



## ARCHBOLD SEPTEMBER 2019 NEWS for curious minds



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### Genetic Rescue



Florida Scrub-Jay at Archbold.

When a population of animals becomes isolated from its kin, biologists worry about the loss of genetic diversity and potential inbreeding. Introducing new individuals with different genes makes sense. But does it work? Researchers like [Dr. Sarah Fitzpatrick](#), an evolutionary biologist at Michigan State University's W. K. Kellogg Biological Station and Dr. Nancy Chen, a population geneticist at the University of Rochester in New York, shared [new research](#) into the **emerging science of 'genetic rescue' at the recent 'Evolution 2019' conference in Providence, Rhode Island. Fitzpatrick shared, **"We have genomic tools to study these populations...in ways we never could before.** The urgency of the problem and the availability of the tools makes it a really exciting time." Fitzpatrick and her colleague Dr. Brendan Reid introduced new guppies into two isolated guppy populations in mountainous streams of Trinidad. "In both streams, the populations increased 10-fold and genetic diversity doubled." While most guppy offspring were hybrids in later**



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"Archbold Biological Station is one of America's iconic centers of continuous research and education in field biology. It is a prototype of what we need all across America."  
— Edward O. Wilson

generations, they found the fish introduced quickly to the local population (did not have to swim a long way downstream) eliminated the nonhybrids suggesting **"a slow trickle of immigration might be preferable"**. This cautionary tale is reflected in Chen's work. Chen analyzed blood samples from Florida Scrub-Jays at Archbold finding the Archbold "population naturally gets a slow infusion of new blood" from nearby small populations of jays. However, "with fewer birds arriving in recent years because of population declines, that (genetic) diversity is declining". **Computer modeling by Chris Kyriazis also suggests that "intermediate-size populations, not the biggest ones, could be the best source for genetic rescues"**. [Read the full story here](#) in Science.

## **Bert Crawford: 45 years and Counting!**



Bert Crawford remodeling Cottage 6 at Archbold this summer.

**September 1st 2019 was the 45th anniversary of Bert Crawford's employment at Archbold.** Starting here in 1974, he overlapped with founder Richard Archbold for two years. Hilary Swain noted, "It is almost impossible to fully appreciate the breadth and depth of Bert's hard work and dedication to Archbold over the years. As Operations Manager, Bert has always been Archbold's renaissance employee. He has the smarts, the skills, and the experience to tackle just about anything his job entails". Bert is a memorable part of so many people's learning experience here. Countless visitors and employees sing his praises from electronics to welding, woodworking, prescribed burns, instrumentation, car mechanics, security, communications, green buildings, energy systems, etc... The list goes on and on. Every year brings new technologies, ideas and approaches: Bert seamlessly adds them all into his skillset. Chair of the Archbold Board Mary Hufty shared, "As Florida prepares for Dorian, the first of the 2019 Hurricane season, I am reminded of one of Bert's strongest attributes- COURAGE! Bert has been Archbold's

strength through many a storm, trial, and change. And it doesn't stop there: what good is courage without wisdom and what good is wisdom without strength and a sense of humor? **Thank you, Bert, for providing a home at Archbold for the board, the scientists, the staff, the students, and all the visitors, as well as our beloved scrub flora and fauna for these 45 years.**"

## Garvin, Tarvin, and the Screaming Jays



Dr. Mary Garvin and Dr. Keith Tarvin together on Red Hill at Archbold.

[Mary Garvin](#) and [Keith Tarvin](#) are professors of biology at Oberlin College. Their story together began nearly 30 years ago in the special sandy wonderland that is Archbold Biological Station. **Back in the early 90's, Mary and Keith came to Archbold as interns in the Bird Lab to study Florida Scrub-Jays and Blue Jays** under the tutelage of Dr. John Fitzpatrick (Cornell Lab of Ornithology Executive Director) and legendary Ornithologist [Dr. Glen Woolfenden](#). Immersed in a supportive community from Bert Crawford and crew to Frances Speakman and Hattie Troutman in the kitchen, Mildred Crawford, Verna Dunbar, and others, to world-renowned scientists like Ernst Mayr, they recalled, "**Every day held lessons on thinking like a scientist and problem solving.**" Most meals and breaks in the dining room evolved into discussions of someone's project which developed our critical thinking skills." Mary's Archbold field work on mosquitoes and viruses in Scrub-Jays and Blue Jays launched her current Disease Ecology career. And, Keith's Archbold field work studying Blue Jay behaviors led to his career as a Behavioral Ecologist working on social behavior in birds. Beyond the science, they shared, "On weekend nights, we'd have jam sessions with the likes of Steve Schoech (University of Memphis), Ron Mumme (Allegheny College) and other folks playing guitar, harmonica, mandolin, and whatever instruments they happened to have around. That was the beginning of the 'Screaming Jays' which lives on today occasionally reuniting for performances at ornithology conferences." With such fond memories, no wonder the married professors returned to Archbold for the month of August adding, "What a privilege and treat to work at such an incredible field site. Thank you."

## Public Events

Nov 14: 3:30-4:30 PM

Distinguished Speaker Seminar

'Community Dynamics and Restoration in a Warmer and More Invaded World'

Katie Stuble, Holden Arboretum

## Alltech-Archbold Research Alliance



Archbold and Alltech research staff join forces at Buck Island Ranch.

**Research staff from Alltech visited Buck Island Ranch this past July for the first meeting of a new Alltech-Archbold Research Alliance.** [Alltech](#) is a private business that "helps farmers feed the world, raise healthy plants and animals, and protect the environment through animal nutrition and scientific innovation". While collaborating with Gene Lollis, Buck Island's Ranch Manager, on supplemental feed strategies in Florida, Alltech learned about Archbold's agroecology research and saw a unique opportunity to partner with Archbold. Dr. Betsey Boughton, Buck Island Ranch Research Director, said, "The research alliance between Alltech and Archbold's Buck Island Ranch is an **exciting collaboration to advance ranchland environmental and economic sustainability**. Combining Archbold's rich ecological knowledge and long-term data with Alltech's expertise in cattle nutrition is a unique opportunity to better understand the linkages among grassland management, forage composition, and cattle methane emissions and ultimately may lead to improving supplemental feed strategies and reducing cattle methane emissions in Florida and other subtropical grassland regions. The collaboration will also provide educational opportunities for post-baccalaureate research interns to experience hands-on agroecological research on a full-scale cow-calf operation."

## One Parcel at a Time



New parcel of conservation land for Archbold.

### **Throughout the years, Archbold has benefited from donor funding acquire strategic parcels of conservation land surrounding our pro**

This helps us meet our conservation goals while contributing towards conservation of the Lake Wales Ridge. Recently, Archbold acquired a parcel of land at the south end of the Station. The land is a mix of native habitats with seasonal wetlands, flatwoods, and Florida scrub including Florida rosemary scrub. This beautiful property features many federally endangered plants including Wedgeleaf Button Snakeroot (*Eryngium cuneifolium*) and Whitlow-wort (*Paronychia chartacea*). In Archbold's quest to protect important contiguous parcels of land, we are grateful to many individual donors and conservation partners who support our conservation mission by donating funding for vital land purchases. There are still precious parcels of scrub remaining in our vicinity. **If you are interested in helping Archbold's conservation mission and saving the scrub, [contact Deborah Pollard](#) in Philanthropy.** We look forward to working with you.

### **Directions to Archbold Biological Station**

Eight miles south of Lake Placid. Entrance is 1.8 miles south of SR 70 on Old SR 8.



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