

The Origins and Future of Pattern Processing and Intelligence: From Brains to Machines

Workshop Agenda

March 11-12, 2016

Tempe Mission Palms

Hosted by The Origins Project with the National Institutes of Health

All events held at Tempe Mission Palms Hotel unless otherwise noted

FRIDAY March 11	EVENT	LOCATION
Arrivals		
12:30- 1:30pm	<p><i>Welcome Lunch Buffet</i></p> <ul style="list-style-type: none"> • Vegetarian and meat options available 	Dining Room, Tempe Mission Palms
1:30- 3:30pm	<p>Welcome: Lawrence Krauss</p> <p>Session 1: Self-Assembly and Experience-Dependent Remodeling of the Human Brain</p> <ul style="list-style-type: none"> • Mark Mattson “Superior Pattern Processing is the Essence of the Evolved Human Brain” • Michael Stryker “How Photon Patterns Sculpt the Developing Visual Cortex” • Michael Meaney “How Early Life Experiences Instill Persistent Cognitive Patterns” • Jay Giedd, “The Dynamic Adolescent Brain” 	TBD Tempe Mission Palms
3:30- 4:00pm	<i>Break - coffee and snacks available</i>	Break Room, Tempe Mission Palms
4:00- 6:00pm	<p>Session 2: Encoding and Generating Patterns: Language, Reasoning, and Creativity</p> <ul style="list-style-type: none"> • Barbara Landau “Language, Maps, and the Patterns of Human Communication” • Tom Mitchell “On fMRI Studies of Lexical Analysis: Findings and Implications” • Tamiko Azuma “Semantic Cognition within Healthy and Impaired Aging Parameters” • Jordan Grafman “Emotional Intelligence: Meet Me at the Corner of Cognition and Emotion” • Danai Koutra “Studies of Brain Networks and Creativity” 	TBD Tempe Mission Palms
6:00-	<i>Reception for visiting and local participants</i>	The Cloisters,

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7:00pm		Tempe Mission Palms
7:30pm	<i>Out of town guests and organizers walk to dinner</i>	House of Tricks
SATURD AY March 12	EVENT	LOCATION
8:00-9:00 am	<i>Continental breakfast in Break Room</i>	Break Room Tempe Mission Palms
9:00- 10:30am	Session 3: Disordered Mental Pattern Processing: Delusions, Autism and Alzheimer's Disease <ul style="list-style-type: none"> • Vince Calhoun "Mapping and Predicting Schizophrenia with fMRI" • Dimitrios Kapogiannis "Escape from Reality: The Cognitive Neuroscience of Religion" • Eric Reiman "What Will it Take to End Alzheimer's?" • Sonia Lupien "How Stress Alters Cognition and Behavior Patterns" • Paul Dagum "Detecting Cognitive States and Disorders" 	TBD Tempe Mission Palms
10:30- 11:00am	<i>Break - coffee and snacks available</i>	
11:00- 12:30pm	Session 4: Mechanized Pattern Detection and Processing <ul style="list-style-type: none"> • Eric Horvitz "Intelligence and computational models of rationality" • Christof Koch "Consciousness and the Brain: Is there anything exceptional about humans?" • Ori Amir "Neural Basis for Image Preference" • Gary Marcus "AI: Are Electrons Sufficient?" 	TBD Tempe Mission Palms
12:30-	<i>Lunch Buffet</i>	Dining Room,

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1:30pm		Tempe Mission Palms
1:30- 3:00pm	<p>Session 5: Patterns in Chaos, Decision Making, and Artificial Intelligence</p> <ul style="list-style-type: none"> • Colin Camerer “Neuroeconomics and Decision Making” • Fei-Fei Li “Algorithms for Machine Learning of Patterns” • John Daugman “Pattern Recognition within Apparent Chaos” • Terrence Sejnowski “Computational Neuroscience and Artificial Intelligence” • Richard Lewis “Studies in Bounded Optimality: Models and Results” • Subbarao Kambhampati “Analyzing the Human Factor in Robot-Human Relationships” 	
3:00- 3:30pm	<i>Break - coffee and snacks available</i>	Break Room, Tempe Mission Palms
3:30- 5:15pm	<p>Session 6: Robotics: Challenges for Science, Engineering and Humanity</p> <ul style="list-style-type: none"> • Jean-Baptiste Mouret “Engineering Robots that Adapt to Adversity” • Cynthia Breazeal “Models of Mind in Human-Robot Coordination” • Pavan Turaga “Using Machine Learning to Improve Home-Based Stroke Rehabilitation Systems” • Marco Santello “Investigating sensorimotor integration in hand prosthetics” • Manuela Veloso “On Integrating Sensing, Planning, and Perception for Real-World Collaborative Robots” 	TBD Tempe Mission Palms
5:15- 5:45pm	Open Discussion and Workshop Wrap Up	TBD Tempe Mission Palms
5:45-	<i>Free time</i>	Tempe

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6:00pm		Mission Palms
6:00pm	<p>Depart for public event at Gammage Auditorium</p> <ul style="list-style-type: none"> <i>Please make sure you bring the tickets provided in your workshop folder</i> <i>Please check in with Origins staff if you prefer to walk to Gammage in lieu of the group transport</i> 	Meet in front of TMP lobby
6:15-6:45pm	<p><i>Reception with heavy hors d'oeuvres at Gammage Auditorium</i></p> <ul style="list-style-type: none"> <i>No formal dinner this evening</i> 	Scoular Lounge, Gammage Auditorium
7:00-9:45pm	Depp + Krauss: Finding the Creativity in Madness, An Evening with Johnny Depp	Gammage Auditorium
9:50pm or 10 minutes after the end of the event	<p>Depart for Tempe Mission Palms</p> <ul style="list-style-type: none"> Bus will leave promptly 15 minutes after the end of the event – proceed to loading zone near Box Office 	Outside of Gammage – Loading Zone near Box Office
SUNDAY March 13	EVENT	LOCATION
7:30-8:30am	<p><i>Breakfast served in dining room</i></p> <ul style="list-style-type: none"> <i>Please use the breakfast voucher provided in your folder</i> 	Dining Room, Tempe Mission Palms
Hotel Checkout 12:00pm	<p>Depart for Airport morning of March 13th</p> <ul style="list-style-type: none"> The hotel concierge can arrange shuttle transportation from the hotel to the airport 	Tempe Mission Palms
12:00-	<i>Lunch for those who haven't yet left for airport</i>	TBD

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1:00pm

- Bags can be stored with the hotel concierge