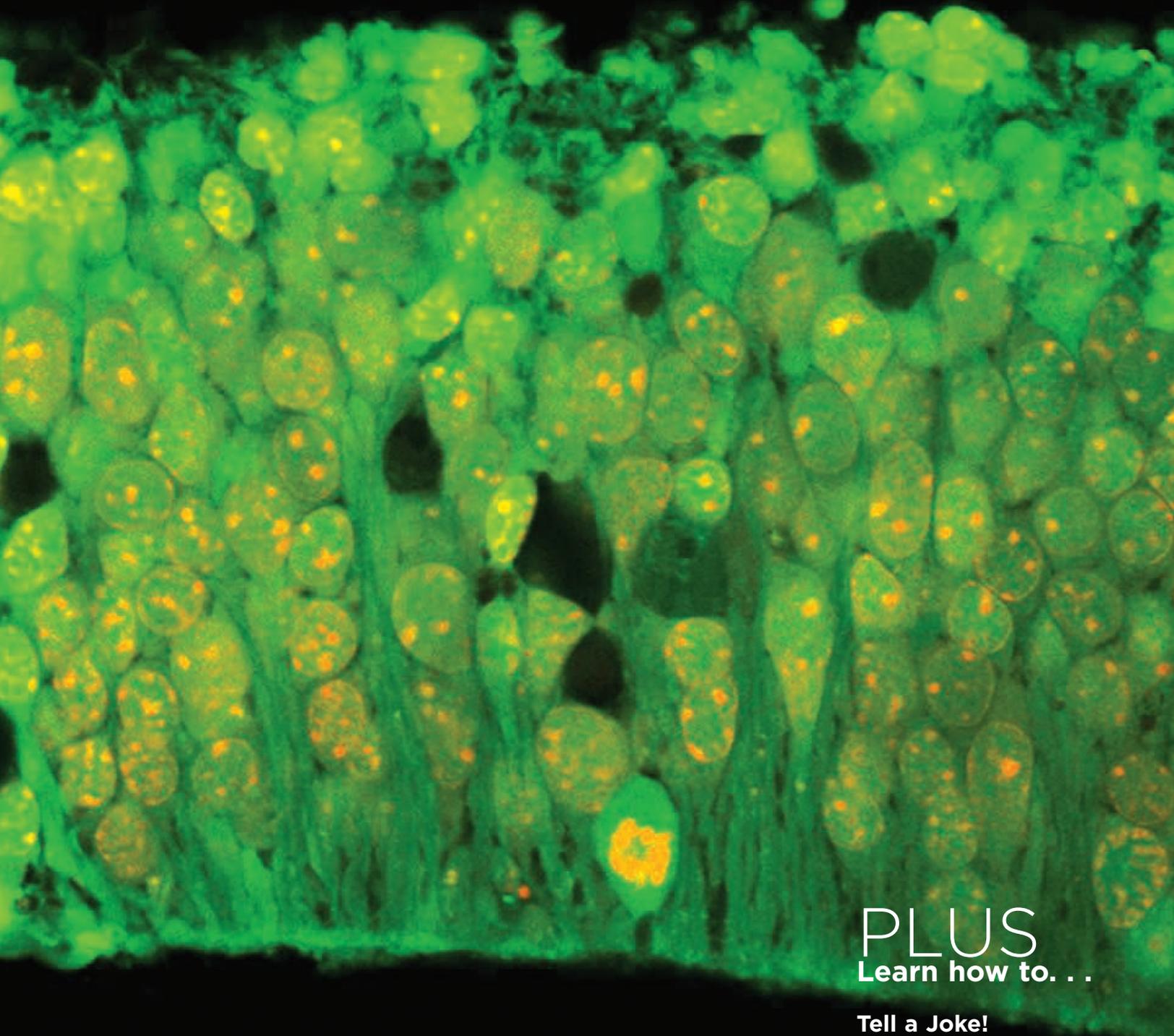


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FRIENDS SELECT SCHOOL Spring/Summer 2011



The Voice of Regeneration

Ira Pastor, Class of 1986

Expert Biotechnologist

In the Marvel Comic *Spider Man*, the enemy called Lizard is created when Dr. Curt Connors, distraught about the arm he lost in the war, creates a serum from reptilian DNA in hopes of acquiring the powers of regeneration. Not unexpectedly, there is an accident that goes terribly wrong. Connors becomes a monstrous humanoid lizard.

Ira Pastor probably won't be transformed into a lizard monster, but he may discover the secret to cell regeneration.

"Most drugs only work after the fact as opposed to reversing the damage," Pastor says.

"Reversing the damage, that's a Holy Grail situation for healthcare. That's our big picture."

Pastor and a business partner recently created Bioquark, a small start-up laboratory focusing on two areas: regeneration and

cellular repair. "We look at amphibian tissue, specifically their eggs and the genetic and cellular changes that happen when amphibians regenerate," he says. While many amphibian species can regenerate, re-growing limbs, organs and spinal columns, the only time a similar event occurs in humans is during fetal development. "Amphibians have eggs that are quite similar in chemistry to humans. Genetically we're a lot closer than many people would like to think."

Pastor catalogues every genetic and chemical event that occurs during regeneration with the hope that he can mimic the process in humans. "We can isolate RNA and proteins and other bioactive chemistry that is applicable to human drug development," he says. "It's another example of using the natural kingdom to develop pharmaceuticals." Pastor is a pharmacist by undergraduate training, and spent much of his life around medicine, since his father started a pharmaceutical company in the 1950s.

Should Bioquark discover a way to bottle

the regenerative capabilities of amphibians, it would completely transform the way we currently treat disease. "Think of all the places where a critical organ doesn't regenerate – the heart after a heart attack, the spinal cord after a paralyzing event, brain damage after traumatic injury, the pancreas after the onset of diabetes," Pastor says. "It can apply to so many diseases."

At Friends Select, Pastor leaned toward the sciences, despite causing a fiery accident during advanced chemistry. "I almost blew up Will Braveman's (Class of 1986) hands. I thought we were going to have to use the emergency shower." No one was hurt, and Teacher Bok Read (Chemistry, 1970 to 1990) quickly got the situation under control. The incident did not do anything to quell his interest in the life sciences. "I remember Teacher Pat Shepherd (Biology, 1983 – 1988) being a real influence as far as doing real research and understanding scientific procedure," he says. "FSS taught us to turn a hypothesis into something solid, and I learned to think through a problem independently."

How to Sink a Three-Pointer Ben Holl '13, Shooting Guard

Take it from someone who knows: sophomore Ben Holl led the Friends School League this year with 64 three-pointers. Here are his tips to get a basket every time, even behind that 19' 9" line.

1. Pick your shot. (It's not good to surprise teammates with uncharacteristic shots.)
2. Square your feet so that they face the basket.
3. Slightly bend your knees.
4. Keep your eyes on the basket.
5. Line up your elbow to the hoop, facing the direction you want the ball to go.
6. Form an "L" with your elbow and shooting arm.
7. Keep your back straight and your hand behind and toward the underside of the ball.
8. Make a jump-shot by springing off the balls of your feet. Release the ball at the height of your jump.
9. Roll the basketball up toward the top of your fingers, so that the ball spins off your fingertips.
10. Follow through on your shot. Fully extend your arm after you release the ball. (Your extended shooting arm should be lined up with the basket.)
11. This motion will help you to shoot the ball in an arc, not a straight line.
12. SWISH!

Now, get back on defense!

■ Web Extra: To see Ben Holl shoot three-pointers at the Friends Select School gym, go to friends-select.org and select Videos.

