk, 8 minute ride,

Simulcasts to Hyatt Regency La Jolla

#### Tuesday Morning Workshops

June 6, 2017 9:00 am to 1:00 pm

1. *Language and Consciousness* Mykonos A

(T. Bever, Chomsky, Spivey, O.Bever)

2. *Deepak Chopra - 'The enlightened brain'* Aventine

(Chopra)

3. *David Bohm Centennial* Athenia A

(Pylkkanen, Musser, Walleczek)

4. *Quantum Brain Biology* Vicino

(Craddock, Tuszynski, Hameroff, Bandyopadhyay)

#### CONCURRENT SESSIONS - Tuesday C1-C8

June 6, 2017 5:00 to 7:55 pm

*C1: Dualism and Panpsychism* Mykonos

Schriner, Gradowski, Llamas, Remler, Kuznetsov, Kent, Kernion, Pylkkanen

*C2: Memory and Consciousness* Athenia

Nakano, Hsin-ping Wu, Gottlieb, Heile, Anokhin, Fazekas, Loisi, Xiao-Lan Song

*C3: Artificial Intelligence/Virtual Reality 1* Delphi

Verschere, Lin, Bezzubova, Gackenbach, Leping Zha, Duan, Yang Liu, Elamrani

*C4: Consciousness and Molecular Biology* Milos

Wolf, Saluja, Sahni, Schiffer, Baker, Poola, Jiang

*C5: Consciousness and Models of Reality 1* Rhodes

Markan, Yan He, Keppler, Bolaros, Gruber, Beichler, Andrews

*C6: Altered States of Consciousness* Syros

Lopez-Silva, Dolcini, Villanueva, Gerken, Polito, Kanta Arora

*C7: Quantum Ontologies 1* Vicino

Globus, Rosseinsky, Rangarajan, Gaertner, Satsangi, Thomas, Prakash

*C8: Consciousness and Social Interactions* Andros

Olson, Mayhofer, Carrassi, Di Pizzo, Gautam, Harrison, Lloyd

#### Wednesday, C9-C16 June 7, 2017 5:00 to 7:55 pm

*C9: Free Will and Intentionality* Mykonos

Besedin, Munoz-Jimenez, Query, Westcombe, MacNeill, Elliott, Von Schweber

*C10: Complexity and Brain Organization* Athenia

Miyahara, Isler, Matsui, Bar Lev, Lahav, Maninder, Virmani

*C11: Language and Autism* Delphi

Mizumoto, Pensotti, Mertsalov, Bhatnagar, Rai, Powell

*C12: Consciousness and Evolution* Milos

Fredriksson, Whiteley, Morrison, Bakker, Beran, Hamilton, Tirumalai, Oberst

*C13: Meditation and Consciousness* Rhodes

Ahuja, Katyal, Saran, Goldstein, Birch, Mishra, Willman

*C14: Consciousness and Quantum Measurement* Aventine

McQueen, Kathpalia, Bhaumik, Roy, Camargo-Perez, Brophy, Gunji

**C15: Consciousness and Models of Reality 2**

Korotkov, Haoying Liu, Awret, Alessandrini, Agarwal, Allsop

Syros

**C16: Vibrations, Resonance and Consciousness**

Roberts, Burgarella, Schooler, Hunt, Pyari, Katkova, Safin, Krishnananda

Andros

**Friday, C17-C24**

June 9, 2017 5:00 to 7:55 pm

**C17: Explanatory Gap and Intentionality**

Ebbers, Choate, Black, Xinyu Wei, Ruggeri, Jianfeng Li, Ting-An Lin

Mykonos

**C18: Neuroscience Topics**

Dinis-Pereira, Yu Feng, Clark, Persuh, Sanguinetti, Lei Zhang, Bettinger

Athenia

**C19: Consciousness and Unconscious Processes**

Ginzburg, Six, Stevenson, Gutman, Norman, Hedne

Delphi

**C20: Mind Body**

McKusick, Jain, Mruthinti, Evanow, Vieten, Yijun Liu,

Milos

**C21: Artificial Intelligence and Models of Reality**

Panov, Beck, Shirtz, Charan, Singh, Jyoti Kumar Arora

Rhodes

**C22: Consciousness and Models of Reality 3**

Khabeev, Narayanan, Jain, Cortel, Kim, Valladares, Preeti Srivastava, Ju Hyoung Lee

Syros

**C23: Consciousness and the Arts**

Day, Menshikova, Colbert, Kostiner, Malhotra, Idnani

Andros

**C24: Quantum Ontologies 2**

Hankey, Narayan, Rulin Xiu, Knox, Kohl, Blum, Green

Palatine

**Wednesday, June 7, 7:00 to 10:00 pm**

**POSTER SESSION 1**

P 1

Agarwal, Hans  
Agarwal, Sapna  
Agarwal, MD, Siddharth  
Alakh, Saini  
Azevedo, Erico  
Bhasin, Shobha  
Bhasin, Rajneesh  
Bhat, Seema  
Bommireddipalli, Aashiq  
Buglo, Elena  
Chellapilla, Patvardhan  
Datta, Tapas  
Gorjup, Rado  
Gupta, Shanti  
Gupta, Saatviki  
Gupta, Chhavi  
Gupta, Malvika  
Jois, Suresh  
Kapoor, Toran  
Khan, Abdul Sameer  
Khatkale, Swati  
Khurana, Lokesh  
Kumar, Vinit

Markan, Nagma  
Mathur, Reena  
Mathur, Gazal  
Misra, Rupali  
Mittal, Priyanka  
Parmar, Renu Singh  
Paul, Sandeep  
Poude, Ananda  
Prokash, Richa  
Pyari, Satgur  
Ramchandran, Sundaram  
Rana, Neeti  
Saini, Dayal  
Sandhu, Dayal  
Saravanan, B  
Satsangee, Nandita  
Satsangi, Tatavarty Neh  
Satsangi, Sumiran  
Saxena, Rubina  
Sharma, Premkali  
Sharma, Pallavi  
Sharma Mathur, Payal  
Shivhare, Neha

Singh, Sonal  
Singh, Majer  
Singh, Meenu  
Sinha, Neha  
Srivastava, Savita  
Srivastava, Sumita  
Srivastava, Ashima  
Srivastava, Kundan  
Sundaram, Prem  
Swami, Hardas  
Swaroop, Arati  
Tiwari, Lalitesh  
Trivedi, Chandra Prakash  
Zadey, Siddhesh

Grand Foyer

**POSTER SESSION 2**

Friday, June 9, 7:00 to 10:00 pm

P 2

Andrea, Mills  
Aviv, Dorit  
Barbosa, Paulo  
Barreto, Maribel  
Barsotti, Tiffany  
Bozorgi, Gooya  
Brito, Ana  
Chen, Shuo  
Chiarella, Horacio Andres  
Coelho, Jonas  
Cohly, Hari  
Costa, Juliana  
Costa, Laura  
Daneshfard, Babak

Davis, Scott  
DeLi, Eva  
Dzhaber, Milana  
Galikova, Silvia  
Graca, Nebojsa  
Guta, Mihretu  
Hong, Injae  
Kashyap, Anhad  
Kozyreva, Olga  
Lee, Yeseul  
Mathur, Ajeet  
Melkikh, Aleksei  
Muehsam, David  
Pankovski, Toso  
Patil, Dnyandeo  
Peerally, Abed  
Plotke, Robert

Safina, Natalia  
Saini, Alakh  
Sarfarazi, Mohsen  
Schafer, Robert  
Shetkar, Rashmi (Reshma)  
Sood, Deepshikha Nigam  
Steinvorth, Ulrich  
Swami, B V  
Usvapelto, Ilona  
Ventureyra, Scott  
Vucolova, Ludmila  
Wang, Cheng  
Williams, Matthew  
Wong, Ming  
Zegarac, Milica  
Zhang, Jiahe  
Zhu, Yaoping

Grand Foyer

**ART-TECH-HEALTH EXHIBITS**

Wednesday and Friday 7:00-10:00 pm

Pau1 Thomas, Quantum Consciousness, Art and Design

Grand Foyer

Margaret Dolinsky, Creativity and its Mediation for Navigating between Reality and Virtual Reality  
Pam Payne, The Telenoetic Medium - Presentation of The Author's Video Artwork, A Mnemonic Device to Facilitate Meditative, Noetic States of Consciousness  
Jens Pilegaard, Musings on Captured Moments  
Naama Kostiner, Create Your Own Flow  
Jiyun Park, W[hole]ness - Scaling Consciousness/Cosmologies Through Geometry  
Jeanne Marie Sanguinetti - Pac Man Line  
Mimi Loup Brown, Artist  
Cyndi Sanguinetti, Artist

**SCIENCE AND TECHNOLOGY EXHIBITS**  
Wednesday and Friday 7:00-10:00 pm

Grand Foyer

Vielight Inc.  
Infrared Photomodulation and Neurofeedback for Alzheimer's disease  
Marvin Berman

Soterix Medical  
Transcranial Electrical Stimulation  
Abhishek Datta

Roger Penrose Institute  
Creativity Inspiration/Creativity Competition  
James Tagg, Erik Viirre

McLean Hospital, Harvard Medical School  
Low Field Magnetic Stimulation  
Michael Rohan

Arthur C. Clarke Center at UCSD  
Assembly  
Sheldon Brown

University of Arizona Center for Consciousness Studies  
Transcranial ultrasound ('TUS') program  
Chris Chan, Betsy Bigbee, Stuart Hameroff, Jay Sanguinetti

National Institute of Material Science, Tsukuba, Japan  
Visualizing microtubule information processing  
Anirban Bandyopadhyay

University of Alberta  
Unfolding misfolded proteins to treat neurodegenerative disease  
Jack Tuszynski

Geo-Pro-Ton, Slovenia  
'Avatar' Cognitive Training and Quantum Zeno Effect  
Rado and Niko Gorjup

**Wellness - Health**

Barcino

**The Chopra Center**  
You Are The Universe - Wellness Space

Daily 7:00 - 8:00 am  
**Mark Valladares, TennisCentric**

Tennis Courts

Daily 6:30-7:30 am and 4-5 pm  
**Beryl Bender Birch, Yoga and Meditation**

Vicino Garden

**Social Events - badges required**

**Tuesday, June 6, 2017**  
7:00 to 10:00 pm  
**Opening Reception**

Vicino

**Wednesday, June 7, 2017**  
9:00 - 11:00 pm  
**Club Consciousness**  
'QUALIATIK', 'Dorian Electra and the Electrodes'

Vicino

**Thursday, June 8, 2017**  
6:00 to 10:00 pm  
**Conference Banquet\*\***  
Advance registration required \$75\* before May 25  
Etaine Chew, Queen Mary University of London, Piano

Vicino

**Friday, June 9, 2017**  
10:00 pm to midnight  
**Club Consciousness**  
Etaine Chew, Queen Mary University of London  
Scott Makeig - Brain Music Concert  
'QUALIATIK', 'Dorian Electra and the Electrodes'

Aventine

**Saturday, June 10, 2017**  
8:00 pm to ????  
**Poetry Slam, Talent Show, Finals: Creativity Competition**  
'End-of-Consciousness' Party

Vicino

2017 TSC San Diego

**Sponsored by**  
The Center for Consciousness Studies, The University of Arizona

'TSC' 'The Science of Consciousness' Conference Series - since 1994  
The Center for Consciousness Science, The University of Michigan  
Quantum Gravity Research, Los Angeles  
Alvin J. Clark Foundation  
The Roger Penrose Institute, La Jolla, California  
The Bhaumik Institute of Theoretical Physics at UCLA (Mani Bhaumik Foundation)  
The Arthur C. Clarke Center for Human Imagination, UCSD  
Dayalbagh Educational Institute, Agra, India

**Conference Program Committee**

Stuart Hameroff (Chair),  
Abi Behar-Montefiore, Betsy Bigbee, James Tagg, Erik Viirre, Jay Sanguinetti, Paavo Pytkkanen

**LINKS**

**REGISTER / PAYMENT SITE**

University of Arizona  
<https://eagle.sbs.arizona.edu/sc/>

**WEBSITE**

Center for CONSCIOUSNESS STUDIES  
TSC 2017 La Jolla - Conference  
[www.consciousness.arizona.edu](http://www.consciousness.arizona.edu)

**Hyatt Regency Hotel - La Jolla at Aventine**

Link to group rate \$199  
3777 La Jolla Village Drive  
San Diego, CA 92122 USA  
Tel: +1 858 552 1234  
Speak with Michelle B/Reservations

**INFORMATION / EMAIL**

[center@u.arizona.edu](mailto:center@u.arizona.edu)  
Info/Press Contact: Abi Behar Montefiore

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