



Asking Scientific Questions

FULL TITLES ONLY

Ecology

1. Impact of food and predation on the snowshoe hare cycle
2. The competitive exclusion principle
3. The influence of interspecific competition and other factors on the distribution of the barnacle *Chthamalus stellatus*
4. The interaction of drought and habitat explain space–time patterns of establishment in saguaro (*Carnegiea gigantea*)
5. Development of a multimetric index for integrated assessment of salt marsh ecosystem condition
6. Predator identity more than predator richness structures aquatic microbial assemblages in *Sarracenia purpurea* leaves

Molecular and Cell Biology

1. An epigenetic mutation responsible for natural variation in floral symmetry
2. A structure for deoxyribose nucleic acid
3. Protein measurement with the Folin phenol reagent
4. Membrane trafficking protein cdp138 regulates fat browning and insulin sensitivity through controlling catecholamine release
5. ASK family kinases mediate cellular stress and redox signaling to circadian clock
6. A quantitative map of human condensins provides new insights into mitotic chromosome architecture

Evolution

1. Exposure to predators does not lead to the evolution of larger brains in experimental populations of threespine stickleback
2. On the tendency of species to form varieties; and on the perpetuation of varieties and species by natural means of selection
3. Large-brained frogs mature later and live longer
4. Polygenic evolution drives species divergence and climate adaptation in corals
5. Direct estimate of the spontaneous germ line mutation rate in African green monkeys
6. A theoretical approach to the size-complexity rule

Anatomy and Physiology

1. Reduced arterial vasodilatation in response to hypoxia impairs cerebral and peripheral oxygen delivery in hypertensive men
2. Observations on the superior thyroid artery and its relationship with the external laryngeal nerve
3. Athletic heart remodeling in athletes with arterial hypertension
4. Effect of systemic estradiol administration on circadian body temperature and activity rhythms in female rats
5. The Great Recession worsened blood pressure and blood glucose levels in American adults
6. Physical and geometric constraints shape the labyrinth-like nasal cavity

Genetics

1. Two microcephaly-associated novel missense mutations in CASK specifically disrupt the CASK–neurexin interaction
2. Reconstructing the demographic history of the Himalayan and adjoining populations
3. DNA methylation loss in late-replicating domains is linked to mitotic cell division
4. Human TGF- β 1 deficiency causes severe inflammatory bowel disease and encephalopathy
5. Whole-genome-sequence-based haplotypes reveal single origin of the sickle allele during the Holocene wet phase
6. Absence of CFAP69 causes male infertility due to multiple morphological abnormalities of the flagella in human and mouse

FULL AND SIMPLIFIED TITLES**Ecology**

1. *Simplified title:* Impact of food and predation on the rise and fall of population sizes of snowshoe hares
Full title: Impact of food and predation on the snowshoe hare cycle
2. *Simplified title:* Two species competing for a limited resource cannot coexist
Full title: The competitive exclusion principle
3. *Simplified title:* How competition from other species and other factors affect where a barnacle species lives
Full title: The influence of interspecific competition and other factors on the distribution of the barnacle *Chthamalus stellatus*
4. *Simplified title:* The interaction of drought and habitat explain patterns of where and when saguaro cactus plants grow
Full title: The interaction of drought and habitat explain space–time patterns of establishment in saguaro (*Carnegiea gigantea*)
5. *Simplified title:* Development of a new method for assessing the amount of disturbance in salt marsh ecosystems
Full title: Development of a multimetric index for integrated assessment of salt marsh ecosystem condition
6. *Simplified title:* The make-up of the microbial community in the leaves of pitcher plants is affected more by the types of predators than the number of predator species.
Full title: Predator identity more than predator richness structures aquatic microbial assemblages in *Sarracenia purpurea* leaves

Molecular and Cell Biology

1. *Simplified title:* Changes to molecules chemically attached to a gene can cause a change in the shape of a flower
Full title: An epigenetic mutation responsible for natural variation in floral symmetry
2. *Simplified title:* A model for the structure of DNA
Full title: A structure for deoxyribose nucleic acid
3. *Simplified title:* The amount of protein in a solution can be measured using a special chemical
Full title: Protein measurement with the Folin phenol reagent
4. *Simplified title:* A protein that controls the transportation and fate of other cellular proteins also releases a chemical signal to regulate the amount of brown fat in a cell and its sensitivity to insulin
Full title: Membrane trafficking protein CDP138 regulates fat browning and insulin sensitivity through controlling catecholamine release
5. *Simplified title:* A specific group of enzymes control cellular stress and signals that affect cells' ability to track time
Full title: ASK family kinases mediate cellular stress and redox signaling to circadian clock
6. *Simplified title:* A map showing the location and amount of a specific group of proteins helps reveal the structure of chromosomes during mitosis
Full title: A quantitative map of human condensins provides new insights into mitotic chromosome architecture

Evolution

1. *Simplified title:* Living with predators does not cause the evolution of larger brains in a species of small fish
Full title: Exposure to predators does not lead to the evolution of larger brains in experimental populations of three-spine stickleback
2. *Simplified title:* The process of natural selection and the formation of new varieties and species.
Full title: On the tendency of species to form varieties; and on the perpetuation of varieties and species by natural means of selection
3. *Simplified title:* Large-brained frogs mature later and live longer
Full title: same as the simplified title
4. *Simplified title:* Differences among coral species and adaptation to climate are caused by changes in many genes
Full title: Polygenic evolution drives species divergence and climate adaptation in corals
5. *Simplified title:* A measurement of the rate of new heritable mutations in eggs and sperm in African green monkeys
Full title: Direct estimate of the spontaneous germ line mutation rate in African green monkeys

6. *Simplified title:* A mathematical model to explain the relationship between species size and the number of different types of cells it has
Full title: A theoretical approach to the size-complexity rule

Anatomy and Physiology

1. *Simplified title:* A reduced ability to make arteries open wider when oxygen is low reduces oxygen to the brain and outer parts of the body in men with high blood pressure
Full title: Reduced arterial vasodilatation in response to hypoxia impairs cerebral and peripheral oxygen delivery in hypertensive men
2. *Simplified title:* Description of the anatomy of an artery for the thyroid and how it relates to a nerve for the voice box (larynx)
Full title: Observations on the superior thyroid artery and its relationship with the external laryngeal nerve
3. *Simplified title:* A model for how the heart changes its structure in athletes that have high blood pressure in their arteries
Full title: Athletic heart remodeling in athletes with arterial hypertension
4. *Simplified title:* The effect of a female sex hormone on daily cycles of body temperature and activity in female rats
Full title: Effect of systemic estradiol administration on circadian body temperature and activity rhythms in female rats
5. *Simplified title:* The Great Recession worsened blood pressure and blood glucose levels in American adults
Full title: same as the simplified title
6. *Simplified title:* The shape of the nasal cavity is controlled by physical and geometric limits
Full title: Physical and geometric constraints shape the labyrinth-like nasal cavity

Genetics

1. *Simplified title:* Two new genetic mutations that are associated with reduced brain size in infants interrupt the connection between an enzyme and a protein that helps connect nerves
Full title: Two microcephaly-associated novel missense mutations in CASK specifically disrupt the CASK–neurexin interaction
2. *Simplified title:* Patterns in DNA describe the history of the ancestors of people living in the Himalayas
Full title: Reconstructing the demographic history of the Himalayan and adjoining populations
3. *Simplified title:* The loss of chemical changes to DNA that occurs in sections of chromosomes that are copied later than others can be used to tell how many times a group of cells has divided
Full title: DNA methylation loss in late-replicating domains is linked to mitotic cell division
4. *Simplified title:* Low levels of a protein associated with cell growth causes inflammatory bowel disease and abnormal brain function
Full title: Human TGF- β 1 deficiency causes severe inflammatory bowel disease and encephalopathy
5. *Simplified title:* Patterns in long segments of DNA around the gene associated with sickle cell disease show that the mutation occurred once in human history about 7,300 years ago
Full title: Whole-genome-sequence-based haplotypes reveal single origin of the sickle allele during the Holocene wet phase
6. *Simplified title:* Mutations to a gene that stop the production of a protein found in the middle of the flagellum in sperm cause sperm to have many defects that result in infertility in both mice and humans
Full title: Absence of CFAP69 causes male infertility due to multiple morphological abnormalities of the flagella in human and mouse