

# Penn Center for Neuroaesthetics (PCfN)

2019 & 2020 Report





Photo by Stijn te Strake, from Unsplash

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Penn Center for Neuroaesthetics



# Message from the Director



By any measure, 2020 was an ugly year. Most of us were pummeled repeatedly by anxiety, pain, and sadness. The global pandemic raged through our communities. Social sensibilities

fractured and anger erupted into the streets. Across the world, economies sank and nationalists rose. As this year draws to a close, one might find it in poor taste to be preoccupied by beauty and art. Then again, perhaps ugly times are precisely when we need the salve of aesthetics most.

In 2019 I left the security of my position as Chair of Neurology at Pennsylvania Hospital to establish the Penn Center for Neuroaesthetics. This decision involved both professional and financial risk. Professionally, I risked moving from a respected academic job with an endowed chair to a less outwardly prominent position.

Neuroaesthetics is an emerging discipline that is largely unknown to conventional neuroscientists. Financially, traditional funding agencies do not view neuroaesthetics as core to their research agenda. Despite these risks, launching this center was the right decision. It is a gift to nurture a field I am passionate about and to develop an area of research that I believe to be vitally important to our sense of humanity. In part because of our center's work, neuroaesthetics is poised to grow exponentially and have a broad impact across different sectors of society.

In a brief period, ***the Penn Center for Neuroaesthetics has become the international leader of research examining and establishing the biological bases of aesthetic experiences.*** Our visual system carves up the world into people, places, and things. Using this neural organization as a guiding framework, our research has sharpened its focus on the aesthetic experience of people, places, and things, and the extensions of these experiences to morality, wellbeing, and understanding. Our international reach continues to grow. In October 2019, I was inducted as a visiting professor at South China Normal University in Guangzhou where a new program in

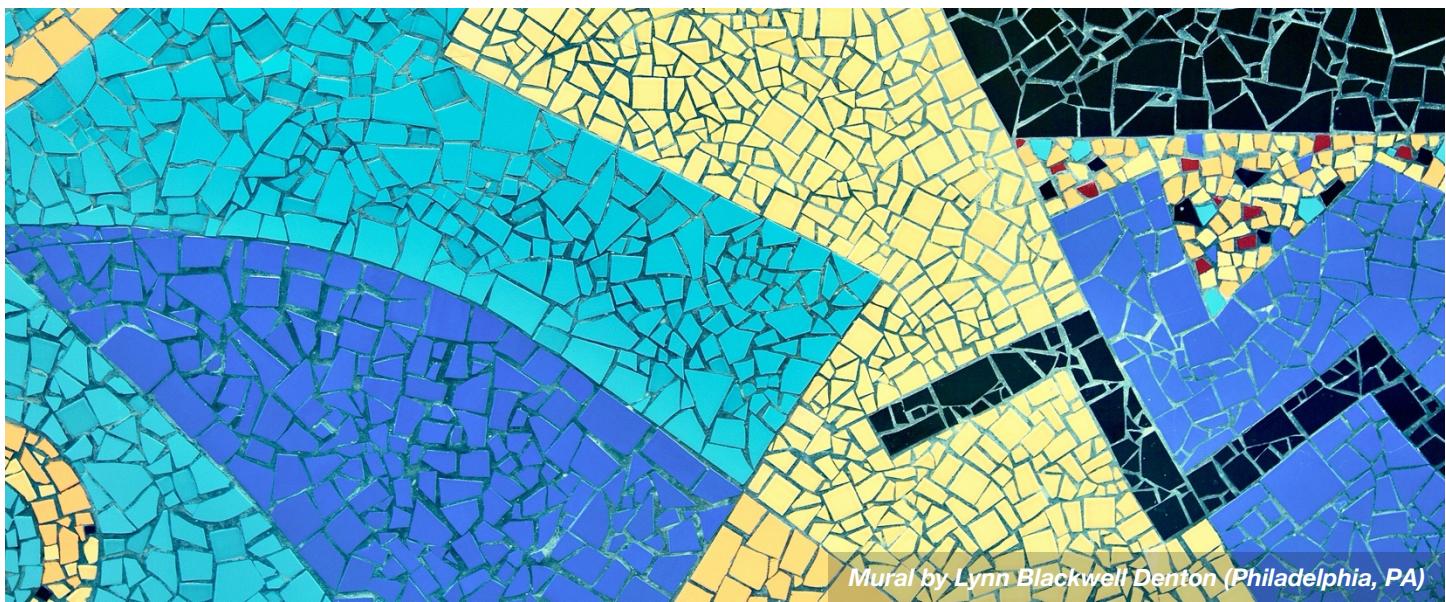
neuroaesthetics is being developed. This relationship adds to our existing collaborations in Canada, Denmark, Singapore, and Spain.

Our mission includes promoting this field of science and serving as a hub for scholars and creative experts interested in the biology of aesthetic experiences. We began realizing this mission by hosting scholars from Cambridge, Guangzhou, and London. We initiated an artist-in-residence program—the first of its kind to bring artists into partnership with a neuroaesthetics research center. Within Philadelphia, we are engaged with the University of the Arts, the Barnes Foundation, and the architecture firm, Ewing Cole, in endeavors ranging from planning future international meetings to designing memory care residential units.

Our outreach and communication efforts to move neuroaesthetics into the scientific mainstream and public awareness have also been successful. Standard disciplinary references such as the 6th Edition of *The Cognitive Neurosciences*, now include chapters on neuroaesthetics and on music. We secured a contract from Oxford University Press to edit a collection of popular science commentaries for a forthcoming book titled *Brain, Beauty, and Art: Essays Bringing Neuroaesthetics into Focus*. Our Psychology Today blog *Brain, Behavior, and Beauty*, which reports research findings to the general public, was viewed more than 32,000 times.

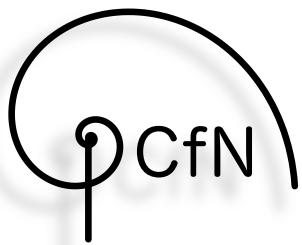
Heading into 2021, ***we face challenges ahead: to sustain the center's experimental research impact in times of physical isolation, to strengthen our national and international bonds when travel is difficult, and to lay strong foundations for financial sustainability under strained economic conditions.*** Recognizing that we cannot meet these challenges alone, we have established an august advisory board: Pauline Brown, Susie Ellis, Katherine Sachs, Rafael Viñoly, and Daniel Weiss. Each board member is a world-renowned expert in aesthetics and its applications to art, architecture, wellness, and commerce. Their counsel will be invaluable, as will your support of our efforts to harness neuroscience in advocating for the fundamental importance of aesthetics values.

A handwritten signature in black ink that reads "Aylen Wattey".



Mural by Lynn Blackwell Denton (Philadelphia, PA)

## About the Penn Center for Neuroaesthetics (PCfN)



The PCfN launched in July 2018 with support from the University of Pennsylvania's Provost Office, The Perelman School of Medicine Dean's office, The Department of Neurology, The Department of Radiology, and The Center for Human Appearance. Ours is the first center in the US—and perhaps the world—dedicated to advancing cognitive neuroscience research in aesthetics.

### Mission

*Advance research in basic and applied neuroaesthetics*

*Educate the next generation of scientists*

*Promote allied interdisciplinary interests*

*Welcome investigators and creative experts*

*Disseminate our science and engage with the arts community*



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## Foundational Research

The brain carves our visual world into people, places, and things. Using this neural organization as a framework, we investigate aesthetic experiences of these domains by asking the following:

### Questions

*What is the nature of beauty and how does beauty relate to morality?*

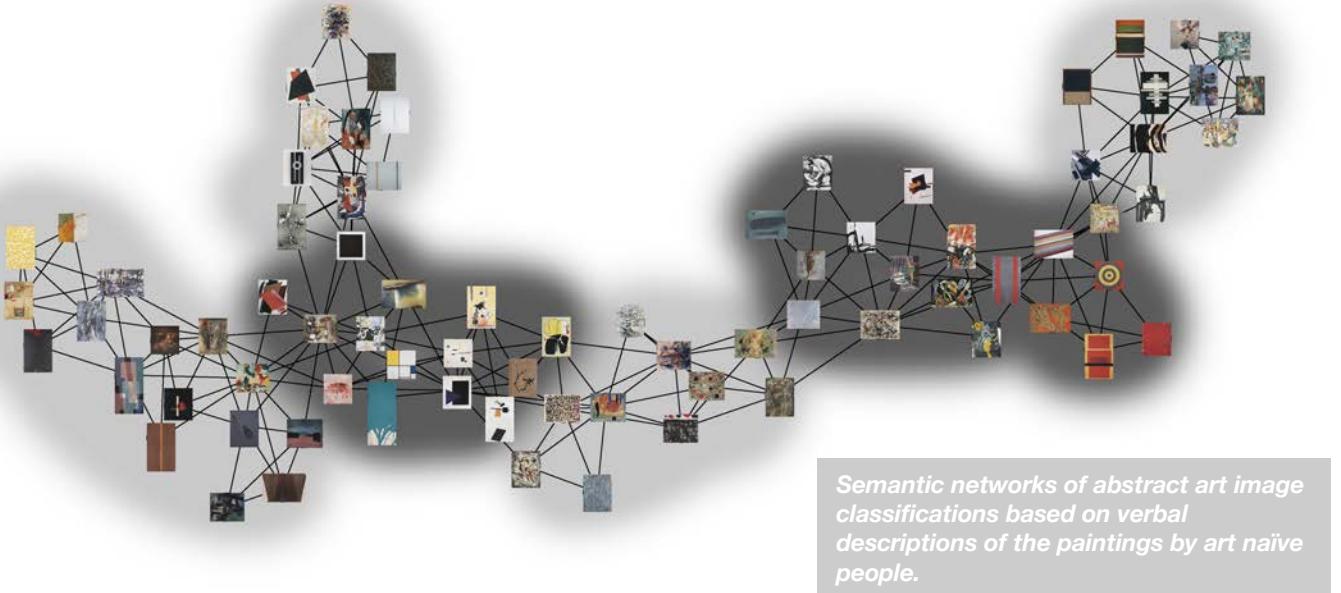
*How does the aesthetics of the built environment affect our sense of wellbeing?*

*What does it mean to be engaged with art and what is art good for?*



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## Impactful Results

Experimental research, by its nature, advances knowledge incrementally. While our conclusions are often provisional and subject to revision, we made several important claims about the aesthetics of people, places, and things (art) over the past two years.

### Findings

*The conflation of beauty and morality means that people with facial anomalies such as scars, birthmarks, and skin cancers are regarded as having flawed character traits.*

*Neural systems involved in empathy contribute to biological mechanisms of dehumanization.*

*Human psychological and neural responses to the built environment distil into three dimensions: coherence, fascination, and hominess.*

*How people describe abstract art, more than the psychophysical visual properties of those images, predicts their preference for art.*



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Photo by Anjan Chatterjee

## Advisory Board

As we navigate uncharted territories, we will be guided by our newly formed advisory board. Each member is a world-renowned expert in aesthetics and its applications. Their counsel on how best to achieve our mission will be invaluable.



**Pauline Brown**

*Former Chairman of North America for LVMH Moët Hennessy Louis Vuitton*

For the past 30 years Pauline Brown has acquired, built and led global premium brands. Pauline formerly was the Chairman of North America for the world's leading luxury goods company, LVMH Moët Hennessy Louis Vuitton, where she provided regional leadership for 70 brands in 5 sectors, including fashion, jewelry, cosmetics, and wines & spirits. Prior to LVMH, she was a Managing Director at the private equity investment firm, The Carlyle Group, where she specialized in consumer and retail investments. Earlier in her career, she held senior executive roles at beauty companies, including Estee Lauder and Avon, and was a Management Consultant at Bain & Company. Pauline serves on several boards, including the Parsons School of Design

and the Wharton Alumni Executive Board. She currently hosts a weekly lifestyle show on SiriusXM, called "Tastemakers," and is the author of the groundbreaking new business book, *Aesthetic Intelligence*, which was published by HarperCollins in late 2019. She received a B.A. from Dartmouth College and M.B.A. from the Wharton School, and she is 2008 Henry Crown Fellow of the Aspen Institute.



**Susie Ellis**

*Co-Founder, Chair & CEO Global Wellness Institute and Global Wellness Summit*

Susie Ellis is the chair and CEO of the nonprofit Global Wellness Institute, considered the industry's leading global research and educational resource. She is also co-founder, chair and CEO of the Global Wellness Summit, the foremost gathering of international business, academic and government leaders in the \$4.5 trillion global wellness economy. Recognized as a leading authority on wellness trends, Ellis is frequently quoted in major news outlets around the world and is a popular speaker at industry events. She sits on numerous academic and industry boards, including the EHL – Swiss Hospitality Management School in Lausanne and the Aspen Brain Institute,



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and is also a member of the World Economic Forum's "Accelerating Health and Well-being Initiative." In addition, Ellis has been a member of the California Governor's Council on Physical Fitness and Sports. She holds an MBA from the University of California, Los Angeles.



**Katherine Sachs**  
*Philanthropist and Art Collector*

Katherine Sachs was an Adjunct Curator at the Philadelphia Museum of Art and now serves as a Museum Trustee, Chair of the Contemporary Art Committee and Co-Chair of the Museum's Campaign. At the PMA, Kathy and her late husband Keith endowed the Contemporary curator, named the gallery dedicated to the work of Jasper Johns and promised a large part of their collection to the Museum. At Penn, Mrs. Sachs is an Emeritus Trustee. She chaired the ICA Board of Overseers from 1998-2009, and with Keith established the Sachs Professorship in Contemporary Art, endowed a visiting professorship in Fine Arts and created the Sachs Guest Curator Program. In 2016, they established The Sachs Program for Arts Innovation.



**Rafael Viñoly**  
*Architect*

Born in Uruguay, Rafael Viñoly settled in New York in 1979 from where he oversees an award-winning practice with projects spanning six continents. Viñoly's work is marked by a sustained structural originality that transcends the passing fads of architectural movements, and he is driven by the belief that the essential responsibility of architecture is to generate the most elegant and logical solution within the economy of each project. He is a member of the American Institute of Architects, the National Academy, the Royal Institute of British Architects, the Japan Institute of Architects, and the Sociedad Central de Arquitectos in Argentina.



**Dan Weiss**  
*President and CEO, Metropolitan Museum of Art*

Daniel Weiss became the fifth President of The Metropolitan Museum of Art in July 2015 and was appointed President and Chief Executive Officer in June 2017. With approximately two million objects in its collection representing more than 5,000 years of artistic achievement, seven million visitors annually, and an operating budget of \$320 million, The Met is one of the largest and most diverse art museums in the world. Previously Weiss served as the 14th President of Haverford College, the 16th President of Lafayette College, and the James B. Knapp Dean of the Zanvyl Krieger School of Arts & Sciences at Johns Hopkins University, where he also served as professor and chair of the History of Art Department. Weiss has written or edited five books and

numerous articles on the art of the Middle Ages, higher education, and other topics. A member of the Council on Foreign Relations, Weiss is Vice Chair of the Board of the Samuel H. Kress Foundation, on the Advisory Board of the Yale School of Management, and a trustee of the Wallace Foundation, the Library of America, the American Federation of Arts, and the Posse Foundation. Daniel Weiss holds an M.A. and Ph.D from Johns Hopkins University, an MBA from the Yale School of Management, and a B.A. from The George Washington University.



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Photo by Anjan Chatterjee

## Invited Talks

Invited talks are one indicator of our reputation and the impact of our work. We have disseminated our research findings to neurology and neuroscience audiences, interdisciplinary humanities programs, technology groups, and student scientific organizations.

**The Aesthetic Brain.** Keynote Address. Bressanone International Neuropsychological Meeting. Bressanone, Italy. January 2019.

**Hidden Aesthetic Brain Responses.** Hershey Medical School, Neurology Grand Rounds. January 2019.

**The Aesthetic Brain.** Swarthmore College, Cognitive Science Colloquium. February, 2019



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**Penn Academy discussion about aesthetics** with Amy Gutmann, Stuart Weitzman, and Rafael Viñoly. Beverly Hills. April 2019.

**Hidden Aesthetic Brain Responses.** Drexel University Creative Art Therapies. May 2019.

**Beauty and Wellness.** Gottlieb Duttweiler Institute. Zurich. May 2019.

**How are Beauty and Morality Related?** Lightning talk by Clifford Workman for the Brainspace Impact Forum. Penn Brain Science Center. June 2019.

**Beauty and the Brain.** Brainspace Impact Forum. Penn Brain Science Center. June 2019.

**The Aesthetic Brain.** Keynote Address at the Gordon Conference on Visualization in Science and Education. July 2019.

**Objective Image Properties Relate Differently to Attractiveness and Beauty Ratings in Art Portraits.** Talk by Gregor Hayn-Leichsenring and Anjan Chatterjee at the Visual Science of Art Conference. Leuven, Belgium. August 2019.

**Historical and Philosophical Background Behind the Search for Objective “Aesthetic” Properties.** Tutorial by Gregor Hayn-Leichsenring at the Visual Science of Art Conference. Leuven, Belgium. August 2019.

**Current Progress in the Neurofields: Neuroaesthetics.** Penn Center for Neuroscience and Society. September 2019.

**The Aesthetic Brain.** Dallas Texas Health Neurology Grand Rounds. September 2019.

**The Right Hemisphere Hypothesis about Metaphor Processing is not Right.** The Amsterdam Metaphor Festival. Amsterdam. September 2019.

**Hidden Brain Responses to the Aesthetics of People and Places (and Things).** Keynote for the JHU Undergraduate Research Symposium. Johns Hopkins University. October 2019.

**The Aesthetic Brain.** South China Normal University. Guangzhou, China. October 2019.

**Hidden Brain Responses to the Aesthetics of People and Places (and Things).** Penn CNS Public Talk Series. Penn Center for Neuroscience and Society. November 2019.

**Hidden Aesthetic Brain Responses.** Duke University Neurohumanities Research Group. November 2019.

**On Mourning and Art.** Panel discussion moderated by Ryann Casey, featuring Lucas Kelly and other artists appearing in the group exhibition “No Cure for Mourning.” Stockton University Art Gallery. December 2019.

**Closing Reception for “you, me, these walls, and our ghosts.”** Talk by Lucas Kelly and Alex Conner (Philly Stewards). Tiger Strikes Asteroid PHL. December 2019.

**The Inaugural Aesthetic Intelligence Summit.** Panel discussion with Pauline Brown. Parson’s School of Design. January 2020.



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**The Aesthetic Brain.** Neurohumanities Forum. Kennesaw State University. February 2020.

**The Aesthetic Brain.** University of Bangor, Wales. Psychology Colloquium. May 2020.

**Aesthetics in Motion: The Beauty of Action Paintings in Parkinson's Disease.** Talk by Stacey Humphries. Centre for Social, Cognitive and Affective Neuroscience at the University of Glasgow. June 2020.

**The Arts, Neuroaesthetics, and Human Flourishing.** Wharton Neuroscience Initiative. June 2020.

**The Aesthetic Brain.** Keynote Address. Walter Reed National Intrepid Center for Excellence Annual Research Forum. September 2020.

**The Aesthetic Brain:** Anjan Chatterjee on Beauty, Buildings, and Art. Inaugural Talk followed by discussion with philosophers Jesse Prinz and Barbara Montero. Creative GC: Art and Science Connect (CUNY). October 2020.

**Reward, Motivation, and Challenges to Learning.** Global Digital Educational Challenge. Convergence Tech. October 2020.

**The Aesthetic Brain.** Penn Association of Senior and Emeriti Faculty (PASEF), lunchtime talk series. November 2020.

**The Aesthetic Brain.** Keynote Address, Sigma Xi Annual Research Forum. November 2020.

**The Aesthetic Brain.** Temple University Department of Neurology Grand Rounds. December 2020.



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# Media

Publicizing neuroaesthetics findings is an important part of our outreach efforts. We have been featured in popular media broadcasts and in print interviews. We also leverage our blog posts to directly inform the public about our ideas and research.

## Video: TV, Film, and Web



### Beauty, Explained

Episode for "Vox: Explained" on Netflix, 2019

Beauty may be in the eye of the beholder, but what exactly makes things such as art and architecture aesthetically pleasing, and why do we like looking?

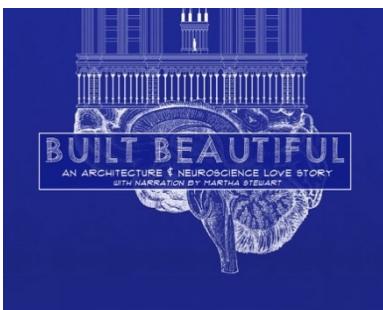


### What is Philosophy of the Arts?

Episode for "Closer to Truth" on PBS, 2019

Other episodes featuring the PCfN:

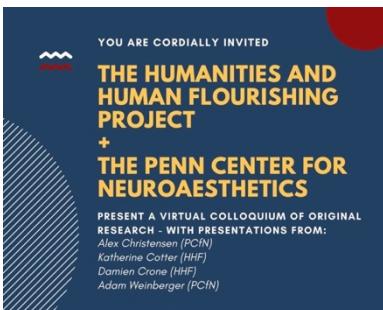
[Art and the Philosophy of Mind](#), [Art and Epistemology](#), [Aesthetic Cognitivism II: Intellectual Foundations](#), [Aesthetic Cognitivism IV: Research Methodology](#), [Neuroaesthetics: How the Brain Explains Art, Cognition and Culture \(Part 2\)](#), [Aesthetics: Physics and Neuroscience](#), [When Brains Go Bad \(Part 2\)](#)



### Built Beautiful: An Architecture and Neuroscience Love Story (with Narration by Martha Stewart)

Film written and directed by Mariel Rodriguez-McGill, premiered 2020 at the Denver Film Festival

Neuroscience gives architects a new lens through which to consider the built environment's influence on health and wellness.



### HHF + PCfN Colloquium

Virtual colloquium hosted by the HHF and PCfN, 2020

Includes introductory remarks by Anjan Chatterjee and lightning talks by PCfN postdocs Alex Christensen (Estimating Factors with Psychometric Networks) and Adam Weinberger (Examining the Relationship Between Neural Modularity and Academic Achievement).



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## [YouTube Channel: Penn Center for Neuroaesthetics](#)

Continually updated with new content related to work at the PCfN—includes a [Neuroaesthetics Playlist](#)

## **Audio: Podcasts and Radio**

### **Beauty and Neuroaesthetics**

Minding the Brain, February 2019

### **"Beauty" in Art and Nature: A Search for New Definitions**

WYPR: Midday, March 2019

### **Beauty and the Brain: Interview with Anjan Chatterjee**

Tastemakers, June 2020

## **Print**

### **Can the New Penn Center for Neuroaesthetics Unlock the Science of Beauty?**

Philadelphia Magazine, March 2019

### **The Sachs Program Announces 2019 Grants, Marks One-Year Anniversary**

Penn Today, May 2019

### **Adults Taking Cognitive Enhancers to Boost Mental Abilities at Work Considered Largely Acceptable by the Public**

Penn Medicine News, May 2019

### **The Majority of People Are Fine With Brain Doping, As Long As You Don't Call It That**

Forbes, May 2019

### **Seeing Disfigured Faces Prompts Negative Brain and Behavior Responses**

Penn Medicine News, May 2019

Reprints: [ScienceDaily](#), [Neuroscience News](#), [Medical Xpress](#), [News Medical](#)

### **Aesthetics in the Brain**

Behind Your Behavior, July 2020

### **Confronting Implicit Biases**

WHYY: The Pulse, September 2020

### **"Wasn't She Crazy?"**

President Lincoln's Cottage: Q & Abe, October 2020

### **We Have A Subconscious Negative Brain Response To Disfigured Faces Penn Study Finds**

Philly Voice, May 2019

### **Humans Are Biased When It Comes To Beauty, Study Says**

New York Post, May 2019

### **Neuroaesthetics—The Science of Pleasure: An Interview With Dr. Anjan Chatterjee**

Brain World, July 2019

### **Everyone Wants to Instagram the World's Most Beautiful Canyon. Should They?**

Vox, July 2019

### **Five Insights Into How the Brain Works**

Penn Today, August 2019

### **Eye of the Beholder**

The Pennsylvania Gazette, August 2019



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## URS Invites Students to Learn About Neuroaesthetics

The Johns Hopkins Newsletter, October 2019

## Beauty Is in the Hand and Not the Eyes of the Beholder

Science X, November 2019

## Neuroscience and Beauty: How to Create an Immediate Connection With Your Audience

MarTech Today, December 2019

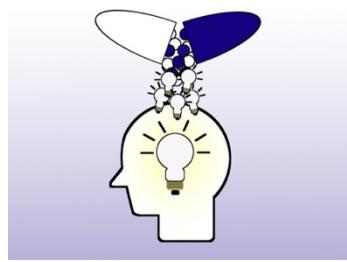
## Do You Like Weird Art? Blame Your Brain

Science, February 2020

## Post-lockdown Working Poses Challenges for People With Disfigurements

Financial Times, July 2020

## **Blog Posts on Psychology Today: Brain, Behavior, and Beauty**



### Cognitive Enhancement Is Okay, But Wait Until You Graduate

July 2019

People are more accepting of the use of "smart pills" at work

than in school or sports, and when the pills are framed with positive rather than negative metaphors.

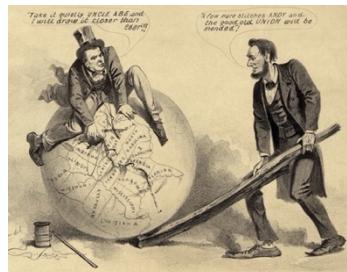


### Scarring Your Children With The Lion King

August 2019

The Lion King is an opportunity to talk to your children about

fairness.



### Metaphorically Minded

August 2019

Metaphors are fundamental to human thought. How do they work, and why don't

we notice them?



### Are You Moved by Beauty?

September 2019

Beauty is in the hand more than in the eye of the beholder.



### Does Impaired Movement Impair Thinking About Movement?

October 2019

Thought and language in early Parkinson's disease teaches us about the relationship between body and mind.



### GPS in the Brain

November 2019

London taxi drivers with extensive knowledge of the city's streets have larger than average hippocampi. Is the same true for better than average navigators?



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**Why Do People Enjoy Meaningless Splatters of Paint?**  
January 2020

Abstract art does not make reference to anything meaningful in the world. Does that mean that people's preferences are driven by the visual forms of these images? Maybe not.



What are the core psychological and neurological responses to architectural interiors?



be a salve for wounded times?



little bit of relevant prior information is rewarding.

**What Is Art Good For? [Pt. 1]**  
April 2020

Many shelter in place during the pandemic only going out for walks. Can street art

Abstract art does not make reference to anything meaningful in the world. Does that mean that people's preferences are driven by the visual forms of these images? Maybe not.

Abstract art does not make reference to anything meaningful in the world. Does that mean that people's preferences are driven by the visual forms of these images? Maybe not.



**What Is Art Good For? [Pt. 2]**

June 2020

America convulses in protests against police brutality towards Black people. In the

protests lies the demand: Can you hear us now?



**Talk the Walk**

November 2020

Ultimate frisbee players offer insight into communicating directions. They anchor words to body- or

environment-centered reference frames, suggesting a speed-stability tradeoff.



**Brains on Metaphor**

November 2020

Traditional theories of metaphor comprehension implicate the right hemisphere as playing a privileged

role. Our findings suggest that these theories are likely to be wrong.



**Smart Pills for Smart Work?**

December 2020

Many healthy students and workers take medications to improve their

performance. How do people feel about this use of pharmacologic enhancement?



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## Selected PCfN Member Highlights

As part of our mission to engage with the arts community, we hosted Lucas Kelly as our inaugural Artist-in-Residence. We hope to sustain this program into the future. In a year when many universities imposed a moratorium on hiring new faculty, Yoed Kenett and Franziska Hartung were offered excellent academic positions. Through our trainees, we continue to seed neuroaesthetics research internationally. Finally, despite a harsh funding climate, Cliff Workman received an NIH training grant. This award is an important step forward in his promising career.



**Lucas Kelly**  
*Artist-in-Residence*

Lucas Kelly is our inaugural artist-in-residence, supported by Penn's Sachs Program for Arts Innovation. Kelly's work has been exhibited in museums and galleries across the United States and throughout Europe. His work has been the subject of several solo and group exhibitions, most notably in the survey of abstract painting "The Painted World" at PS1 Museum of Modern Art. A full professor in Visual Arts at Mercer County Community College, Kelly holds a BFA from Maryland Institute College of Art and a MFA from Mason Gross School of the Arts. He is a member of the Tiger Strikes Asteroid network of artists, and his studio is in Philadelphia. As part of his residency at Penn he has taught drawing to medical students, conducted studio visits with fine arts majors, and lectured in the visual studies. Our collaborative exhibit, planned for the Esther Klein Gallery and delayed by the pandemic, will consider emotions involved in aesthetic engagement informed by research conducted at the PCfN and discussions in which he is an integral participant.



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**Yoed Kenett**  
*Postdoctoral Researcher*

Yoed received his PhD in neuroscience from Bar-Ilan University, Israel. His research involves computationally and empirically investigating the structure of semantic networks as implementing cognitive processes in typical and clinical populations. He applies network neuroscience methods to study creativity and aesthetic experiences. A few of ongoing projects address the conceptual representation of beauty and well-being, aesthetic emotions, and the neural dynamics of generating and evaluating creative ideas. In the summer of 2020, he accepted a position as accepted the position as a Senior Lecturer (Assistant Professor) at the Faculty of Industrial Engineering and Management at the Technion – Israel Institute of Technology.



**Franziska Hartung**  
*Postdoctoral Researcher*

Franziska received her PhD degree in cognitive neuroscience from the Max-Planck Institute for Psycholinguistics and the Radboud University (Donders Institute for Brain, Cognition, and Behaviour) in the Netherlands. Her research centered around the question of how context shapes meaning and experience and its underlying neural mechanisms. She worked on the neural underpinnings of responses to literary texts conducted exploratory work on facial appearance and stigma. In December 2020, she left the PCfN to become an Assistant Professorship in the Psychology Department at the University of Newcastle, England.



**Cliff Workman**  
*Postdoctoral Researcher*

Cliff received his Ph.D. from the University of Manchester in England, where he investigated relations between moral cognition and emotions and the pathophysiology of major depression. He came to the PCfN after being a postdoctoral scholar in the Social Cognitive Neuroscience Lab at the University of Chicago under the supervision of Professor Jean Decety where he investigated mechanisms underpinning political polarization and support for ideologically-motivated violence. At the PCfN he is investigating the intersection of beauty and morality, for which he was awarded a competitive NIH NRSA award titled: The good, the bad, and the different: Understanding stigma towards people with facial differences.



## PCfN Members

### Core Faculty and Staff

Anjan Chatterjee, Director  
Eileen Cardillo, Associate Director  
Joe Ptacek, Center Manager  
Emily Urban, Lab Manager

Yoed Kenett  
Nate Klooster  
Adam Weinberger  
Steve Weisberg  
Cliff Workman

### Student Researchers

Nadir Bilici, Medical Student  
Alex Coburn, Graduate Student  
Claire Dinh, Graduate Student  
Dexian He, Graduate Student  
Charlie Siegel, Undergraduate Student  
Kelly Porter, Undergraduate Student  
Yuchao Wang, Undergraduate Student  
Zack Zapatero, Medical Student

### Artist-in-Residence

Lucas Kelly

### Postdoctoral Researchers

Alex Christensen  
Erin Conrad  
Franziska Hartung  
Gregor Hayn-Leichsenring  
Stacey Humphries



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## Visitors

Many neuroaesthetics researchers find themselves working in isolation. One of our goals is to serve as a hub for researchers and creative experts who wish to engage directly with a community focused on the biology of aesthetic experiences.



### Beatriz Calvo-Merino

*Cognitive Neuroscientist—City, University College of London*

Dr Beatriz Calvo-Merino is a Cognitive Neuroscientist working at the Cognitive Neuroscience Research Unit (Psychology Department. City, University of London, UK). She trained at University College London (UK) and Universidad Complutense de Madrid (Spain). Her research addresses the neural effects of sensorimotor experience on action observation using dance experts. She integrates classical neuroscientific methods (i.e. fMRI, TMS, EEG) and sensorimotor expertise, with collaboration with performing artists (to further understand notions of embodied aesthetics and embodied cognition).



### Alex Coburn

*Graduate Student—Cambridge University*

Alex Coburn's research explores how architectural design impacts psychological health, with a particular focus on evaluating the potential cognitive and emotional benefits of biophilic, or nature-like, built environments. As a visiting researcher at Penn, he conducted experiments to measure neuropsychological responses to architecture and to investigate the pathways by which external environmental features influence internal psychological experiences.



### Dexian He

*Graduate Student—South China Normal University*

Dexian He is interested in the role of experience in forming individual face preferences. At the PCfN, her projects focused on how viewer age and subject age interact to affect the perception of facial attractiveness. She is a second-year doctoral student at the School of Psychology, South China Normal University. She received her master's degree from SCNU in 2018 where she investigated the relation between obesity and cognitive control, and how it can be modulated by aesthetics of food.



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# Collaborators

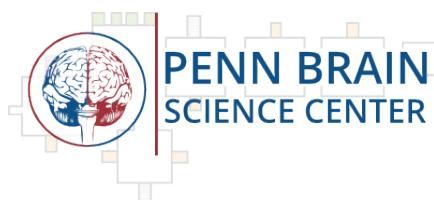
## Affiliated Faculty at Penn

Coren Apicella, School of Arts & Sciences  
Danielle Bassett, School of Engineering  
Liz Brannon, School of Arts & Sciences  
John A. Detre, Perelman School of Medicine  
Martha J. Farah, School of Arts & Sciences  
Gary Hatfield, School of Arts & Sciences  
Elizabeth Johnson, Wharton School of Business  
Joe Kable, School of Arts & Sciences  
Michael Leja, School of Arts & Sciences  
Ken Lum, Weitzman School of Design  
Allyson Mackey, School of Arts & Sciences  
Matt Neff, Weitzman School of Design  
James O. Pawelski, School of Arts & Sciences  
Rebecca L. Pearl, Perelman School of Medicine  
Michael Platt, Wharton School of Business  
Megan S. Ryerson, Weitzman School of Design  
Frederick Steiner, Weitzman School of Design  
Nina Strohminger, Wharton School of Business  
Jesse Taylor, Children's Hospital of Philadelphia  
Orkan Telhan, Weitzman School of Design  
Ian Versteegen, School of Arts & Sciences  
Linton A. Whitaker, Perelman School of Medicine

## National and International Collaborators

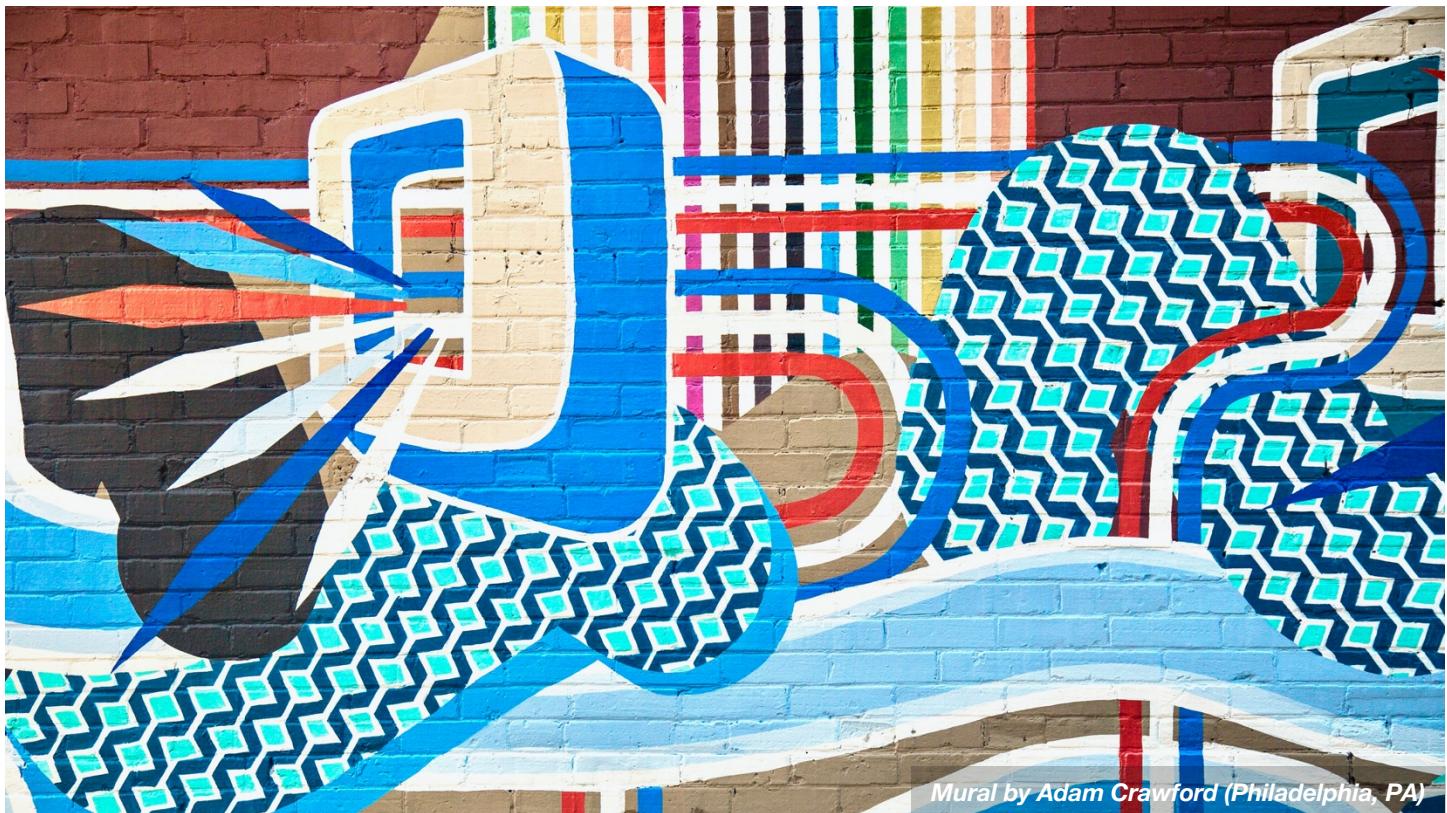
Amy Belfi, Missouri Univ. of Science & Technology  
Beatriz Calvo-Merino, City, University of London  
George Christopoulos, Nanyang Tech. Univ.  
Jonathan Fineberg, University of the Arts  
Xianyou He, South China Normal University  
Alexander Kranjec, Duquesne University  
Helmut Leder, University of Vienna  
Marcos Nadal, University of the Balearic Islands  
William M. Perthes, The Barnes Foundation  
Martin Skov, Copenhagen Univ. Hospital Hvidovre  
Oshin Vartanian, University of Toronto  
Edward A. Vessel, Max Planck Inst. for Empirical Aesthetics

## Affiliated Groups



Penn Center for Neuroaesthetics





## Peer-Reviewed Publications

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# Financial Support



We wish to harness neuroscience in advocating for the vital importance of aesthetics values. Moving through uncharted scientific territory is difficult when traditional funding sources are cautious in the research agendas they promote. Philanthropic gifts are critical to realizing our vision.

For this fledgling field, **your gift** makes a big impact on advancing our understanding of how appearance affects the way we treat each other, how the built environment affects our sense of wellbeing, and why art at every level nourishes our deepest sense of humanity.

## Grants

Cliff Workman received an NIH training grant, titled: *The Good, the Bad, and the Different: Understanding Stigma Towards People with Facial Differences*. This work focuses on the intersection of aesthetic and moral values as related to facial appearance.

Anjan Chatterjee received a grant from the Templeton Religion Trust titled: *Semantic Space of Aesthetic Cognitivism*. This work takes an interdisciplinary approach to investigating how engagement with art can promote human understanding.

Anjan Chatterjee and Eileen Cardillo received an *Extended Artist Engagement* grant from the Sachs Program for Arts Innovation to host Lucas Kelly as the PCfN's inaugural Artist-in-Residence.

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