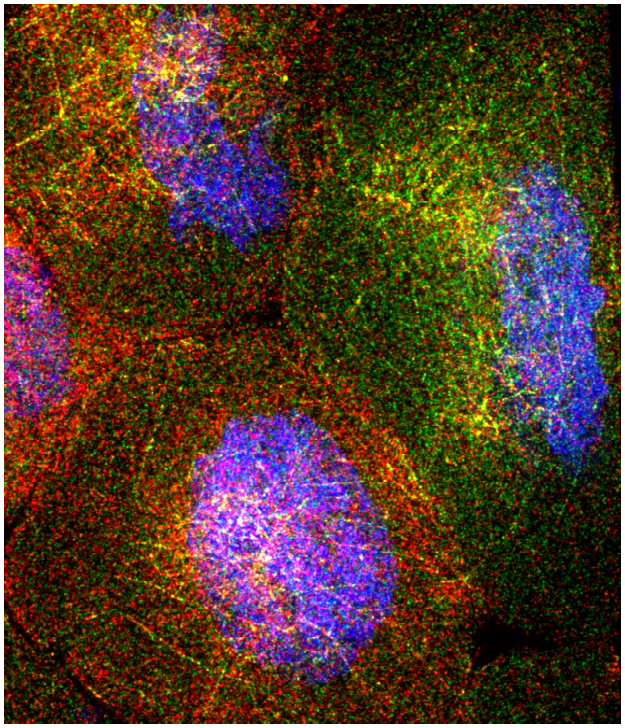
Capturing the fleeting beauty in Science – The Princeton Art of Science Exhibition

The pursuit of the unobserved and the unfathomable in scientific research often affords the scientist glimpses of unrivaled visual experiences. The Princeton University Art of Science exhibition provides an avenue where scientists have the opportunity to present their images obtained during their research. The exhibition helps to spread awareness of the scientific technique and the artistic brilliance that research is replete with, to artists as well as to the common demographic. The exhibition attempts to forge a strong connection between Art and Science. The exchange with artists reveals a different way for scientists to visualize and contemplate their own research.

The Princeton Art of Science exhibit will be in its seventh iteration in 2017. From starting its journey in 2005, with presenting the works created by the Princeton community, the exhibition has grown not only in its size but also appeal. A quirky feature of the exhibition are the awards of the top three submissions decided on by an expert jury. The prizes reflect the golden ratio in their amounts, a nod to the historical aesthetic sense.

We, at JUnQ, express our gratitude to the Princeton Art of Science exhibit, who have been kind and generous to share few of the submissions from past galleries. We wish them success for the 2017 exhibition which opens May 5, 2017 and for future exhibits.

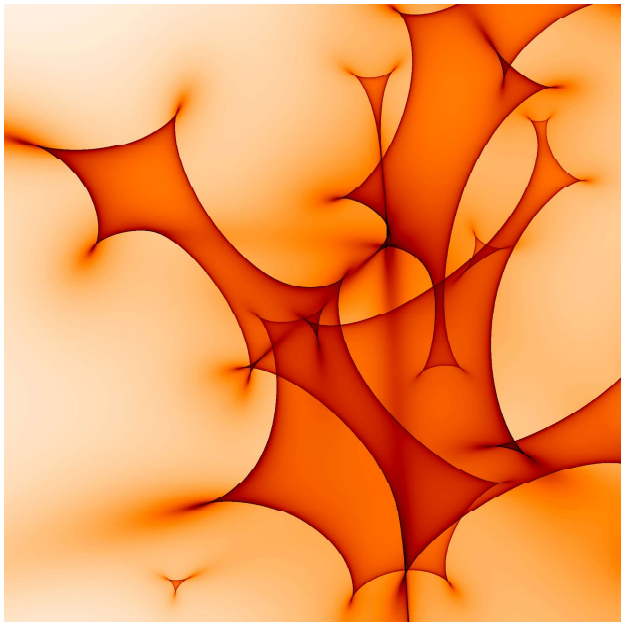
— Soham Roy



MESSENGER MESHWORK (2013)
People's First Place
Shawn C. Little, Kristina S. Sinsimer, Elizabeth R. Gavis and Eric F. Wieschaus
Department of Molecular Biology

The fruit fly ovary consists of about 100 egg chambers. Each chamber contains 15 "nurse cells." These surround the oocyte, or egg cell, which ultimately will develop into a baby fruit fly. The nurse cells synthesize RNA molecules that are ultimately deposited into the oocyte.
Here we see four nurse cells. Each red or green dot is an individual RNA molecule, which is produced from DNA (shown in blue). The RNA molecules intermingle on a threadlike network that allows them to move from one nurse cell to another and then into the developing egg (which we don't see in this image).

Image and Caption : Shawn C. Little, Kristina S. Sinsimer, Elizabeth R. Gavis, Eric F. Wieschaus, Princeton Art of Science



LIGHT DEFLECTION 2b (2009)
Joachim Wambsganss
Department of Astrophysical Sciences

According to Einstein's Theory of Gravity, a ray of light is attracted by a clump of matter. As a consequence of "gravitational lensing", the light ray changes its direction from a straight line by a minute amount when it passes close to a cosmic object. Stars and planets in our Milky Way or in other galaxies can act as "microlenses": They focus the light of a background source in a very characteristic way. The main effect is a time-variable magnification of the background source due to relative motion. In our research, we simulate the effects of light deflection by tracing light rays backward through a field of lensing objects and calculating their deflection. The colors in the resulting two-dimensional maps in the "source plane" reflect the density of light rays, they indicate the magnification of the background source as a function of its position. The sharp "caustic lines" are locations of very high magnification. When a background star moves across such a pattern, we can measure its variable brightness with our telescopes and deduce properties of dark matter or discover extrasolar planets. Figure 2b: This microlensing pattern indicates the magnification of a distant "quasar" as a function of its position; it is produced by the light deflection of many stars in an intervening galaxy. (Zoom of "Light Deflection 1")

Image and Caption : Joachim Wambsganss, Princeton Art of Science