



ANFA | Academy of Neuroscience for Architecture

Fifth International Conference: SENSING SPACES, PERCEIVING PLACE
In honor of John Paul Eberhard, FAIA, Founding President
September 14-25th, 2020

WELCOME

Fred Marks | "Dramatic view of Salk Institute from overhead and at close range plus a conference introduction from ANFA's President"

KEYNOTES

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| Scott Makeig "Processing Complex, Concurrent, Multimodal , and Multi-rate Data through Mobile" | Live Session: Thursday, September 24, 9:00 am PDT Moderator Eduardo Macagno |
| Alan Penn "Architectural Space, Intelligibility, and Social Progress" | Live Session: Friday, September 25 8:00 am PDT Moderator David Kirsh |
| Isabella Bower "Architecture with Feeling: Measuring Emotional and Neurophysiological Resonances to the Built Environment" | Live Session: Thursday, September 24, 1:00 pm PDT Moderator Alison Whitelaw, Frederick Mark |

TALKS

| Design Thought Process | |
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| Understanding the Effect of Spatial Ambiguity on Creative Modes of Thinking | Rebecca Milne, Bob Condia, Hanna Neyami, Katherine Glucksleig |
| From Sensing Places to Design Spaces: Linking Wayfinding, Memory, and Imagination | Michael A. Arbib |
| Phenomena Potential - Towards a Practical Neurophenomenology of Architecture and Urban Design | Itai Palti, Aishwarya Narayana, Natalia Olszewska |
| Space Layout Design and Sketching: A Study of Architects' Neurophysiological Activations | Sonia Vieira, John S. Gero, Jessica Delmoral, Shumin Li, Gaetano Cascini, António Fernandes |
| Health & Healthcare | |
| Designing a Retirement Community: Minding the Hippocampus. | Eduardo Macagno, Jessica Patrick |
| Architectural Subliminal Therapy: The Parallel of Architecture and Traditional Forms of Therapy to Propose New Accessible Treatments for Psychological Disorders | Katarina Richter-Lunn, Dr. Nancy Etcoff |
| Elements of Enriched Environments that Attune Activated Optimal Health | Tye S. Farrow |
| Performance Variables: Biophilia, Color, Light | |
| Engaging Spatial Maps with Multisensory Illusions | Debajyoti Pati, Apoorva Rane, David A. Navarrete, Bill Witherspoon |
| Strategies for Measuring Attention, Saliency & Luminance in Cities | Biayna Bogosian, Kristine Mun, Ying Wu, Sydney Kessler, Weichen Liu, Chi-Yuan Chang |
| Personalized Lighting for the Non-visual Age and Beyond | Carolyn Swope, Regina Valcekonyte, Shengliang (Daniel) Rong |
| On Vision: The Science and Cultural History of Spatial Perception and Imagination | Zixuan (Sharon) Deng |
| Occupant Behavior in Buildings & Beyond | |
| Cognitive Performance in Immersive Virtual Environments: Initial Assessment on Behavioral and Physiological Outcomes | Jesus G. Cruz-Garza, James D. Rounds, Saleh Kalantari |
| Experiments in Architectural Modeling with Visual Discriminative Neural Patterns | Pierre Cutellic |
| New Pathways for Neuroscience in Space Habitat Design and the New Field of Space Architecture | Melodie Yashar |
| Designing for an Aging Society: Neuro-generative Environments that Foster Creativity, Promote Positivity and Reduce Stress | Upali Nanda, Itai Palti, Aishwarya Narayana, Natalia Olszewska |
| Spatial Interactions & Navigation | |
| Maps, Frames of Reference, and Spatial Cognition | Kathryn Rhett Nichols, Roberto Casati |
| Subiculum Neurons Fire to Multiple Orientations to Encode Environmental Path Structure | Ryan Place, Douglas Nitz |
| Brain Meets Building when Behavior Meets Space | Upali Nanda, Sally Augustin, Babak Soleimani |
| Architectural Affordances: Alpha Suppression of Proprioceptive Prediction-Errors | Zakaria Djebbara, Lars Brorson Fich, Laura Petrini, Klaus Gramann |
| Sensory Experience | |
| Mind and Machine: Interaction, Performance and Mental Expression through Robotics and Computation | Katarina N. Richter-Lunn |
| Inner Geographies for Psycho-Spatial Wellbeing: Converging Situatedness and Mindfulness in an Ecologically-Valid Approach | Dr. Mizan Rambhoros, Dr. Matthew Pelowski |
| Sensory Hierarchies: An Investigation of Olfactory Architecture | Jenna Ritz |
| Towards A Neuroarchitectural Interpretation System and the Sensory Experience | Luis Othon Villegas Solis |
| Catalysts to Learning | |
| The Measurable and Immeasurable: How Scientists and Architects Work Together | Dr. Colin Ellard, Bob Condia |
| Placing "Process" in the Spotlight: Architectural Education as a Testing Ground for Cognitive Science-Design Translation | Andrea Jelić, Zakaria Djebbara, Lars Brorson Fich, Tenna Doktor Olsen Tvedebrink |
| Common Sense: Investigating the Behavioral and Cognitive Impact of Architectural Qualities in Educational Environments | Klaudio Muca, Carsten Primdahl, |
| Embodied Design Cognition: Effects of Information Granularity and Task on Gestures while Interpreting Architectural Plans | Yesol Park, Martin Brösamle, Christoph Holscher, John Gero |
| Measurement Tools: Hardware & Software | |
| Comparative Studies of the Experience of Architectural Space through Reality Capturing and Virtual Reality | Kai Reaver |
| TRACer, a Neuroscientifically Enhanced AI for Analyzing and Certifying Culturally Encoded Emotions of Architectural Drafts | Rainer Gabriel, Heiner Mühlmann, Nico Pezer, Thomas Grunwald, Frank Medefindt |
| Architects and Citizens: Do They See Urban Environment Differently? | Irina A. Shmeleva, Veronika Yamilova |
| Aesthetic Judgments and Emotional Responses to Architectural Boundaries in Virtual Reality Environments | Tuğçe Elver Boz, Halime Demirkan, Burcu A. Ürgen |

POSTERS

| Design Thought Process | |
|---|--|
| Using a Detailed 'Lens of Care' to Re-evaluate and Learn from Specialized Architectural Practice | Anthony Clarke |
| The Architect's Brain Revisited: How Neuroscience Can Inform Architectural Education | Athena Moustaka |
| Strategies for Architectural Creativity using Artificial Intelligence: Understanding Our Cognitive Processes through Statistical Learning | Emmanouil Vermisso |
| Modalities in Motivation: Implementing Reversal Theory in a High Tech Work Environment | Haley Wilson |
| From Sense to Perception: Expectation | Kevser Yildiz |
| Corporeal Architecture: Integrating Neuroscience and Performance Art to Design for Experience | Maria da Piedade Ferreira |
| The Neuroaesthetics of Artificial Intelligence | Matias del Campo |
| Appraising the Role of Architectural Proportion from a Psychological Perspective | Tiziana Proietti, Sergei Gepshtein |
| Movement of Professionals for Studies on Neuroscience for Architecture | Suzana Fetter Fagundes, Isabela Franco Schreiber, Sandra Marise Cescon, Priscilla Bencke |
| Engineering Affect in Virtual Interior Space and Assessment in 360 VR | Ms. Judy Theodorson, Dr. Vahid Vahdat |
| The Manifesto for Quantum Architecture: Regaining Memory of a Neuroscience-inspired Model to Precipitate an Architectural Paradigm Shift | Tom Haynes |

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| A Computational Approach to Space identification of the Architectural Plan | Chae-Shin Yoon |
| Health & Healthcare | |
| An Anthropological Approach to Health Clinic Design in Rwanda | Hannah Thayer, Judy Theodorson |
| Integrating Auditory Neuroscience into Architectural Acoustics Consulting Practice | Ben Davenney, Ioana Pieleanu |
| Interior Design Attributes to Stimulate Cognition and Assist people with Alzheimer's. | Jay Gangwani |
| Nexus between Sustainable Buildings and Human Health | Madlen Simon, Edward Bernat, Ming Hu |
| Impact of Project Strategies on the Wellness in a Corporate Building: Well Certification and "Neuroarchitecture" | Mariana Hommerding |
| Can Residential Architecture Constitute a Part of Human EE and Contribute to Recovery, Prevention, and Stress Reduction? | Hanna Morichetto |
| Reinventing Culture Through the Use of Space: Longitudinal Survey Presenting Four Case Studies in Workplace and Healthcare Facilities | Pamela J Cole |
| Backyard Motosensory Path - Pilot Study | Patrycja Haupt |
| Enriching Spatial Memory in Individuals with Mild Cognitive Impairment through Enriching their Living Environment | Raha M. Rastegar |
| Revisiting Kirkbride: The Dark Side of Attunement and Designing for Respite | Reneé Desneige Christensen |
| If These Walls--and Inhabitants--Could Talk: How Ethnographic Methods Give Voices to Those Most Impacted by Carceral Design | Stephen A. Carter |
| Fractal Aesthetics: Designing for Stress Reduction with Fractal Geometries and Soft Fascination | Maria Decker |
| Post-Occupancy Evaluation of a Hospital Intensive Care Unit: Users' Perception of the Built Environment Quality | Eleonora C. Zioni |
| Performance Variables: Biophilia, Color, Light | |
| Temporal Impact of Spatial Features | Basma Altaf |
| Depression and Environmental Potential Therapy: Experience the Immediate and Periodical Impact of an Urban Landscape Components that can Reduce the Symptoms of Women's Depression | Elnaz Abbasian |
| Retrofit and Sustainable Strategies Improve Quality in the Workplace and Promote User Satisfaction | Isabela Franco Schreiber, Suzana Fetter Fagundes |
| Light Hygiene in the Built Environment | Marilyne Andersen, Victoria E. Soto Magán, Forrest Webler, Clotilde Pierson |
| Biophilic Design into Neuroarchitecture: Influence of Vegetation within Indoor Spaces on Restorativeness | Rhee Heon Rhee, Brian Schermer |
| The Impact of Biophilic Design on Employee Satisfaction and Well-being | Dr. Mascatelli, Ms. Bochart, and Mr. Piacentini, |
| Do Aesthetic Attributes of Architectural Design Promote Mental Health and Well-being? | Sarah Williams Goldhagen, Jennifer Jane Roe, Hana Kassem, Collin Ellard |
| The Experience of Immersion in Colored Light: Subjective Impression and Preference | Judy Theodorson |
| Occupant Behavior in Buildings & Beyond | |
| Quality of Life, Perceived Stress and Work Environment: A Pilot Study among Prison Officers | Pier Marconi |
| Developing an Emotionally Intelligent Architectural Language: Raising EQ in Prison Architecture | Jessica Patrick |
| Space Matters: Designing for Resident and Staff Outcomes in a Confined Civil Commitment Facility | Jeri Brittin, Jason Beshore, Antia Schlank |
| How Does Expert Opinion Affect Personal Liking in Different Temperatures? | Arzu Shain |
| Perceiving the Past: Experiences of Architecture and Authenticity in Barcelona | AnnaMarie Bliss |
| Effect of Orphanage Interior Design on the Sense of Place Attachment and Changes of Brain Funtional Connectivity | Farzaneh Behzadi |
| Impact of Scale and Crowding on People's Movement, Perception and Phenomenological Experience of Architectural Space | Lara Gregorians |
| Aesthetic Judgments and Emotional Responses to Architectural Boundaries in Virtual Reality Environments | Tuğçe Elver Boz, Halime Demirkan, Burcu A. Ürgen |
| A Private Residential Complex Designed to Enhance User's Brain Activity Using Interactional Design Parameters (QEEG-VR) | Mahmoud Turk |
| Spatial Interactions & Navigation | |
| An Approach to Categorization of Effects of Architecture on the Brain Based on Time of Exposure to Stimuli | Andrea de Paiva |
| Space and Place as Architectural Concepts: Confronting a False Dichotomy | Mark Alan Hewitt |
| Spatial Ability and Human Perception of Spatial Depth and Complexity | Joori Suh, Ji Young Cho |
| Room for Being Apart Together: How Spatial Organization Affords Social Interactions across Different Contexts | Ann Heylighen |
| Mapping Urban Moods: A Study on Comparing Human Response Between Walking and Cycling Along Streets | Ercument Gorgu, Chaoran Chen |
| Implementation of Eye-tracking in the Process of Design for Wayfinding | Jain Kwon |
| Representations of Spatial Analogy Found in Rat Subiculum Neurons | Alexander Johnson, Douglas Nitz |
| Inner Geographies for Psycho-Spatial Wellbeing: Converging Situatedness and Mindfulness in an Ecologically-valid Approach | Dr. Mizan Rambhoros, Dr. Matthew Pelowski |
| Structuring Senses - Efficient Walking Spaces | Sagar Jhanglani |
| Role of Intuitive Geometric-constructs in Human Wayfinding Behaviours | Sudhir Kumar Pasala, Mehdi Khamassi |
| Socio-cultural and Individual Differences in Neural Underpinnings of Perceiving Exterior and Interior Elements of Environment: A Cross-cultural Functional MRI Study | Yang Chen Lin, Chih Mao Huang |
| Sensory Experience | |
| Distributed Wellness: Leveraging Activity-Based Working Methodolofies for Cognitive Diversity | Melissa Marsh |
| The Relationship Between Childhood Spaces and Memory – Daniel Liebeskind | Ana Mirea |
| Neuroarchitecture Approaching Einföhlung's Theory and an Essay of Constructive Lines | Lori Crizel |
| Residential Interior Form Analyses and Its Impact on Emotion | Maryam Banaei |
| Graffiti, Green Areas and Blank Facades: An Eye-tracker Urban Application | Andrea Ribeiro Gomes |
| Measuring Street Enclosure and Its Influence to Human Physiology | Ercument Gorgu |
| How Three-Dimensional Perception is Facilitated in an Object- Centered Coordinate Frame of Reference | John Shoaff |
| Architecture as a Building Block of our Memory | Ana M Korošec |
| Architecture of Memory or Memory of Architecture | Maria Aslam |
| Investigating Positive and Threat-based Awe in Natural and Built Environments | Hanna Negami,Colin Ellard |
| The Relationship between Architecture and Body Expression: A Pilot Behavioral Study in Virtual Reality | Paolo Presti, Davide Ruzzon, Stefano Lenzi, Fausto Caruana, Giacomo Rizzolatti, Pietro Avanzini, Giovanni Vecchiato |
| Connections Between Creativity, Brain Fog and the Intelligence of the Built Environment; "SPACE WE-Q" | Anat Mor-Avi |
| Catalysts to Learning | |
| Case Study Remodeling Building 15 to "Living 360": We Learn Best in Rich, Well-designed Environments | Mariah Klüsener Pinheiro |
| How Can Different Kinds of Minds Inform Campus Design? Reflections on a Field Experiment | Ann Heylighen |
| Can Grade 6-8 Students Demonstrate Cognitively that the Building's Design Impacts Their Academic Engagement Levels? | Lennie Scott Webber |
| Learning Environments for Creativity: The Impact of Learning Spaces on Student Creativity and Well-being | Mackenzie Sims |
| The Employment of Sensory Design within Urban Educational Environments: A Critical Analysis of the Qatar University Campus | Maryam Al-mohannadi |
| Measurement Tools: Hardware & Software | |
| Eye-Tracking Street Users' Visual Exploration of Buildings Across the Globe | Frank Suurenbroek,Gideon Spanjar |

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| Expert vs. GSR Assessment of Architecture Students' Design Task | Alexandra Mesias, Md. Rakibul Mowla, David Thompson, Bob Condia |
| Modern Architecture: A Direct Expression of TRAUMA of WWI Trench | Ann Sussman |
| Inceptive Perception: Stacking [Un]relat[able] Spaces in Immersive Narratives | Carla Leitao |
| Visual Perception of Architecture in Two-Dimensional Representations: Comparing Selective Attention | Jennifer Shields |
| PERCIBO, Experimental Emotional and Sensory Module of the Environment | María Araya León |
| Pilot Studies of Ecologically Valid Urban Design Experiences for Laboratory-based Mobile Brain/body Imaging | Sidney Newton |
| A Measuring Tool for How Buildings Teach Kindness: Three Specific Intersections of Architecture and Neuroscience | Robin R. Randall |
| Immersive Space: Using Adaptive Kinetic Architectural Design to Regulate Human Emotional States | Dr. Yousefi , Dr. Farzin |
| Exploring Responses to Real and Digital Interior Space using fNIRS – A Comparative Study | Marissa Lindquist |

EXTRAS

| Videos | |
|------------------------------------|--|
| Friday, September 25 12:00am PDT | Moderator: George Christopoulos |
| Friday, September 25 9:00am PDT | Moderators: Laura Wolszon, Kris Mun, Adam Brager |
| COVID-19 Live Discussions | |
| Beyond Intuition | The story behind ANFA's start, a tribute to John Paul Eberhard |
| ANFA Voices | Susan Magsamen, Colin Ellard, Andrea Jelic, Nick Watkins |

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