

Germline-to-embryo transition

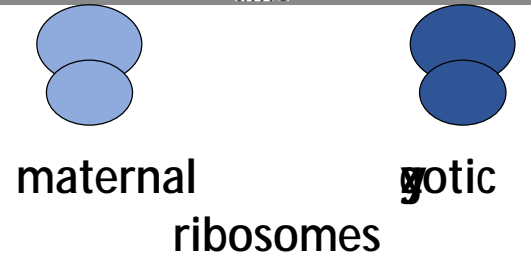
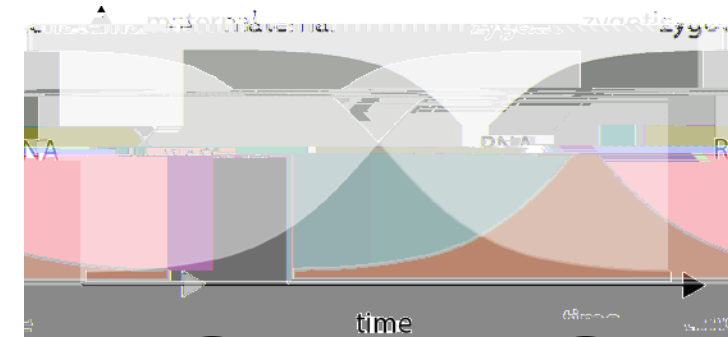
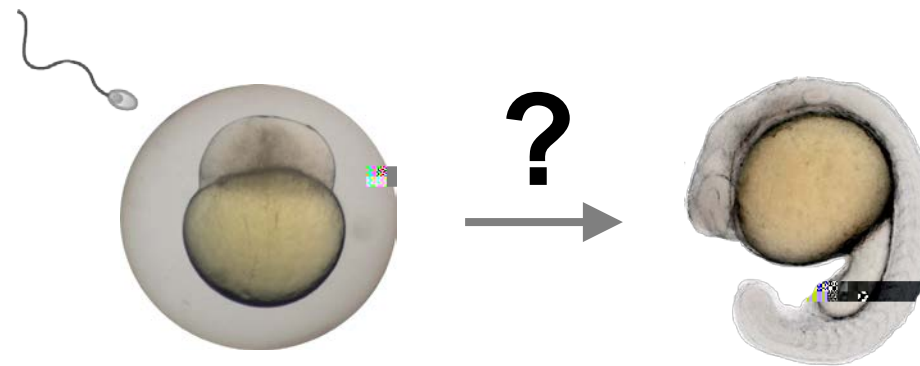
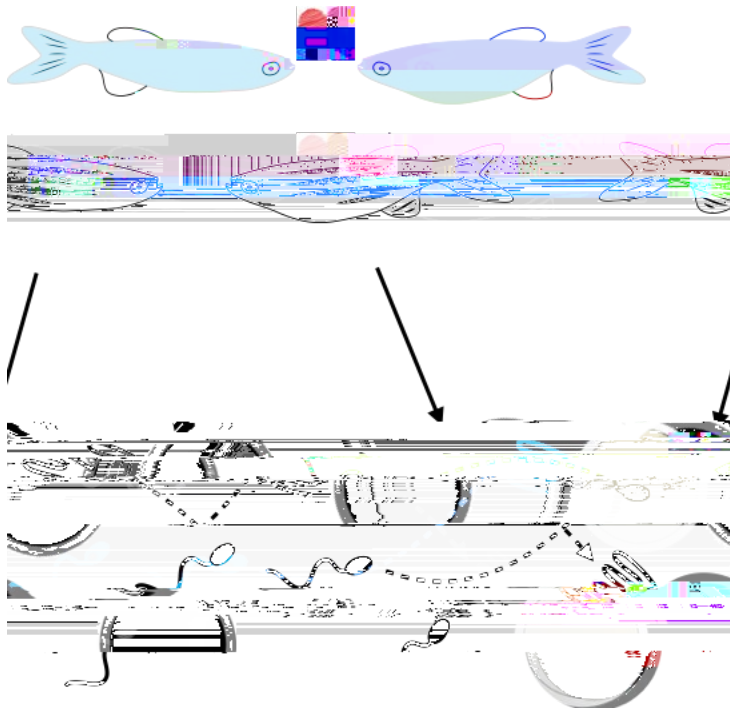
Fertilization

Short proteins

Translation

Bouncer, the gate-keeper of the oocyte

Toddler makes gastrulating cells move

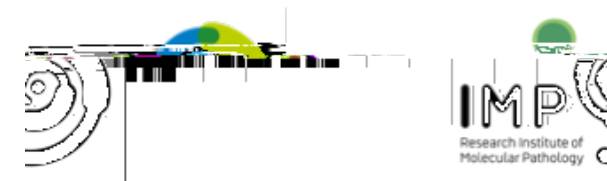


Andrea (Andi) Pauli

Lillie 118

IMP, Vienna, Austria

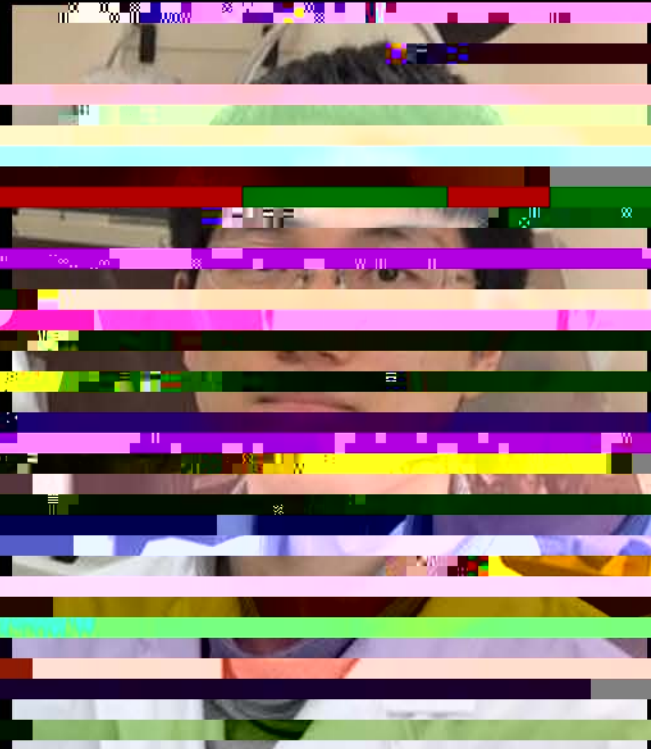
Herberg et al., bioRxiv





Execution?

Inhibition?



Behavioral inhibition tasks

the Cerebellum

What the heck is Trichoplax?

Trichoplax adherens, Schultz, 1883

treese@mbl.edu

dan Rohsahr

Disk shaped
marine animal-
crawls on ventral
cilia -finds and
eats algae..
World-wide warm
oceans

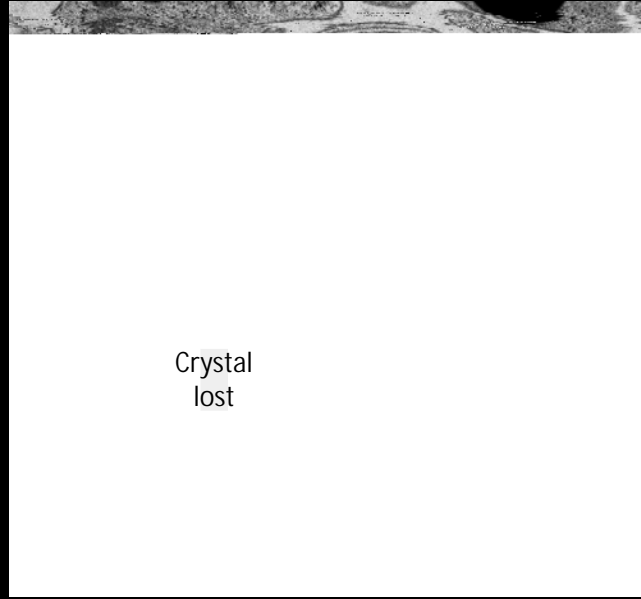
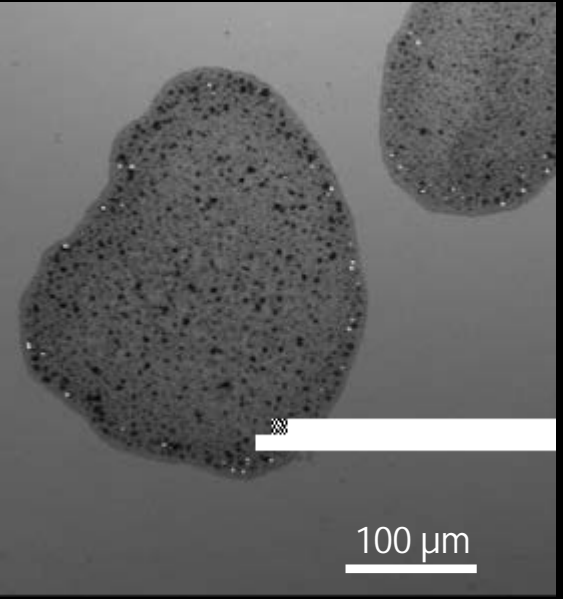
Only 6 cell types.
No digestive track-



98 genes,
11,514 MB
87% homologs
in other animals
83% shared
between Cnidaria
and Bilaterians.

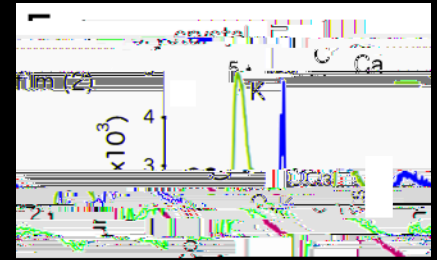
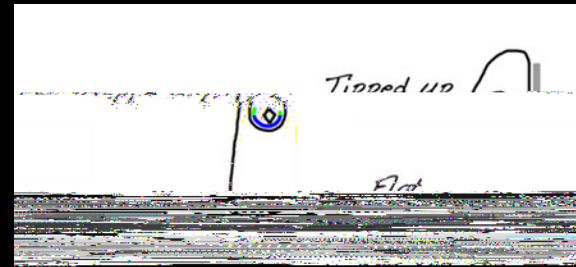
Tationa Mayorove
Carolyn Smith
Tom Reese

What do tiny crystals in Trichoplax tell us about its lifestyle and origin?

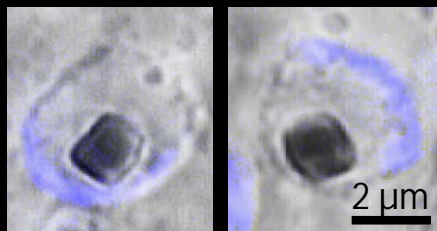
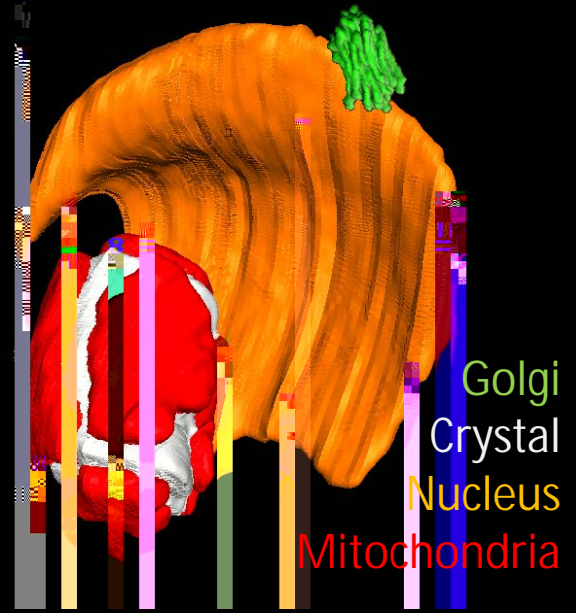


Crystals cells might be selectively activated depending on orientation of the animal. A large number of crystal cells (>100) compensates for the absence of a nervous system.

Since crystals do not contain Mg, the mineral is most likely aragonite. This suggests that crystals might have evolved in a Trichoplax ancestor 700 MA years ago, when Trichoplax is thought to emerge.



Crystals fall down in tipped animals, and to touch the down side of the crystal cell, at either the nuclear cup or plasma membrane.





Posterior

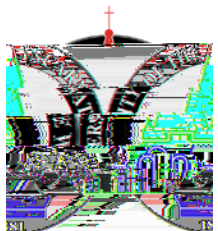


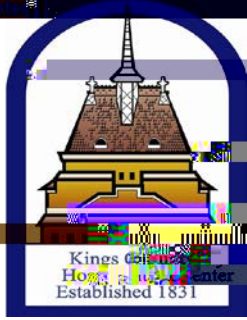
>| *variegatus* beta-catenin consensus sequence (5'-3')

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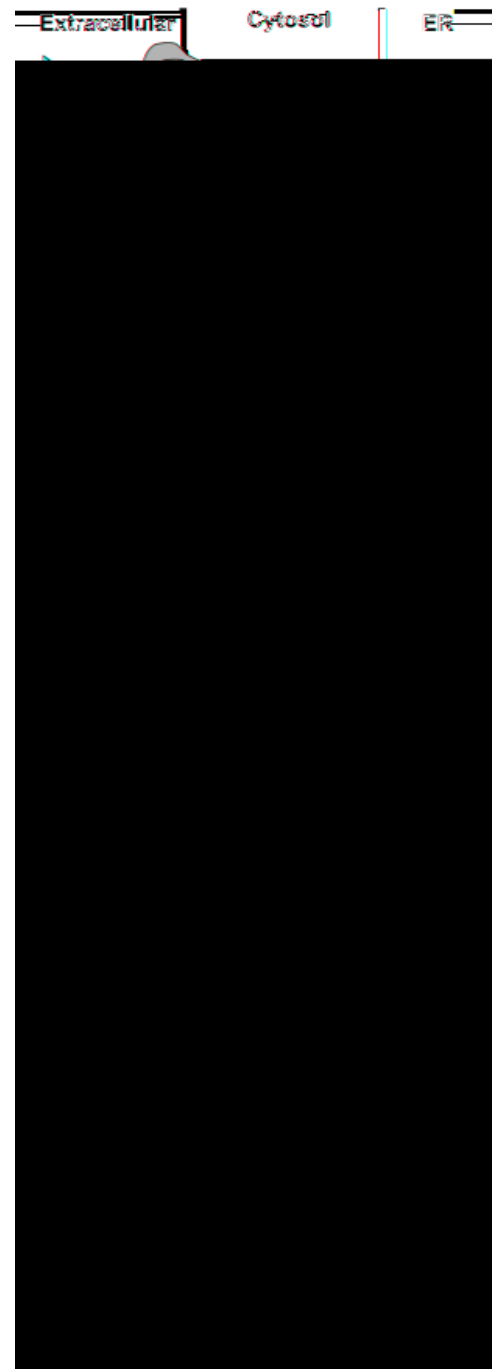
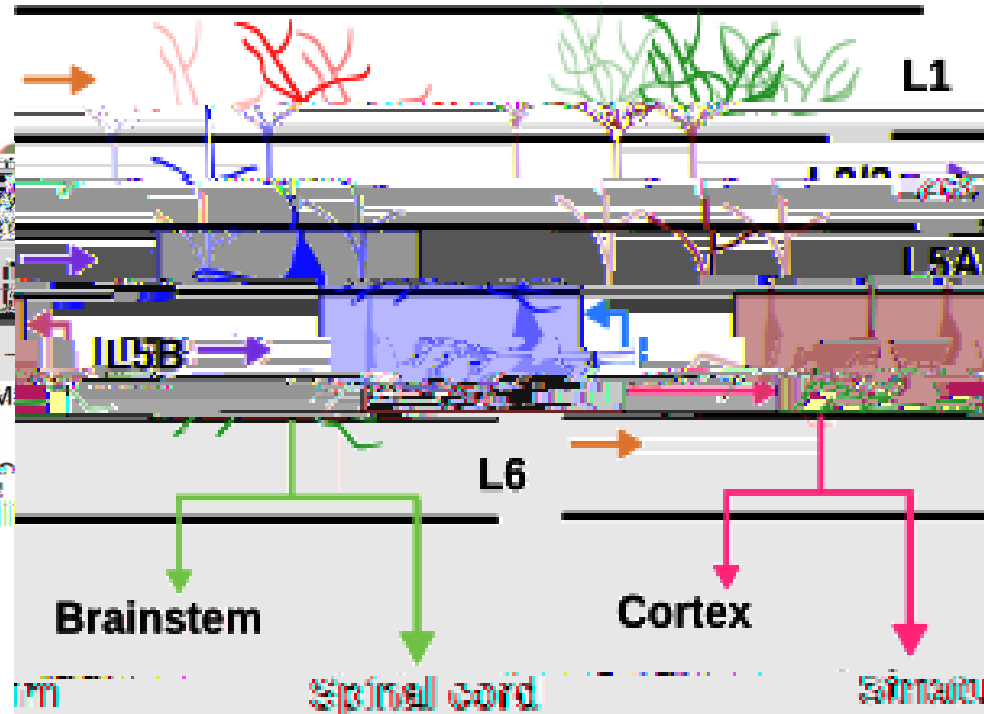
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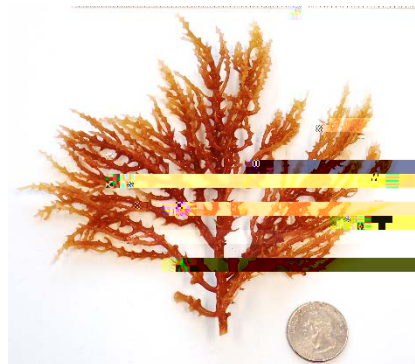
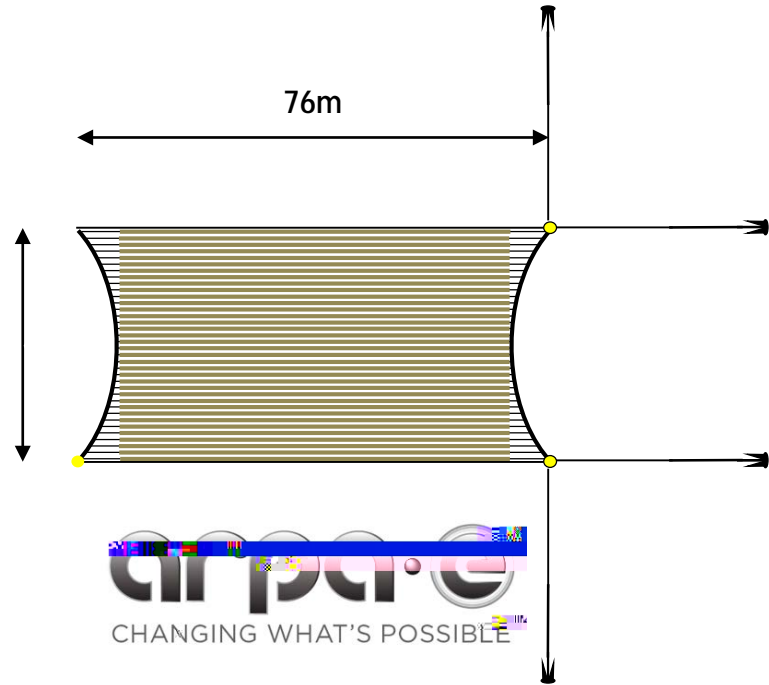




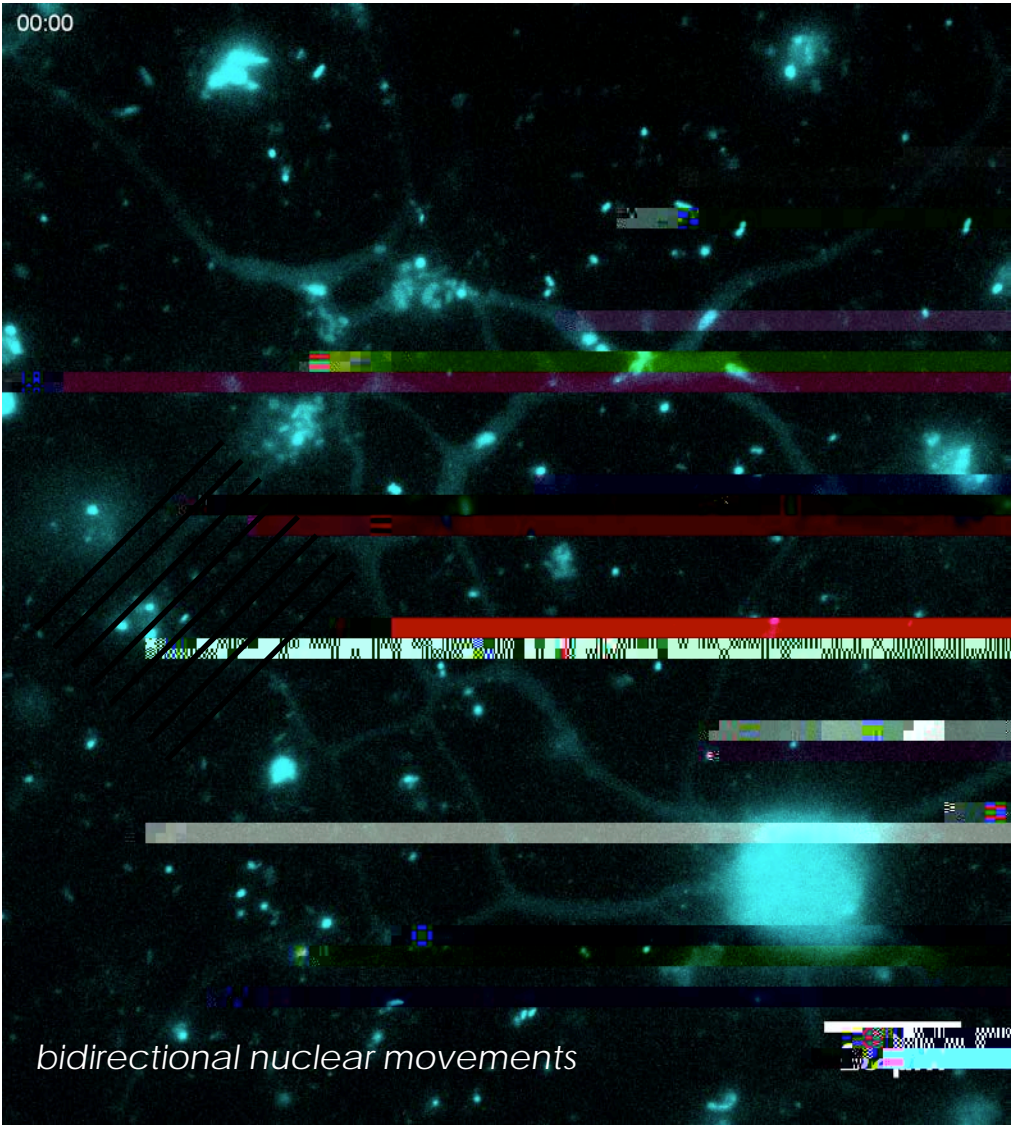
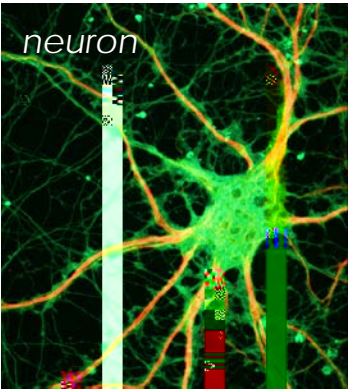
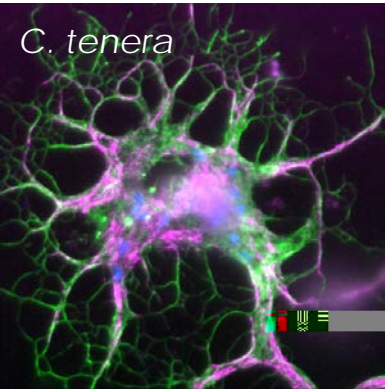
Multiscale modeling

Computational Neuroscience
bill.lyton@domstate.edu
 web: neuron.gle.edu, netpye.org

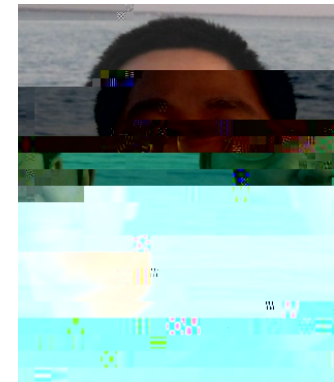




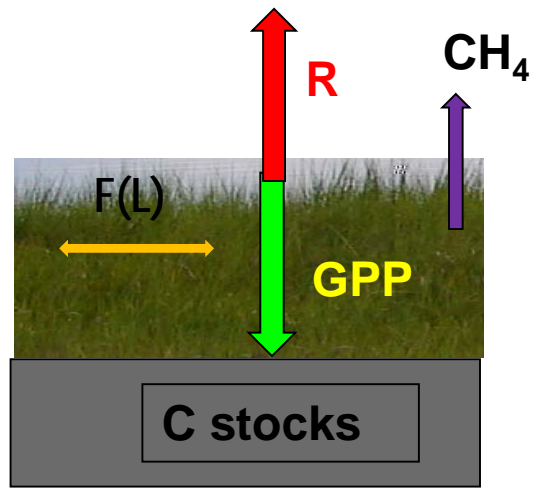
Cytoskeletal evolution of a multinucleate Rhizarian amoeba



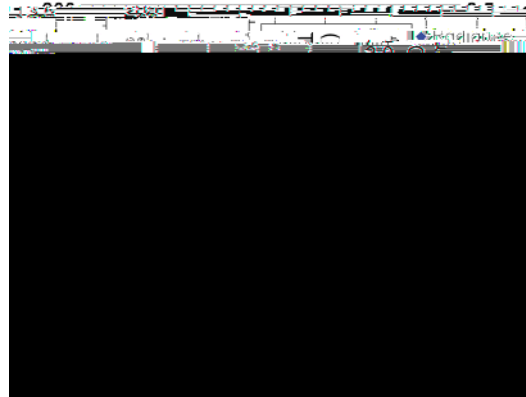
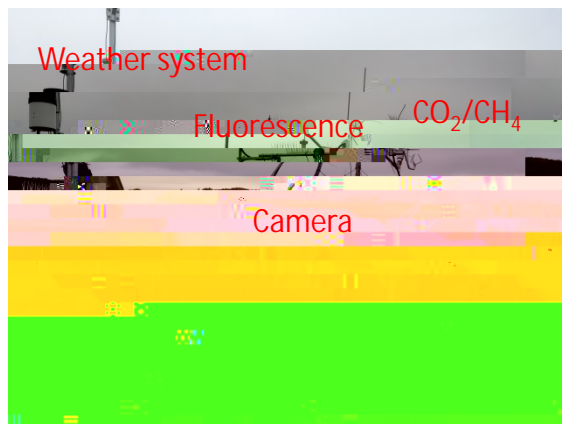
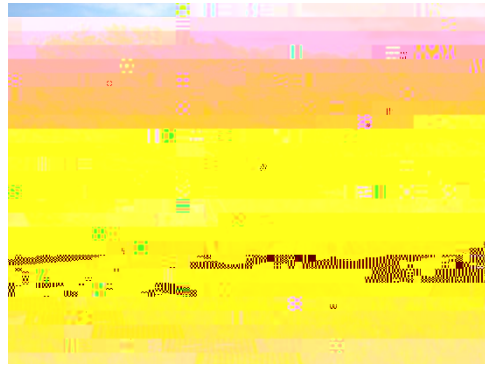
Quantifying coastal blue carbon to offset climate change



Jim Tang
Starr 317
jtang@mbl.edu



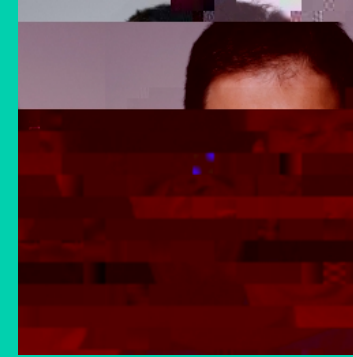
Coastal ecosystems have strong ability to store carbon (Tang et al. 2018)



Solar induced fluorescence, a proxy of photosynthesis



A role for cell anisotropy on nucleus-cytoskeleton connections



Edgar R. Gomes



Human Skeletal Muscle cells

- Multinucleated
- Nuclei in specific positions