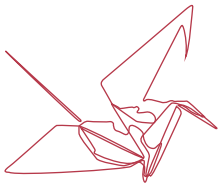
ZINE

CARL R. WOESE INSTITUTE FOR GENOMIC BIOLOGY
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

NO.1 FALL '17



The Carl R. Woese Institute for Genomic Biology (IGB)'s Art of Science program is a celebration of common ground between science and art. Each exhibit comprises images from IGB's research portfolio, enhanced to highlight the beauty and fascination encountered daily in scientific endeavors. The Art of Science includes subjects from the microscopic to the holistic, from the physical to the abstract.

NO. 1, FALL 2017
ZINE CONTRIBUTORS

CAROLINE BLASSICK
BIOENGINEERING

CLAUDIA LUTZ
IGB COMMUNICATIONS

COLTAN PARKER
NEUROSCIENCE

COURTNEY FENLON
IGB OUTREACH

NICHOLAS VASI
IGB COMMUNICATIONS

SAYEE ANAKK
MOLECULAR INTEGRATIVE PHYSIOLOGY

XIAOJI (CHRISTINE) LIU
FOOD SCIENCE AND HUMAN NURITION, (FORMERLY IGB)

XUDONG GUAN
IGB CORE FACILITIES

PRODUCT OF: ART OF SCIENCE
CARL R. WOESE INSTITUTE FOR GENOMIC BIOLOGY

THE MITOCHONDRIA

You lived alone once, they say,
you were your own house
with your own DNA.

Once you were free.
Now how you sweat
to churn out ATP

and transfer H^+.
You, the powerhouse
of all of us

can do no other–
like she who gave you
to me, my mother.

AUTHOR | CAROLINE BLASSICK

TO THE VIRGINS, TO MAKE MUCH OF THYME

Grow out your neurites while you may,
As over the fields you're flying;
For though with vigor you forage today,
Tomorrow you'll be dying.

The body that carries you round about
The more elite records you're setting,
The sooner its wings will be worn out
The nearer its last trip is getting.

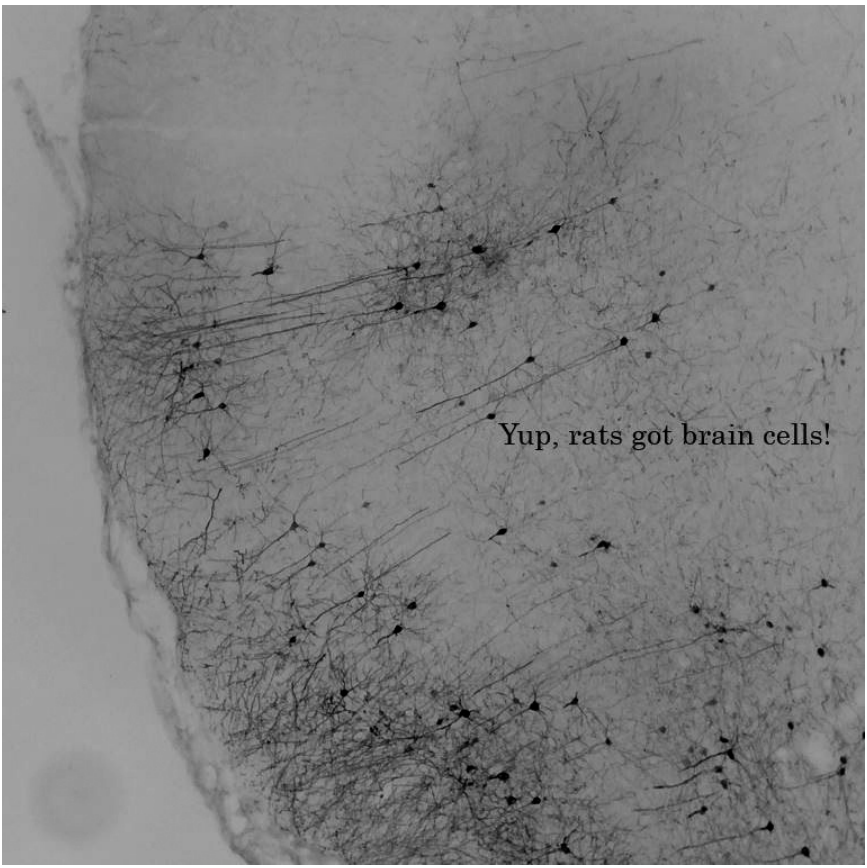
The flight is best that is the first,
When with new youth the brain starts learning,
But with muscles soon spent, so worse, and worst
Are the odds of a forager returning.

So, no more a hive bee, please use your time,
For memory, not just for flight;
If you share the route to the flowers most prime,
The hive's honey will last winter's night.

AUTHOR
CLAUDIA LUTZ

NEUROSCIENCE

Brightfield image of rat neurons, insular cortex.



AUTHOR
COLTAN PARKER

NO RIGHT ANSWER: WHY PU
MEANS N

There's still a lot I don't know about science.

I know how many picas there are in an inch (six), how many beats there are in a paradiddle (eight), how many seasons of Firefly there are (one) and how many seasons of Firefly there should be (a lot more than one). But when it comes to science I am very aware of how much there is to know, that I don't.

Now, given my job is to direct the communications group at the IGB, a leading scientific institute on the Illinois campus, I do have a pretty decent head start. And I'm happy to say I have absorbed a goodly amount of knowledge to the point where I can talk reasonably well on a number of scientific subjects that I had no understanding of six years ago when I started here. Yet what I have come to realize is that there is so much research taking place at such painstakingly detailed levels that someone with a general interest can easily get lost. And that's where a disconnect happens—whether you're reading a new book or touring an unknown city or attempting a fresh recipe, the moment you feel lost is the moment you begin to disengage. How do we combat this, generally in a society tempted with distraction through a wealth of ever-present media devices and specifically if your aim is to convey the wonders that researchers have brought about in the very labs next to your office? How do we keep that feeling of disengagement at bay, when our subject matter can be so intricate it requires those with specific training to even understand what questions to ask? I believe most people genuinely do want to learn something new, but not at the expense of feeling inadequate. So our problem is to present scientifically challenging concepts in a format that retains the intellectual value but compels the audience to delve in and seek a connection. Our solution is to provide context, create relatable narratives, and—literally—give it a framework by mounting it on the wall as a piece of artwork. Through the simple act of placing a physical border around an image and hanging it at eye level in a gallery, an airport, a hotel, it automatically becomes a waypoint for any audience to stop and consider more carefully. Anxiety over not understanding the science or feeling misplaced by the subject matter is alleviated, because art has no right answer. Each person imprints their own experiences on what they see, how it makes them feel, and what connotations form in their mind. Even the most disinterested of passersby will casually glance at something that was framed and placed on a wall—no matter

TTING ART ON THE WALL MORE THAN WE REALIZE

AUTHOR
NICHOLAS VASI

how dismissive they may be, at least we made them look. Which, when you consider it, is actually a pretty monumental feat.

At the IGB we are spoiled, for the research coming from our scientists is already astonishing in its innovation, already striking in its ingenuity. Anyone will tell you the better your source material the greater your end product, and here we are at the beginning with gold. There is however a small but crucial step where we take these raw materials and transmogrify them into an art installation through the imagination and vision of our creatives, where data be-come design and knowledge becomes notion. Where you discover an image of orange and blue clouds are real-ly clusters of bacteria, and these bacteria create gases that contribute to our climate, so the clouds you see on the wall create clouds you see in our sky. Now there is a link that has formed in your mind, we provided the com-ponents but you made the connection, and in doing so you are connecting not only with the art, but with the science, with the researcher, with the microscope, with the idea, all the way back to the instant when one person made a decision to pursue this particular path. In just a few moments you've learned a bit more about the biology of the planet, about the interlocking nature of life, and realized the depth of meaning in the smallest of particles all around us. That you did this only by reading a few lines of text and looking at a colorful picture on the wall is, quite frankly, astounding. That moment of discovery is important. It has meaning. It honors the work that our research community does and it gives value to the aesthetic principles which first compelled us to create the Art of Science. That the program has grown to be one of our most popular endeavors shows us what a motivated and curious public we have, who support science, who want to learn, and who have placed their trust in us to deliver that knowledge to them. This is an agreement that we take very seriously, and a challenge that we gladly accept.

There's still a lot I don't know about science. But through unique programs such as what we have here I'm given the means, and the encouragement, to rectify that.

PARALLEL DIMENSION

THE PLACE WHERE EXTRACURRICULAR ACTIVITIES ARE FOUND

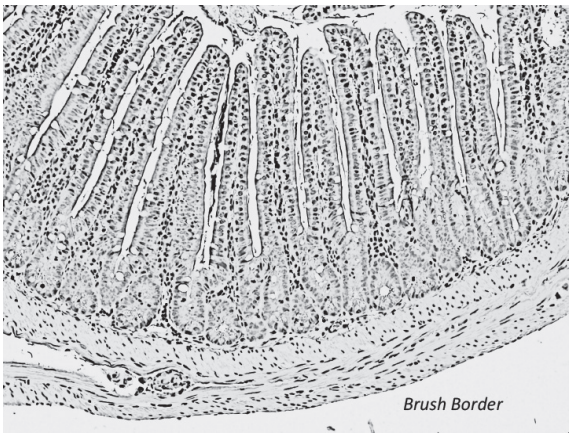
I WANT TO FLY BY XUDONG GUAN

GREAT EGERT BY XUDONG GUAN

ORIGAMI ARTIST
XUDONG GUAN

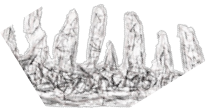
Each origami model is designed and folded from single piece of uncut square paper. More origami by Xudong Guan can be seen at https://xudong.wixsite.com/origamixudong

THAT
GUT FEELING



With gut microbes hitting the limelight in the recent past it is time to highlight the host gut tissue!

Microscopic image of the small intestine of a mouse stained with different dyes.



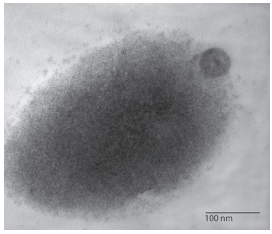
Artistic Illeum

MOLECULAR INTEGRATIVE PHYSIOLOGY

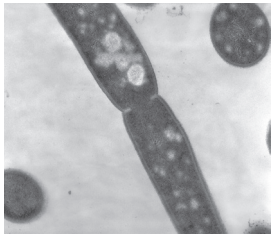
AUTHOR
SAYEE ANAKK

FORMERLY...
ELECTRON MICROGRAPH

"March-on!" Bacteriophage HM2 (top right) infecting a cell of solventogenic *Clostridium saccharoperbutylacetonicum N1-4*. Transmission Electron Microscopy. Image by Lou Ann Miller, Frederick Seitz Materials Research Laboratory.



A dividing solventogenic *Clostridium saccharoperbutylacetonicum N1-4*. Transmission Electron Microscopy (Magnification = 30,000x). Image by Lou Ann Miller, Frederick Seitz Materials Research Laboratory.



AUTHOR

XIAOJI (CHRISTINE) LIU

GENOME DAY

Join the IGB for its annual Genome Day
Gather your family and bring your bae
At the Orpheum Children's Science Museum, okay?
To learn about DNA on a Saturday

Come learn science while you play
Test your sense on a fancy bouquet
Find all the species in the Milky Way
How related are birds of prey?

Learn what scientists do day-to-day
Study the structure and extract DNA
Dance with plants, we will make way
See Art of Science that was up at Midway

Come to Genome Day, don't delay!

Genome Day is hosted by the Carl R. Woese Institute for Genomic Biology It will be on Saturday, November 4 from 1-5 pm at the Orpheum Children's Science Museum. Free and Open to the Public

AUTHOR
COURTNEY FENLON

THANK YOU TO EVERYONE THAT CONTRIBUTED TO THIS NEW ENDEAVOR AND TO THOSE THAT SUPPORT THIS CREATIVE SCIENCE COMMUNITY.

The Carl R. Woese Institute for Genomic Biology (IGB) advances life science research at the University of Illinois at Urbana-Champaign, serving as a centralized biological and biotechnological research facility at Illinois. IGB members conduct path-breaking genomic research in the areas of environmental conservation, food security, energy, health, and technology, and are drawn from many schools and departments including biology, chemistry, physics, engineering, sociology, and business. IGB research targets particular grand societal challenges–developing more effective cancer therapeutics, creating more efficient and robust food and fuel crops, uncovering the origins of life–and ranges from basic research that expands the horizons of human knowledge to applied research that builds on this foundational knowledge to create new technologies.

ART OF SCIENCE
WHERE SCIENCE
MEETS SOCIETY

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