

## SMART FESTIVAL 2014

**FRIDAY, October 24 @LITE Center**

**6 pm** Charles E. Richard, "*In the Mind of the Maker: On Brain Science & Boat Building*"

With video samples from an upcoming documentary film on the topic, "In the Mind of the Maker" explores the curious science behind creativity. The mysteries surrounding memory, imagination, and mental imagery have been debated by philosophers and psychologists for centuries; now that modern neuroscience is weighing in, some of those mysteries are beginning to unravel. And, quite unexpectedly, it turns out that the story of an elderly master boat builder from Louisiana's swamps could provide some of the clearest insights into them.

**Bio:** C.E. Richard has written and produced numerous acclaimed documentary films for PBS, most of them set in his native French Louisiana. As the writer/ director for 'In the Mind of the Maker,' his current research interests include cognitive neuroscience and visualization. This year he was honored as "Distinguished Professor" at UL Lafayette, where he directs the Center for Moving Image Arts.

**7 pm** Opening ceremony.

**7.15 pm** Joseph E. Ledoux, "Emotion, Memory, and the Brain"

We are our memories. To understand memory is thus to understand much of what makes an individual who they are. In the past several decades, great strides have been made in unlocking the secrets of memory in the brain. We now know that memory is not a unitary process. Indeed, there a variety of memory systems, some that give rise to conscious memories that we can reflect upon and that allow reminiscence, and others that are formed, stored, and used non-consciously. Memoires about emotionally significant events are a particularly good way to illustrate these differences. For example, in a situation of danger, cues present are transmitted to the brain area called the hippocampus, and stored there in a way that later allows conscious retrieval about the dangerous event. At the same time, some of these cues also reach the amygdala, where memories about the cues are stored in such a way as to allow later encounters with the cues to elicit behavioral and physiological responses that help the brain and body anticipate danger and thus increase chances of survival. These processes function seamlessly in our minds but separately in our brains.

**Bio:** Joseph LeDoux is the Henry and Lucy Moses Professor of Science at NYU in the Center for Neural Science, and he directs the Emotional Brain Institute of NYU and the Nathan Kline Institute. He also a Professor of Psychiatry and Child and Adolescent Psychiatry at NYU Langone Medical School. His work is focused on the brain mechanisms of memory and emotion and he is the author of *The Emotional Brain and Synaptic Self*. LeDoux has received a number of awards, including the Karl Spencer Lashley Award from the American Philosophical Society, the Fyssen International Prize in Cognitive Science, Jean Louis

Signoret Prize of the IPSEN Foundation, the Santiago Grisolia Prize, the American Psychological Association Distinguished Scientific Contributions Award, the American Psychological Association Donald O. Hebb Award. LeDoux is a Fellow of the American Academy of Arts and Sciences, the New York Academy of Sciences, and the American Association for the Advancement of Science, and a member of the National Academy of Sciences. He is also the lead singer and songwriter in the rock band, The Amygdaloids.

## **Saturday, October 25 @LITE Center**

**11-4 pm**      *Museum on the Move (MoM)*

**11-2 pm**      “*Skeleton Stories: What Your Skeleton Says about You*” (Forensic Anthropology)  
presented by LSU Faces Laboratory

In the forensic anthropology lab, come learn about the human skeleton, how it is different from other mammals, and how anthropologists can use the skeleton to recreate what a person might have looked like; includes activities for all ages. There will be two short presentations at 12 and 1 pm.

**11-4 pm**      *Mirror of Fear*  
presented by Lafayette Science Museum in collaboration with LITE

**11-4 pm**      *Earth is Art*  
Presented by Brent Yantis and staff at NASA Regional Application Center

Satellite imagery can tell us a lot about our environment. In this exhibition, working with the USGS "Earth is Art" program, utilizing NASA Landsat Satellite Imagery we have comprised images that we hope will excite the imagination and entertain your creative fancies.

**1-4 pm**      *Make a friend with a robot*

Members from Team Phoenix (ages 9-14), a First Lego League robotics team based at UL Lafayette, will provide hands-on robotics activities for children. Visitors can also learn more about FLL, a robotics youth program that is designed to get children excited about science and technology. FLL combines the engineering challenge of a robotics competition with real-world problem solving and inventing.

**11-4 pm**      SolCell Mobile Device Charging Station  
presented by Mallory Gaspard, Episcopal School of Acadiana

SolCell Mobile Device Charging Station is a student designed, student built, charging station for cell phones and tablets. SolCell, designed for placement in parks and libraries, is solar powered and equipped with four USB ports to accommodate a wide variety of devices. Aside from providing charging convenience, the SolCell Mobile Device Charging Station raises sustainability awareness throughout its users and the community.

***Science of Magic presented by the RPA College of Sciences departments and Schools***

- 11-4 pm** Biology: The genetics of “Potato Head”,  
Presented by Lewis Deaton  
A fun hands-on activity that will simplify complex genetic concepts using the familiar toy, “Mr. Potato Head”. Inherit chromosomes with particular types of genes and figure out which traits Mr. Potato Head will exhibit. Reproduce and see what offspring will look like!
- 11-4 pm** `Exploring Mathematical Topics Through Visualization'
- 11-4 pm** CACS: Monitoring Levee Water Levels on a 3D Screen,  
presented by Christoph W. Borst, Raju Gottumukkala  
  
We show historic storm surge data from sensors placed along levees. Visitors can view water levels and plots arranged in a terrain map of the New Orleans region. The view is presented on a large 3D screen and is controlled from a smartphone. The software was developed for viewing, analyzing, and predicting water levels as part of a project in the Center for Visual and Decision Informatics (CVDI).  
  
Students: Nicholas Lipari, Mores Prachyabrued, Siva Ramakrishna Reddy Venna
- 11-4 pm** Physics showcase: rocket launch, sweat dreams on the nail bed, Sun through the telescope and more...
- 11-4 pm** Geosciences showcase: slicing rocks, what walking and oil exploration have in common
- 11-4 pm** Chemistry showcase: things that go Boom...Spectacular show of noise and fireworks

## **Short conversations with artists and scientists**

### **12-12.30 pm** *Making of Oiseaux Tristes(Sad Birds)*, Yeon Choi, College of Art

Yeon Choi will talk about how the computer-generated dancer and birds in *Oiseaux tristes* were created. *Oiseaux tristes* is a 5 minutes animation that interfuses art, science, music and dance. This piece is inspired by Maurice Ravel's *Oiseaux Tristes* which is one of his five movements in *Miroirs*.

Bio: Yeon Choi received her B.F.A. and M.A. in Painting from Ewha University in Seoul, Korea, and an M.F.A. in Computer Arts from University of Massachusetts at Amherst. She is currently an Associate Professor in the Visual Arts department at the University of Louisiana at Lafayette. Her filmography includes *Confessions* (1997), *Media, Metaphor, Non-Locality* (2001), *Objects of My Obsessions* (2002), *The Labyrinth* (2002), *The Fly* (2003), *Sandstorm* (2003), *The Thief* (2004), *The Destroyed Room* (2005), *Ever After* (2006), *Learning to Play "How High the Moon"* (2006), *After Swann* (2012), and *Oiseaux tristes* (2014).

### **12.30-1 pm** *The Importance of the "Beauty Shot" in Science*, Scott France, Biology

Great images can inspire us. Great images of the beauty, complexity and wonder of biology do not just amaze and entertain, but lead naturally to questions of What? How? Why? And in so doing we have planted the seeds for the future scientist. I will show spectacular images and art from deep-sea research expeditions that are being used to engage the public in exploring the mystery of the deep, and developing an appreciation and understanding of our oceans resources.

### **1-1.30 pm** *History of Earth in 15 min*, Carl Richter, Geosciences

The Earth is about 4.6 billion years old, its oldest materials being 4.4 billion-year-old zircon crystals from Australia, and the oldest remains of life are blue-green algae 3.8 billion years old. This presentation will investigate the history of our planet and its live forms from the earliest geologically violent times which suffered constant bombardment from meteorites to today.

### **1.30-2 pm** *How listening to Mother Nature might save your hearing*, Glen M Watson, Biology

Always listen to Mother Nature! Every living creature has a story to tell; all we have to do is listening. Who would have thought that studying sea anemones could give us insight into a treatment for deafness? Sea anemones, the simplest animals to possess a nervous system, detect prey using cells that are very similar to cells in our ears that detect sounds. Unlike our hearing

that can be permanently damaged by sudden loud noise, sea anemones can repair damage. Will you listen to their story?

**2-2.30 pm** *The Beginning of the Universe and the Compelling Case for Cosmic Inflation*, James Dent, Physics

**2.30-3 pm** *Artistic Expression by Scientists - Artists Inspired by Science*  
John Meriwether, Physics

Some examples will be presented of scientists finding aesthetically pleasing images or constructions in the course of their research or study. Likewise artists may be challenged to express scientific ideas in media not usually considered scientific.

**3-3.30 pm** *Louisiana's Coastal Loss: Causes and Solutions*,  
Jenneke M. Visser,  
Associate Director Institute for Coastal Ecology and Engineering

Louisiana has lost over 1800 square miles of coastal wetlands in the last century. The causes for this loss are complex, but the main problem is that soil building does not keep up with apparent sea-level rise. Sustainable wetland restoration efforts need to address this cause of wetland loss.

**7 pm @ Blue Moon** *Half-Full Duo presents the brain music gig*

Joe LeDoux and Colin Dempsey are Half-Full, exactly half of The Amygdaloids, a NY City based band composed of scientists who play songs about love and life peppered with nuggets about mind and brain and mental disorders. The band lands somewhere in the sonic space between country, rock, and psychedelia, with influences that include: The Byrds, Dylan, Hendrix, Pink Floyd, The Beatles, and Wilco. Joe LeDoux, the song-writer, hails from Eunice, LA, and also cites Rod Bernard, The Greek Fountains, Little Bob, Bobby Bare, Johnny Cash, and Dennis Magee as having intangibly shaped his perception of music. LeDoux and Dempsey play acoustic versions of The Amygdaloids songs from their studio albums.