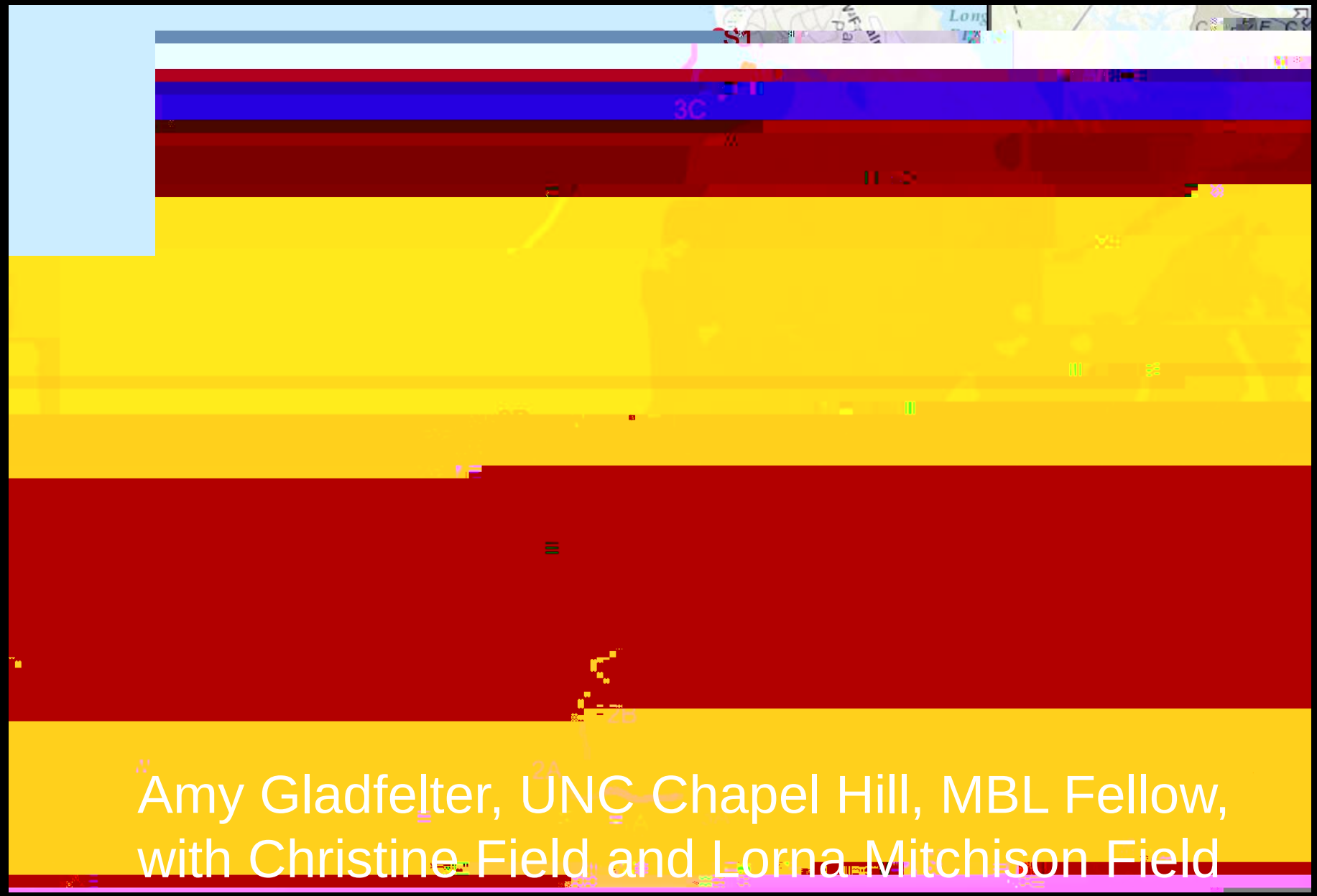
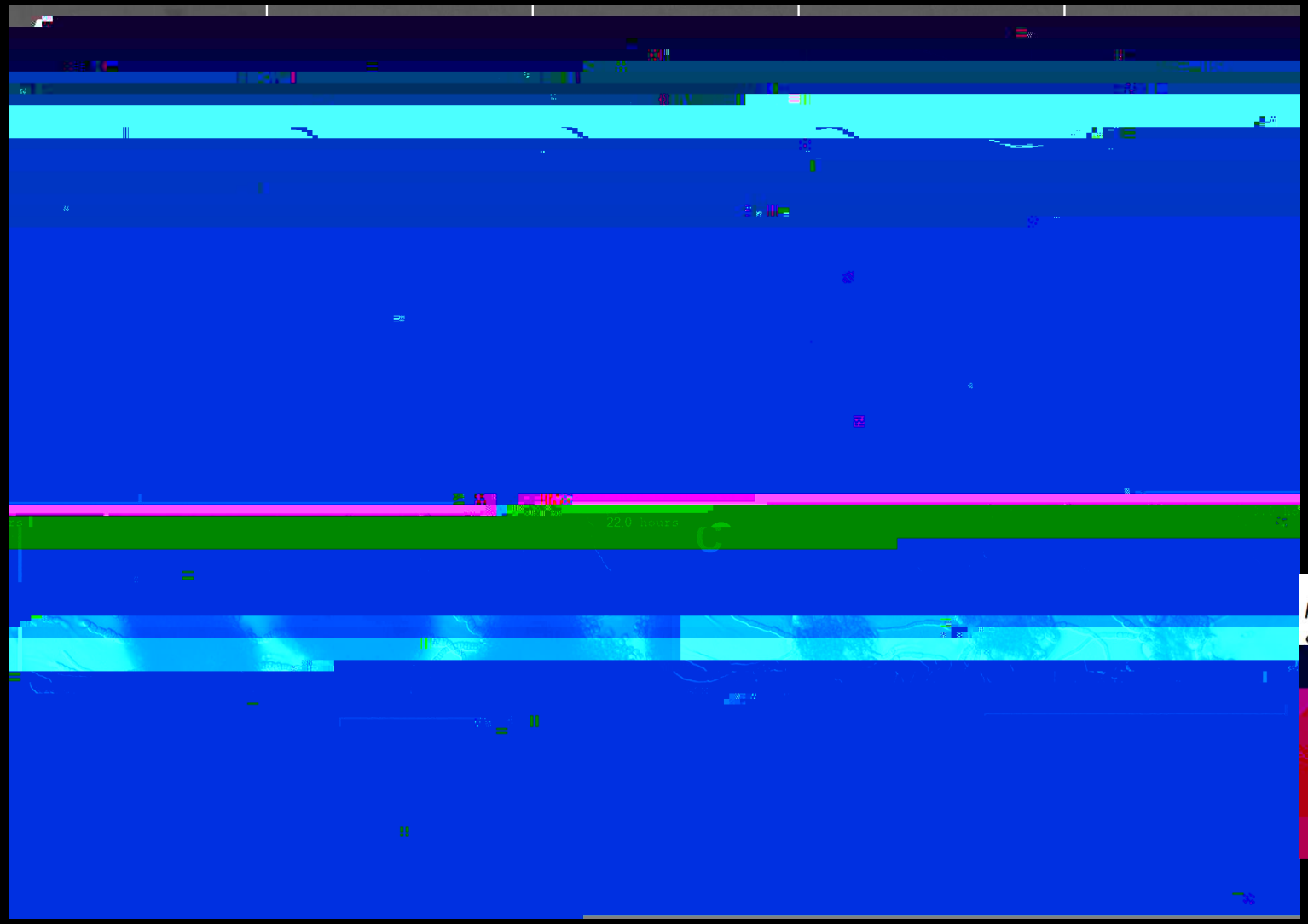
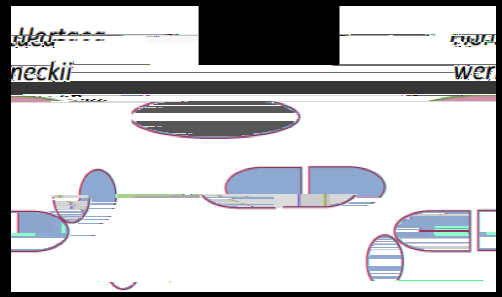
Searching for new fungal model systems in the ocean



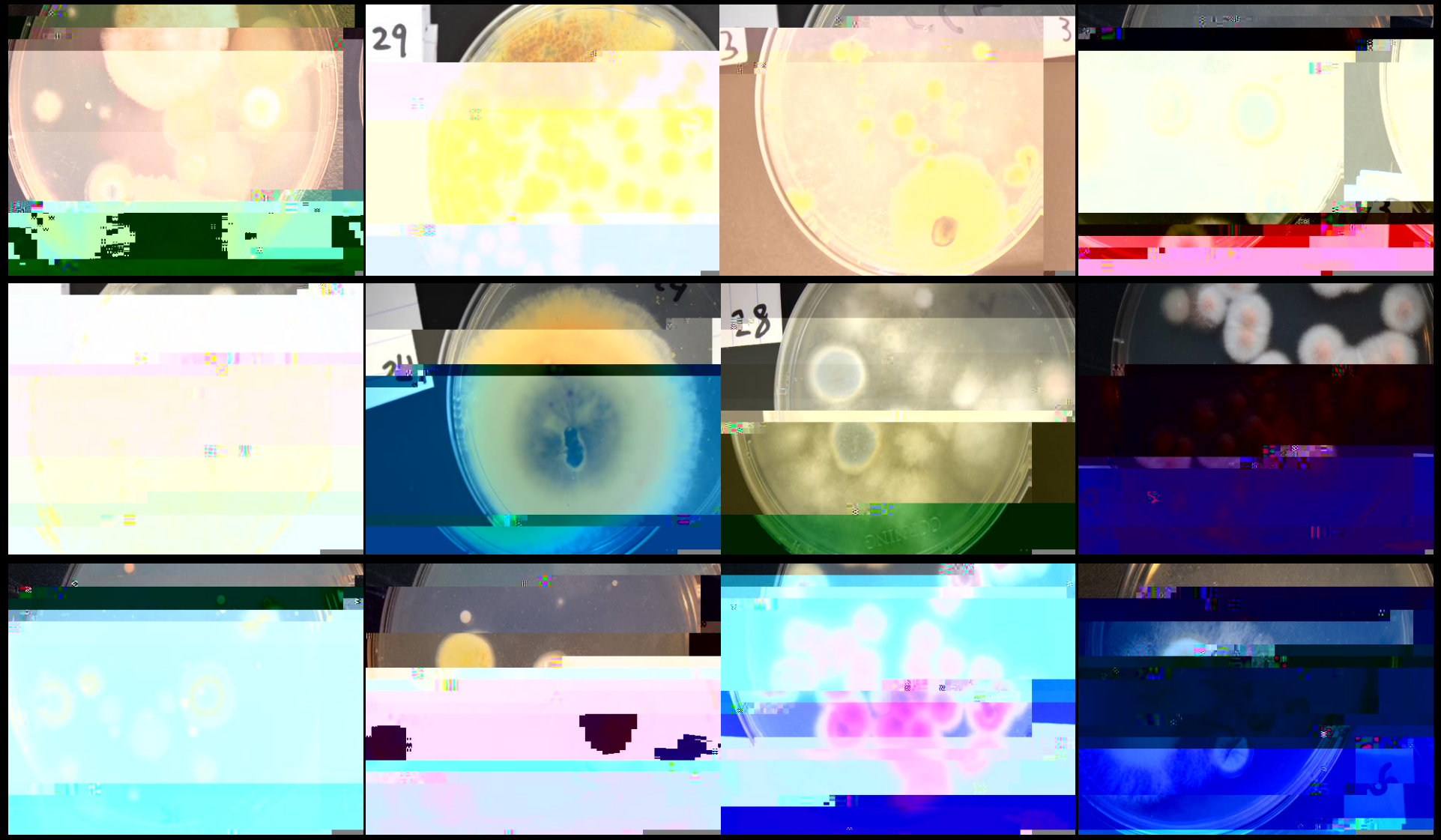
Amy Gladfelter, UNC Chapel Hill, MBL Fellow,
with Christine Field and Lorna Mitchison Field

Searching for new fungal model systems in the ocean





Searching for new fungal model systems in the ocean



Amy Gladfelter, UNC Chapel Hill, MBL Fellow,
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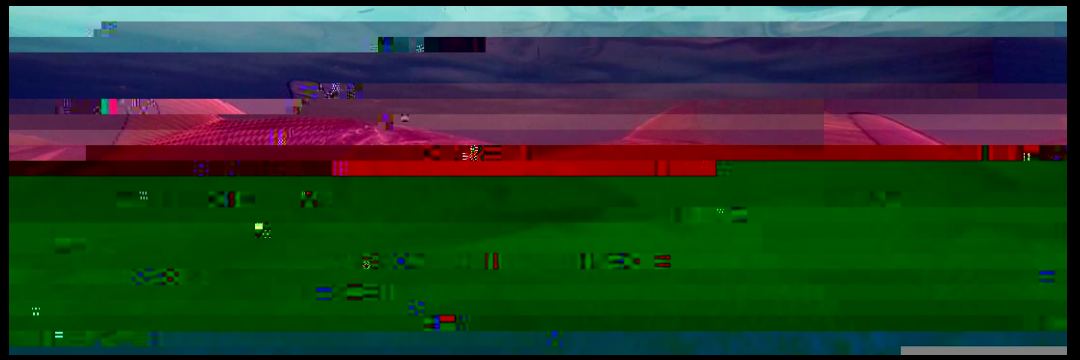
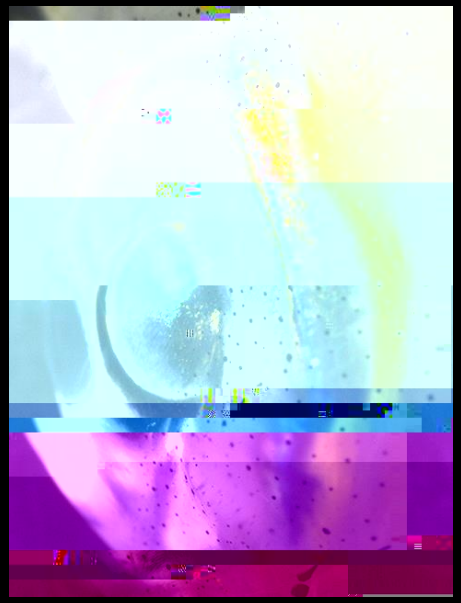
Imaging and DNA Barcoding the Marine Life of Woods Hole





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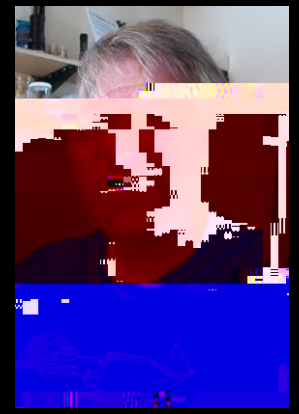
Talks
MBL
2018



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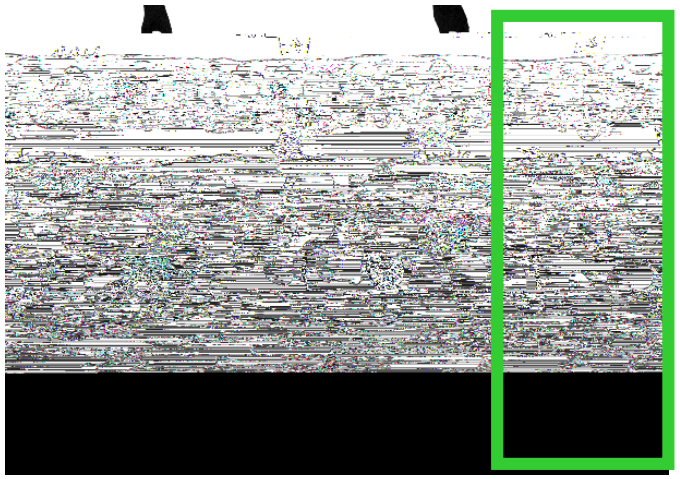
Glial cell modulation of neuronal activity in the retina / nervous system



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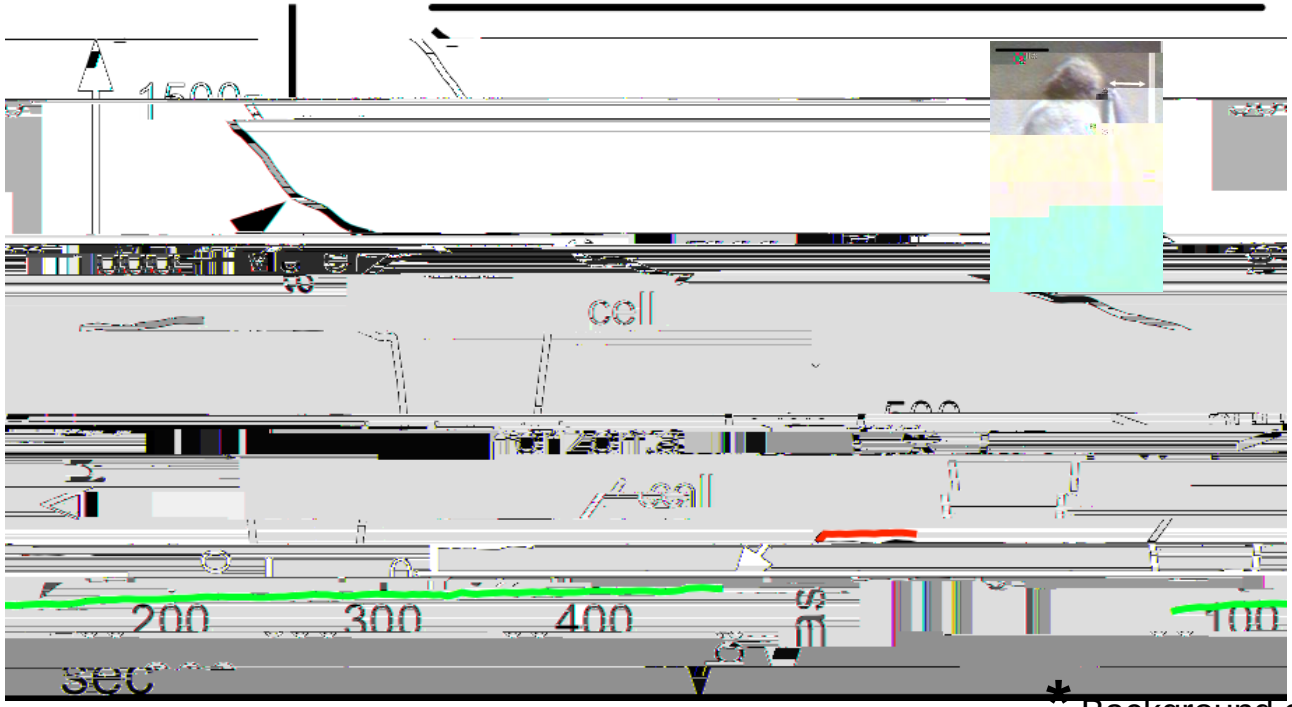
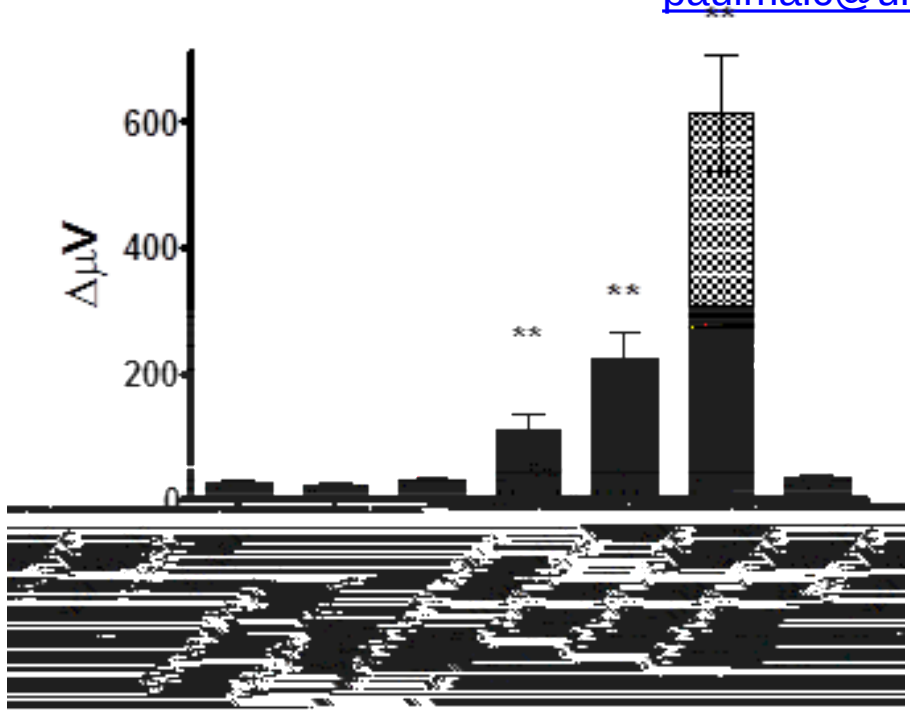
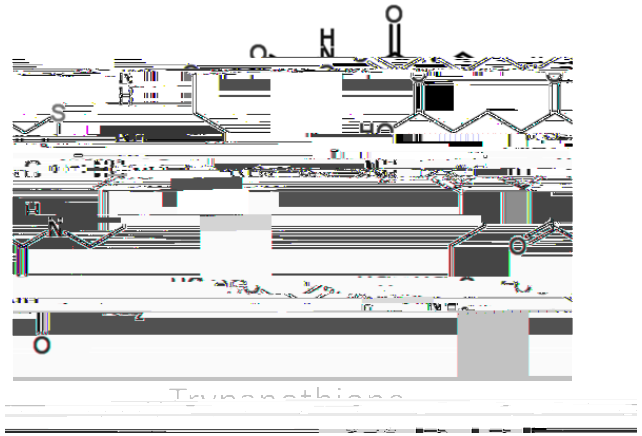




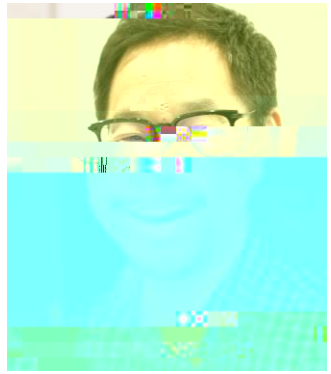
* Background control

Evolution of Genetic Novelty in Stress Resistance



Morphogenesis of a Cell

Fred Chang UC San Francisco



Fred Chang
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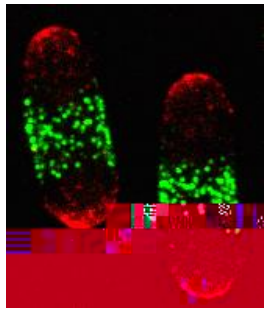
fission yeast
S. pombe



GEMS

cell squishing

How do molecules and cellular mechanical properties specify cell shape and size?

Probing physical properties of the cytoplasm ð micro-rheology, cell squishing

Arthur Molines, Joel Lemiere, Catherine Tan
with Liam Holt, Amy Gladfelter, Gohta Goshima, Morgan Delarue and labs

Toward four-dimensional molecular orientation imaging

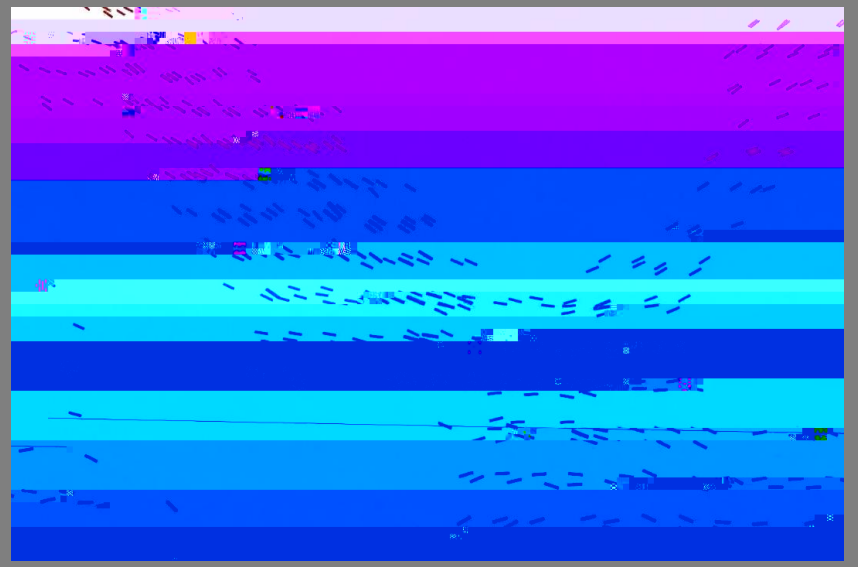
Patrick La Riviere, University of Chicago

with Talon Chandler (Uchicago), Hari Shroff, Min Guo (NIH), Rudolf Oldenbourg (MBL)

Goal: To capture a dynamic series of three-dimensional volumes of fluorescent molecules reporting both the position AND orientation of target molecules of interest (eg, actin).

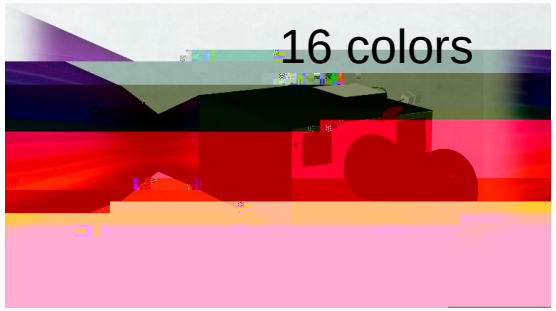
We have added polarization filters to the excitation channels of a diSPIM dual-view light-sheet microscope

It captures four polarization-sensitive stacks from each of two orthogonal directions.

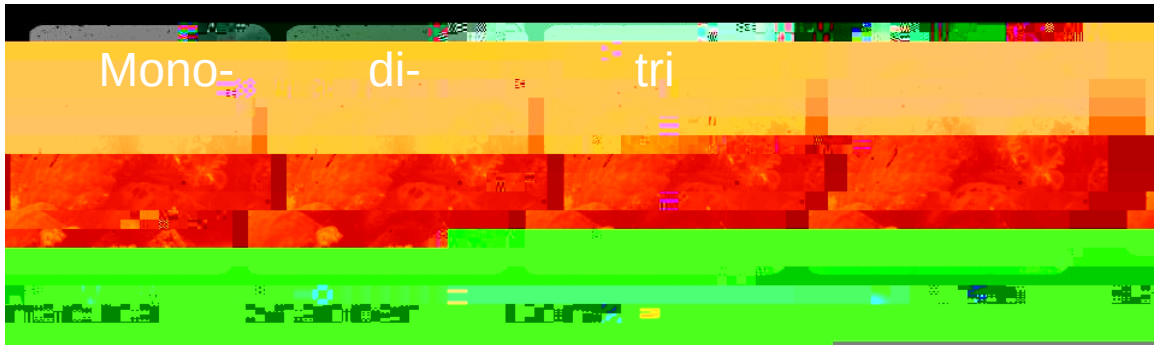


Physics and math implemented on a computer gives us this: spatially resolved images of major molecular orientation in each voxel.

seeing color in the visual world of multiple predators



Field + lab; 350-650nm range; acquire natl light images



Some prelim results:
Tetra- can see more color than trichromat
*in some cases, tri- can see more than tetrachromat
Clouds, time of day, depth affect who sees color best
REMINDER: baby step- measuring retina only; no perception
there is a huge amount yet to learn about color perception

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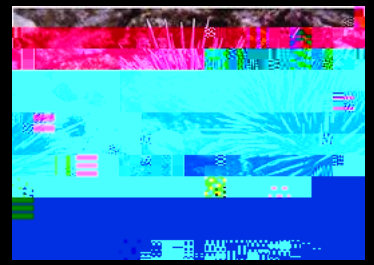
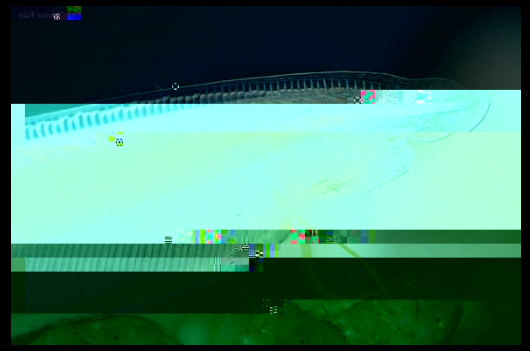
Collaborators:
C.C. Chiao
Stephanie Palmer
Derya Akkaynak

José Luis Gomez-Skarmeta, CABD (Seville, Spain), jlgomska@upo, Rowe 420

How different body shapes are generated during deuterotome evolution?



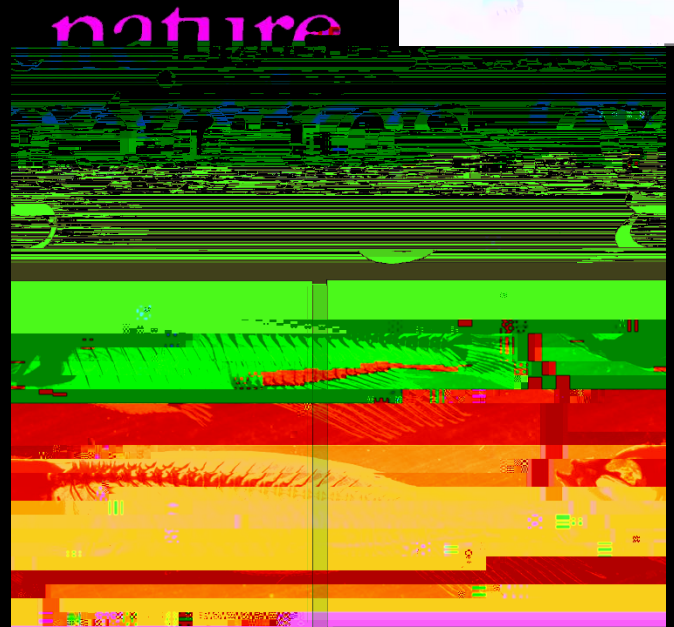


What is the

Epigenomics: ChIP-seq, ATACseq

3D Chromatin structure: 4C-seq, HiChiP, HiC

Functional studies in zebrafish/medaka/Xenopus



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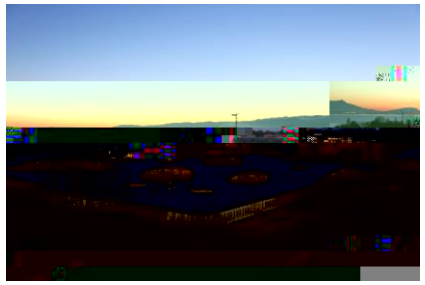
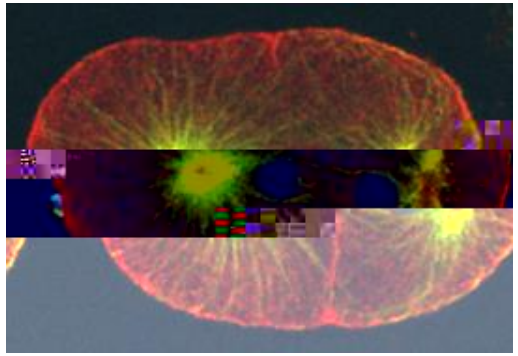


Swiss Federal Institute of Technology
Lausanne, Switzerland (EPFL)

@MBL: Centriole elimination

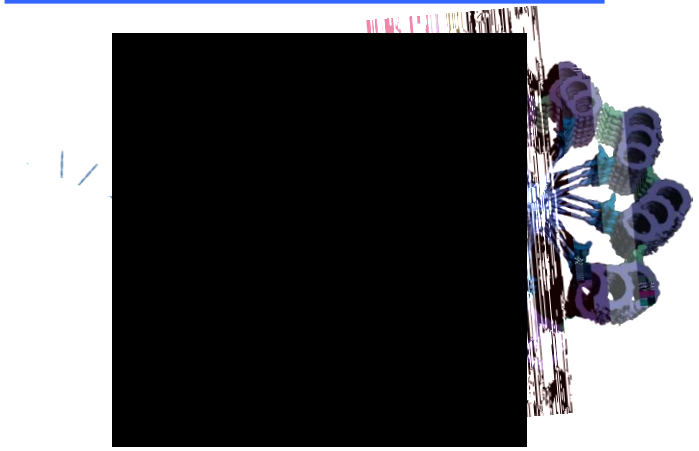
Nils Kalbfuss and Marie Pierron

Asymmetric division



C. elegans embryo

Centriole assembly



Use of high-speed imaging and fluid analysis to quantify how animals function in fluid environments

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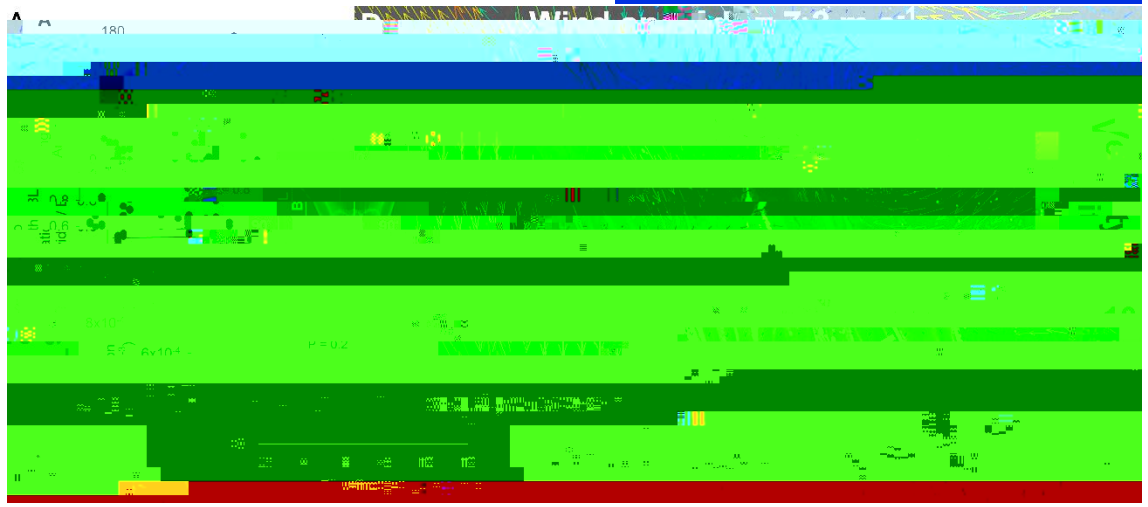
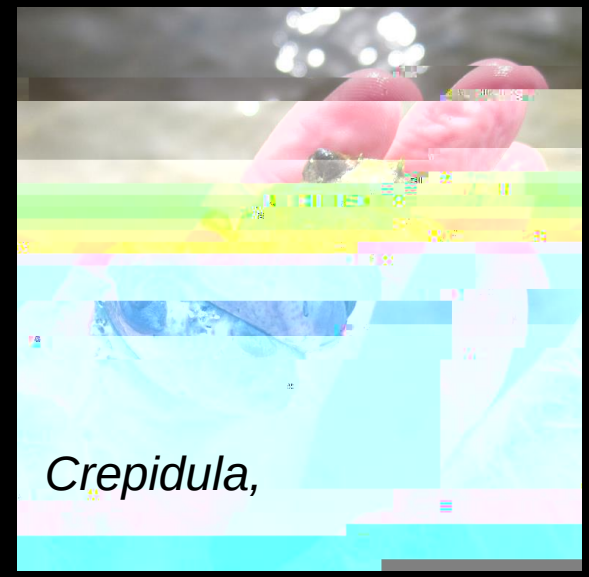


Understanding sex change in marine snails:
leveraging ecotoxicology to identify developmental mechanisms

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