GEOSCIENCE NEWSLETTER

Number 31 October 2012

For Your Calendar

Field School for Teachers is scheduled for 13-24 July 2014, near Calgary, Alberta, Canada. Teachers, please note the date and reserve the time. More information will be forthcoming.

GRI ON SOCIAL MEDIA

GRI is on Facebook. Our address is: *www.facebook.com/GeoscienceResearchInstitute*.

You may also like to visit our blog at *grisda.wordpress.com*. Recent topics include megabreccia and catastrophe; flat gaps challenge long geologic ages; climbing up and down through the fossil record; and beauty and intelligent design.

View of the crowd of attendees at the Creation Congress in Ukraine.

CREATION CONGRESS IN UKRAINE

More than 700 persons attended the First ESD Science & Faith Congress held August 27-30 at the Ukrainian Adventist Center of Higher Education, in Bucha, near Kiev, Ukraine. Meetings were organized by Roberto Biaggi, Director of the GRI Branch Office in Argentina. This is the first creation congress to be held in the territory of the Euro-Asia Division.

Tim Standish presenting a lecture in Florence, Italy.

PASTORS' CONFERENCES IN ITALY AND SPAIN

GRI personnel presented two creation conferences for pastors in Europe. The first one was held in Florence, Italy September 3-4, and the second one was in Valencia, Spain, from 6-8 September.

The conferences addressed topics in geology, biology, paleontology, and how to deal practically with issues in faith and science. Question-and-answer sessions provided opportunity for stimulating discussion and dialogue.

Raúl Esperante presented several lectures to the group in Spain.

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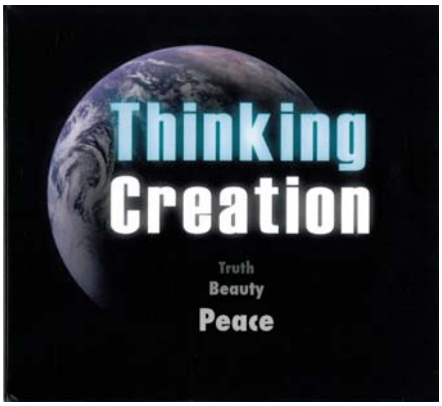
NEW MATERIALS ON SCIENCE AND FAITH

Thinking Creation is a set of six videos recorded on three DVDs, dealing with diverse issues in faith and science, and produced by the GRI.

Each topic is richly illustrated, and runs about 30 minutes. Individual titles are: The great debate; The Christian roots of science; The design in life; The richly diverse creation; God and nature; and God and the Big Bang.



The videos are intended for introductory courses in faith and science for college undergraduates or advanced high school students, and are available at: *http://tinyurl.com/94yaa2y.*

"The Bible and Science" Presentations

A set of 17 PowerPoint presentations on the Bible and science has been prepared by Ariel Roth, former Director of the GRI. The lectures are intended to aid teachers in preparing to discuss issues in faith and science. The material is available for free download at: *www.sciencesandscriptures.com*.

Follow the "Discussion" button to view the presentations on topics including the origin of life, the age of the earth, fossils, and the flood.

SCIENCE NEWS

Design in the Genome

The ENCODE Project Consortium. 2012. An integrated encyclopedia of DNA elements in the human genome. Nature 489:57-74.

The ENCODE project studied DNA functionality in the human genome.

Summary. The human genome has been completely sequenced, but the function of much of the DNA remains unknown. Advances in technologies used in molecular genetics have now made it possible to identify functional elements over the entire genome. This report summarizes analysis of DNA sequence function in 147 different human cell types.

Results indicate that more than 80% of human DNA is involved in some type of biological activity in one or more cell type. Many single nucleotide mutations can be associated with specific genetic diseases.

The fraction of the genome involved in gene regulation is much larger than the fraction involved in protein production. Interactions among gene regulatory elements are very complex and often tissue specific. More than 100,000 chromatin interactions were identified among specific DNA promoters. Patterns of transcription factor binding site relationships to chromatin structure showed that differences in mRNA activity can be accounted for by differences in combinations of transcription factor binding sites. The genome is organized and interacts in complex ways, and more discoveries can be expected.

Comment. The view of the genome is rapidly changing. What was once viewed as a collection of discrete genes that acted more or less independently is now seen as a dynamically interacting information system. Such systems show compelling evidence of origin by intelligent design. Further, the view that a vast majority of the human genome is made up of "junk DNA" with no current biological function called into question by results reported in this paper.

Genetics and Horse Size

Makvandi-Nejad S, Hoffman GE, Allen JJ, et al. 2012. Four loci explain 83% of size variation in the horse. PLoS One 7(7):e39929. Doi:10.1371/journal.pone.0039929.

Summary. Horses vary widely in size, from miniature horses less than a meter in height, to the largest breeds that may exceed two meters in height. Four genetic loci are shown to account for the majority (83%) of variation in size among horses. Three of these are genes for transcription factors: LCORL, HMGA2 and ZFAT, and have previously been found to control height in humans. The fourth gene identified is LASP1, which produces a protein that binds actin and is important in growth. This gene is induced by IGF1, which previously has been shown to affect size in dogs (see *GRI Newsletter* 10). Domesticated animals typically exhibit a wide range of size, which is readily affected by selection by breeders.

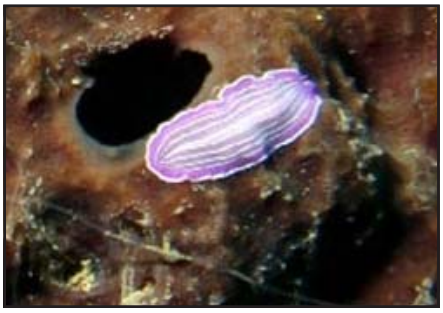
Comment. It is readily seen that domesticated animals can vary widely in size and color. Much of the difference is due to differences in gene regulation. Distribution patterns of wild species suggests the same process has been at work in natural populations. Such variation can occur rapidly, and appears not to rely on random mutations in protein-coding genes, but in selectable variation in regulatory genes such as transcription factors.

A horse and a pony illustrate size differences among domestic horses. Photo by arjecahn, http://www.flickr.com/photos/18087788@N00/95322238.

Not A Bilaterian?

Bengtson S, Cunningham JA, Yin C, Donoghue PCJ. 2012. A merciful death for the "earliest bilaterian," Vernanimalcula. *Evolution & Development 14:421-427.*

Summary. A 2004 report of a fossil bilaterian animal in Precambrian sedi-



Bilaterians such as this flatworm have bilateral symmetry. Photo Wikimedia commons, by permission.

ments in China led to a vigorous debate about the legitimacy of the report. The purported fossil, named *Vernanimalcula guizhouena*, was recovered from the Doushantuo Formation, with a geologic age of nearly 600 million years, and has been given great evolutionary significance as the earliest known bilaterian. The authors of this report criticize the interpretation of the fossil and refute the notion it is a bilaterian. Instead, they interpret it as a probable protistan cyst that has been infilled by minerals, producing a pattern that appears in cross-section to be bilaterally symmetrical. The original report may have been unduly influenced by the desire of the investigators to find a bilaterian fossil in the sediments.

Comment. Controversies such as this remind us to be cautious in accepting claims of new discoveries. Investigator bias is only one of many potential hazards in arriving at a correct understanding of a phenomenon. Scientific conclusions must always be held tentatively, especially when they offer the promise of fame or fortune.