Science News — April 26, 2014

Dr. Matt Bobrowsky
1-443-812-5466
matt@msb-science.com
http://www.linkedin.com/in/mattbobrowsky

Life Science:

Human and dog brains both have dedicated 'voice areas'

The first study to compare brain function between humans and any non-primate animal shows that dogs have dedicated voice areas in their brains, just as people do. The researchers also noted striking similarities in the ways the dog and human brains process emotion-causing sounds. In both species, a particular area of the brain was more active with happy sounds than unhappy ones. Researchers were most struck by the common response to emotion across species. The findings suggest that voice/sound areas evolved at least 100 million years ago, the age of the last common ancestor of humans and dogs. It also offers new insight into humans' unique connection with our best friends in the animal kingdom and helps to explain the behavioral and neural mechanisms that have made this alliance so effective for tens of thousands of years. (Follow the link below to see interesting photos of dogs in MRI machines, which provide non-invasive testing methods.)
http://www.eurekalert.org/pub_releases/2014-02/cp-had021114.php

Earth Science (interdisciplinary with Life Science and Science & Society)**:**

Nitrogen pollution, climate and land use: Why what we eat matters

A new report provides an assessment of what would happen if Europe were to decrease its consumption of meat and dairy products. It shows how much cutting down on meat and dairy in our diets would reduce nitrogen air and water pollution, and greenhouse gas emissions, while freeing up large areas of farmland for other purposes such as food export or bioenergy.
http://www.sciencedaily.com/releases/2014/04/140425093605.htm

Physical Science:

Scientists Create Fuel From Seawater

Scientists created fuel from seawater by extracting the hydrogen and carbon dioxide (CO_2, also present in the ocean in large quantities) and converting them into liquid hydrocarbons, which can be burned as fuel. One exciting aspect of this breakthrough is that it could eliminate the dependence on fossil fuels, which are getting harder to obtain. Also, the fuel is "carbon neutral," which means that the same amount of CO_2 will be produced as was extracted from the seawater. No chemical pollutants are created. Also, if the systems can be installed inside ships,

they will be able to manufacture their own fuel and always remain operational.
http://www.dogonews.com/2014/4/21/us-naval-research-scientists-create-fuel-from-seawater

Astronomy:

White Dwarf Star Acts as a Lens for its Sun-Like Companion

At least two thirds of stars are in binary star systems, where two stars revolve around each other. Astronomers have found one of these binaries where one star is a compact "white dwarf" star. (The sun will become a white dwarf in about five billion years.) A white dwarf has about the sun's mass but is only the size of the earth, so it is very compact and dense. In the binary system, the white dwarf star distorts and magnifies the light from the other more sun-like star. This effect is predicted by Einstein's General Theory of Relativity.
https://student.societyforscience.org/article/dead-star-makes-lens-its-companion

Science & Society

How to Limit the Need for Pesticides

Even low levels of pesticides can cause behavioral problems in children, trouble concentrating, or even cause cancer. The good news is that we can reduce our reliance on pesticides in various ways. We can eat organically grown foods. Gardeners or farmers can release ladybugs or other natural predators onto their plants. There, the good bugs munch on the pests. Or growers can plant things that attract birds and other predatory species, e.g., plants that produce yummy berries and seeds, or that provide protective cover for the natural predators. Those species can control pests naturally. Consider allowing a few weeds in the lawn (or hand-pulling them) to avoid the need for poisonous weed killers. Seal cracks around the house to keep spiders, crickets, mice and other pests outside, where they belong. And fix leaky pipes to dry up the water that lures many pests into a building.
https://student.societyforscience.org/article/how-limit-need-pesticides