

The CRS eKINDS research initiative

Where we have been
and where we are headed from here

Jean K. Lightner
Kevin Anderson



I Sing the Mighty Power of God

Isaac Watts, 1715

I sing the mighty pow'r of God,
that made the mountains rise,
That spread the flowing seas abroad,
and built the lofty skies.
I sing the wisdom that ordained
the sun to rule the day;
The moon shines full at His command,
and all the stars obey.

I Sing the Mighty Power of God

Isaac Watts, 1715

I sing the goodness of the Lord,
 who filled the earth with food,
Who formed the creatures through the Word,
 and then pronounced them good.
Lord, how Thy wonders are displayed,
 where'er I turn my eye,
If I survey the ground I tread,
 or gaze upon the sky.

I Sing the Mighty Power of God

Isaac Watts, 1715

There's not a plant or flow'r below,
but makes Thy glories known,
And clouds arise, and tempests blow,
by order from Thy throne;
While all that borrows life from Thee
is ever in Thy care;
And everywhere that we can be,
Thou, God, art present there.

Historical Context of Life

Creation Account

- A Creator
- Creation of different kinds
- Designed to reproduce and fill the earth

Creation Myth

- No creator
- Onward, upward trend in life
- Only naturalistic processes -- time, chance, and natural selection

Variation in dog breeds



(Wikipedia pics from <https://en.wikipedia.org/wiki/Dog>)

Variation in cattle breeds



eKINDS

Examination of **K**inds **I**n **N**atural **D**iversification and **S**peciation

- Research Initiative – begun in 2016
- Outstanding Questions:
 1. Which organisms today are descended from the same created kind?
 2. What mechanisms are involved in generating the diversity that we see within created kinds?
 3. Can we trace the natural history of various animal kinds as they moved from the Ark and repopulated the earth?

Identifying Created kinds

- AiG Ark Encounter research
 - Hybridization
 - Cognitum
 - Statistical baraminology
- Limitations
 - Lack of hybridization data
 - Lack of statistical studies (data)
- Result
 - Estimated at family level
 - Identified Baramins tentative

eKINDS Project Paper

Baraminology Classification Based on Gene Content Similarity Measurement

Jean O'Micks*

Abstract

A recent genomics-based baraminology method has been developed that measures the gene content similarity (the Jaccard Coefficient Value, or JCV) between species and assigns them to individual baramins. The method is based on the creationist assumption that genes are conserved across genomes within a baramin and represent orthological functional units. Species from the same baramin should contain many common genes and thus have a high JCV, whereas spe-

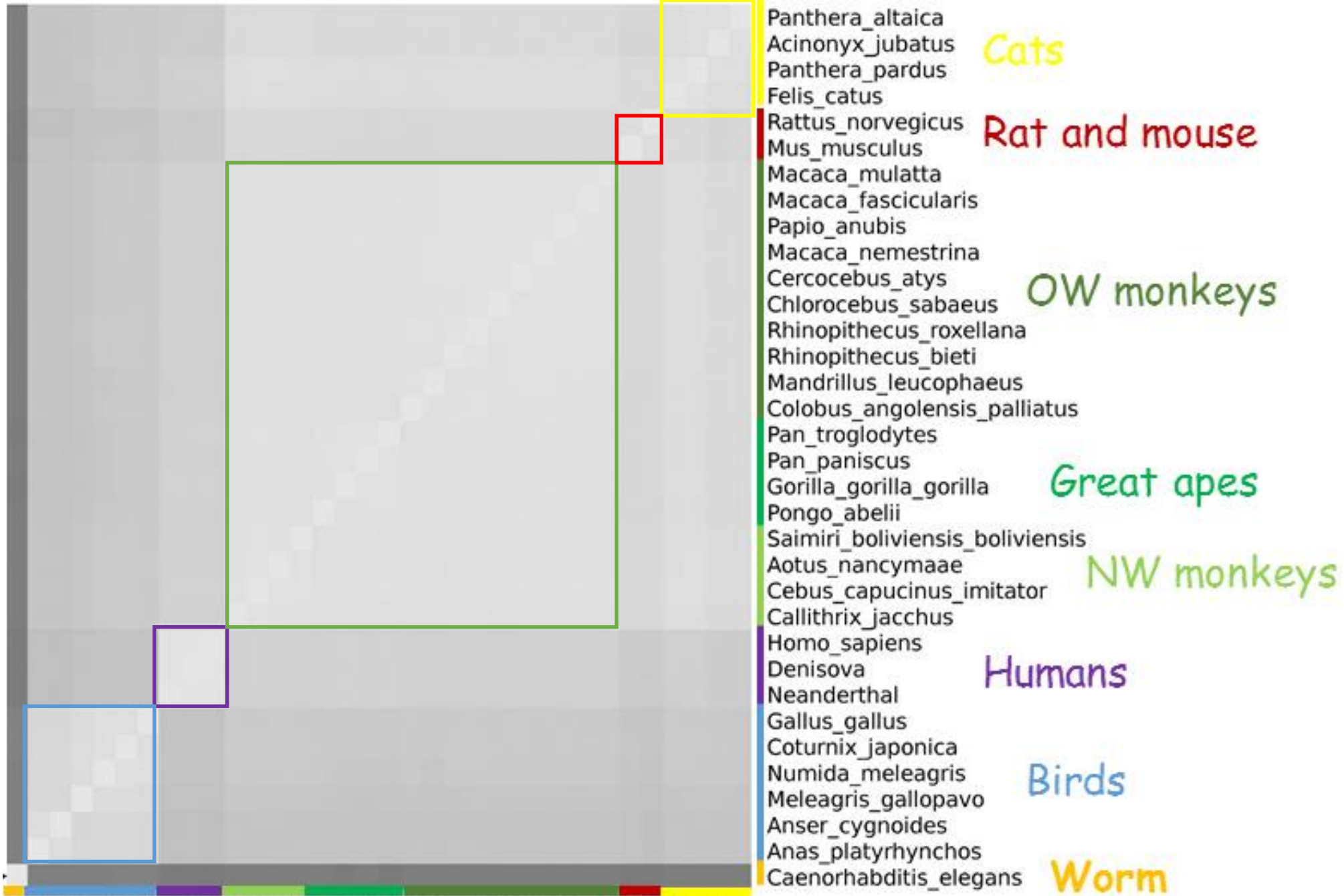
Insects (104 species from 4 orders)

- Diptera
 - Nematocera (mosquitoes)
 - Brachycera (four superfamilies of flies)
- Hemiptera
 - One significant cluster
 - One not statistically significant
- Hymenoptera (43 species)
 - One group comprised of ants, bees, wasps, sawflies and parasitoid wasps
- Lepidoptera
 - One group (6 different superfamilies)

Low number of Orthologs

Interpretations/conclusions

- Need complete proteomes
- The level of the kind is high (suborder to order) in insects OR groupings above/below the kind cloud interpretation
- Evo – massive gene gains explain origin of insect orders; gene losses can explain changes within an order
- Erich Wassman (1859-1931): Muscidae (Brachycera: Schizophora) and Phoridae (Brachycera: Aschiza) are from the same “branch of Dipteran stock”
- What other factors might influence grouping? (sampling size/density)



gans
nchos
oides
pavo
agris
onica
gallus
erthal
isova
piens
cchus
tator
maae
ensis
abelii
orilla
iscus
dytes
liatus
aeus
bieti
llana
baeus
atys
strina
nubis
ularis
ulatta
culus
gicus
catus
ardus
patus
taica

Mechanisms Underlying Diversity

Source of alleles

- Created diversity
- DNA editing
 - Homologous recombination (gene conversion and crossing over)
 - Immune system
 - Adaptive mutations?
 - Less common alleles, especially when more than four exist (unclean animals)
 - Adaptive for a specialized environment
- Accidental DNA changes

Mechanisms Underlying Diversity

Prevalence of alleles

- Natural selection or Genetic drift
- Migration
 - Founder effect –adaptive alleles entering a population
IOW, not always random with respect to fitness as assumed

eKINDS Project Paper

Founder Events: Foundational in Rapid Post-Flood Diversification

Jean K. Lightner* and Jon Ahlquist**

Abstract

A biblical view of natural history begins in Genesis. God created plant and animal life according to their kinds, telling them to reproduce and fill the earth. Another important historical event was the global Flood, where terrestrial and flying animal numbers were severely reduced. Again, the creatures preserved on the ark went on to reproduce and fill the earth. Although creationists reject universal common ancestry on biblical grounds, they still need to adequately account for the diversification and speciation that has occurred within the various kinds of animals since the Flood. Because a biblical model demands the rapid diversification of creatures into forms filling different ecological niches, or adaptive radiation, creationists have the opportunity and responsibility to contribute to our understanding of this important topic and thus show the relevance of the biblical model.

Mechanisms Underlying Diversity

Prevalence of alleles

- Natural selection or Genetic drift
- Migration
 - Founder effect –adaptive alleles entering a population
IOW, not always random with respect to fitness as assumed
- Hybridization
- Non-Mendelian inheritance (meiotic drive, e.g. biased gene conversion)

Tracing a Plausible Natural History

- Initial look at Kingfishers (Jon Ahlquist and Jean K. Lightner)
 - Multiple lines of evidence to delineate the level of the kind
 - Biogeography
- Galliformes (chicken, turkeys, pheasants, grouse)
- Tapirs

eKINDS

Examination of **K**inds In **N**atural **D**iversification and **S**peciation

- Honor God by studying creation and uncovering truths that reveal His glory
- Diversification and adaptation point to God (design/created complexity)
 - Networks designed to allow for change (redundancy)
 - Designed mechanisms for making changes (DNA editing)
 - Designed mechanisms for increasing allele frequency (meiotic drive?)

Our God is incredibly wise and caring