

Images From Diana Bratu's Lab Featured In Cell's Journal Picture Show

Images taken in **Diana Bratu's lab** by Dr. **Irina Catrina** are featured in Cell's Journal Picture Show that was recently released, called Reproduction. The image titled "The Short End of a Long Stick" shows sperm cells from Drosophila.

Flies in the Drosophila genus produce the longest sperm cells on Earth. One species, Drosophila bifurca, has sperm that is 58 mm (2.3 inches) long. Our good friend D. melanogaster generates sperm that are merely ~2 mm long but still ~300 times the length of human sperm. Moreover, their sperm seem to navigate a female's reproductive tract by swimming backward, or tail first.

Drosophila sperm are delivered to the females in tangled coils, with ~4000 transferred in one encounter. Several species of Drosophila mate by traumatic insemination—the male pierces the female's abdomen and injects sperm into abdominal cavity.

Image: A whole testis was isolated from D. melangaster, fixed, and then imaged by spinning disc confocal microscope, 20X objective. Actin cones are stained green with phalloidin-FITC;

drongo mRNA is detected by RNA FISH using a molecular beacon fluorescent probe (AF647); and, DAPI stain nuclei blue.

(Inset) A snapshot of the sperm individualization process achieved by a cystic bulge that moves along the spermatid bundle. One cystic bulge contains 64 actin cones for the 64 syncytial spermatids present in a bundle. During this process most of the cytoplasm is discarded into a waste bag.

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