Name: Malar (ambassador bird)

Age: 6 years

Sex: Male

Species: American kestrel (Falco sparverius)

Species nickname: Sparrow hawk or Killy hawk

Taxa: Order Falconiformes, Family Falconidae (falcons and caracaras)

Average lifespan: About five years if they live past their first year, which is the hardest year of life for a wild raptor. Captive birds have been known to live 15 years or more.

Migratory pattern: While there are year-round sightings of kestrels in Minnesota, they tend to move further south, sometimes “leapfrogging” past resident birds in the southern United States to winter in Central and South America. They breed across the United States and Canada.

Diet: Kestrels prey on grasshoppers, dragonflies, and other insects as well as rodents and small birds.

Malar’s story: Malar was admitted with a wing injury after being found on the side of the road. After treatment, he was deemed non-releasable and now lives at The Raptor Center as one of our educational ambassadors. He did 234 programs in 2017!
This summer, The Raptor Center welcomed five new staff members and three new interns. The additional staffing will help support TRC as it works on the Partners for Wildlife initiative as well as many other new projects. Please join us in welcoming the new, talented additions to our team.

**New staff landings**

**Joanna Eckles**  
Curator of birds

Eckles oversees TRC’s collection of educational raptors, supervising their daily care, maintenance, and training, with a focus on maintaining the health and welfare of the cohort.

**Micaela Brevig**  
Interpretive naturalist

Brevig is responsible for advancing TRC’s mission of public outreach by providing on- and off-site educational programs using live birds. Brevig assists with the physical care, training, and management of TRC’s educational ambassadors.

**Josh Traver**  
Rehabilitation coordinator

Traver oversees the captive management of clinic patients and the prerelease conditioning phase of their recovery. He also makes arrangements for their release.

**VETERINARY INTERNS**

Participants of TRC’s Raptor and Avian Medicine Internship will gain hands-on clinical training in raptor rehabilitation as well as general avian medicine and surgery.

**Annette Ahlmann, DVM**  
Veterinary intern

Ahlmann comes to TRC from a small-animal emergency hospital and is a recent graduate of University of California, Davis, School of Veterinary Medicine, where she specialized in wildlife and zoo medicine.

**Kyra Knutson, DVM**  
Veterinary intern

A recent graduate of Oregon State University Carlson College of Veterinary Medicine, Knutson began volunteering at a local wildlife rehabilitation facility when she was 15 years old, sparking an interest in avian and wildlife medicine.

**Partners for Wildlife**

Partners for Wildlife is TRC’s newest initiative, which aims to improve the welfare of animals by strengthening and expanding rehabilitator capacity for treating and rehabilitating impaired wild animals.

**Erica Ellis, DVM**  
Wildlife rehabilitation intern

Ellis is responsible for patient medical and surgical management and will spend half of her time at the Wildlife Rehabilitation Center of Minnesota.

**Molly O’Bryan**  
Program director

O’Bryan is responsible for coordinating and managing all components of the Partners for Wildlife initiative, including daily operations.

**Crystal Fernandez**  
Executive administrative specialist

Fernandez provides overall administrative support to key personnel of the Partners for Wildlife initiative.
The Raptor Center (TRC) will focus on combating the growing “nature deficit” among Minnesota’s youth with a program that prepares teachers to take students outdoors to practice science.

Outdoor Investigator—a learning module within an online learning environment called “Raptor Lab”—will be taught to more than 500 teachers across the state in 60 daylong educational sessions over the next year.

Outdoor Investigator follows the Researcher and Veterinary in Training modules the center developed through a $270,000 grant from the Minnesota Environment and Natural Resources Trust Fund. The program aims to incorporate technology into outdoor science learning by allowing students to use personal devices as tools for science investigation.

TRC is working with staff at Wolf Ridge Environmental Learning Center in Finland, Minn., and Eagle Bluff Environmental Learning Center in Lanesboro, Minn., to deliver the teacher training in northern and southern regions of the state.

Teachers are already praising the program. Jim Schneider, who teaches science to grades 7–12 at Northome School in Northome, Minn., says, “I really liked this workshop because we were able to try the ideas out for ourselves. We also were given ample time to talk and trade ideas for the use of some of the techniques.” Amber Murray, a 6th- and 7th-grade science teacher in Thief River Falls, Minn., says, “Overall, it was a great experience that was motivating and enabled me to expand my teacher toolbox.”

“We want to empower teachers through this curriculum to do more outdoor learning with their students,” says Mike Billington, education program manager. “Teachers are learning how to use the environment as an educational tool so they’re not starting from scratch with their students.”
New posters in one of our classrooms provide information on different habitats in Minnesota, and new wall panels facing the education birds housed in the glass galleries provide information on raptor adaptations and migration.

**BIRD-SAFE GLASS**

A film has been added to the glass doors at TRC’s entrance, depicting a falcon stooping and a murmuration of starlings. The images were created to demonstrate one technique used to make glass bird-friendly and help prevent window collisions. More information about this and other major causes of injury to raptors can be found on film covering the windows in the Visitor Center main lobby.

**PATIENT CARE GAME**

This fall, a new interactive exhibit was installed in The Raptor Center’s Visitor Center. This new exhibit—which is made up of a series of three-sided columns—brings the clinic upstairs so visitors can follow sample cases through the rehabilitation process. The installation shows six clinical cases from every angle, including diagnosis, treatment, and prerelease conditioning.

**NEW TREE TENANTS, POSTERS, AND SCULPTURES**

Since we installed the tree last spring, new inhabitants have moved in, including a screech owl family and a bald eagle chick and adult.
Jim Johnston remembers the exact moment he became an advocate for raptors: “I was about 10 when I saw my first eagle’s nest in northern Michigan.” Jim thinks it was 1966, one year before bald eagles below the 40th parallel gained protection under the Endangered Species Preservation Act.

But it wasn’t until after he and his wife, Mary, moved to Minnesota that Jim immersed himself in helping raptors. “One day, we went to the volunteer section of The Raptor Center’s website,” Mary recalls. “And we saw just how many volunteer opportunities there were.”

Seven years later, Jim, a volunteer on the transport crew, has been involved in hundreds of raptor transports, rescues, and releases. He recalls one trip in particular, where he and his mentor, longtime volunteer Terry Headley, had to board a paddleboat to rescue a baby eagle from an island.

This year, Jim and Mary increased their commitment to TRC. Mary became a transport volunteer in April, and the couple included TRC in their will after receiving a letter from TRC Co-founder Pat Redig, DVM, PhD, detailing why he was including TRC in his estate plan. “We are impressed with the professionalism of The Raptor Center and that it is a teaching and research institution in addition to being a rehab facility,” says Mary.

The Johnstons are concerned that people will begin to take raptors for granted, and they hope TRC’s work continues well into the future. “When I first saw that nest a half century ago, you never saw eagles,” Jim says. “Now you can sit on your deck and watch them fly over your house, and that’s because of the people who work here.”

If you are interested in joining Jim and Mary Johnston by making a commitment to ensure The Raptor Center’s future, please contact Ellen Orndorf at 612-624-8457 or eorndorf@umn.edu.
Organizing chaos: a day in the trauma center

by Paige Polinsky

“There is no typical day,” says Lori Arent, ’89 MS, assistant director of The Raptor Center (TRC). Its trauma center treats about 1,000 sick and injured wild raptors every year, and each day presents new challenges and victories. The medical team often handles up to 30 unique cases a day during the busy summer months with determination and grace. Not every story can end with a full recovery. But in TRC’s trauma center, every patient is afforded compassionate, capable care, and every case serves as a useful opportunity for the many students and professionals studying veterinary medicine there.

August 15, 2018

8:30 a.m.: The staff meeting is underway. Having completed patient evaluations during morning rounds, the team exchanges updates and assigns cases. They break after a quick “Go team!”

8:48: The kitchen bustles with volunteers who consult today’s patient treatment forms, prepare raptor food, and pull medications. “We couldn’t do this without them,” says Arent.

Back in the treatment room, volunteer Kevin Corless restrains an adult bald eagle. One table over, volunteer Cliff Salmon holds a juvenile bald eagle. The raptor bites his gloves, making grunt-like noises. A plastic sheath covers its tail. Jamie Clarke, TRC’s senior veterinary technician, explains that tail sheaths are used to prevent broken tail feathers on patients housed in relatively small spaces during their convalescence.

9:04: TRC’s staff veterinarian, Michelle Willette, DVM, MPH, DACVPM, listens to a great horned owl’s heartbeat before adjusting its anesthesia, while clinical intern Erica Ellis, DVM, observes. Radiographs (x-rays) reveals an ulna fracture in the patient’s left wing. Willette unwraps the bandage, which is protected by a top layer of duct tape. The duct tape helps prevent patients from tearing off their bandages.

9:20: Beth Dixon, a recent DVM graduate visiting from England, brings a Cooper’s hawk into the exam room. “These ones are usually quite feisty,” she says. But this Cooper’s hawk is unable to use its legs, most likely due to spinal trauma. In many cases, TRC considers euthanasia the most humane option for patients like this. The moment, though routine, is somber. “It’s a big part of wildlife rehabilitation,” Dixon says. “It’s just not the part we go into this field for.” In the main room, Clarke examines a Cooper’s hawk with a femur fracture.

This one lives up to the species’ reputation. The hawk is wiggly and bites at his fingers.

9:30: Willette gently runs a blow-dryer over the owl’s wing. “Feathers aren’t living tissue,” she explains. “If you have a lot of wetness, they can actually mold.” She and Ellis ensure the freshly irrigated wound is dry before applying a new bandage.

Photos by Nathan Pasch
**10:04:** TRC’s veterinary resident, Dana Franzen-Klein, DVM, examines a red-tailed hawk. Eight days ago, the hawk had surgery to correct three broken wing bones. The road to recovery looks long, and the prognosis is guarded.

If the bones heal well, the raptor will still require gentle physical therapy and a lengthy period of reconditioning. “But we’re going to give it a shot,” Franzen-Klein says.

**10:52:** Arent heads to the flight hall, where TRC’s rehabilitation coordinator, Josh Traver, waits with an American kestrel. Heavy tarps hang from curtain tracks, blocking off exit points. A tall wooden perch stands at each end. Here, Traver and Arent exercise small raptors and evaluate larger patients to see if they are ready for the outdoor exercise program.

Arent walks to the far perch. This kestrel, she explains, was brought to TRC at only three weeks old. Due to his young age, the kestrel’s flight feathers were not fully developed and his flight ability was limited. Originally, the finder mistook this for an injury, but the clinic will help him build flight muscles until he is strong enough to survive in the wild.

The kestrel’s flight is a bit awkward as he learns to use his wings. Whenever he lands, Arent and Traver wait for him to stop panting. Then they slowly step toward him, a motion that encourages the young falcon to fly to the other end of the fifty-foot-long hall.

When the session ends, Traver turns the lights out. Most diurnal raptors, such as hawks and falcons, typically don’t move much in the dark, and this is a clinic standby for securing patients. After thirty seconds of darkened hush, the lights flip back on and, like a magic trick, the kestrel is back in Traver’s hands.

**11:40:** Back in the main room, Willette and Ellis begin a physical exam on a great horned owl that recently arrived. Many new patients do not have a clear cause for their poor condition, requiring the team to perform some intense investigative work along with treatment.

The patient is one tough cookie—his radiographs reveal two fully healed fractures. Ellis carries him to the kitchen for medications. Terri Headley, a 20-year veteran volunteer, holds out chunks of raw meat on tongs. The owl eats it eagerly.
12:10 p.m.: Shrill wheezing fills the main room. “That eagle swallowed a squeaky toy,” Franzen-Klein jokes. The admission sheet says the juvenile bald eagle is “too friendly.” Where wild raptors are concerned, an abnormal interest in humans could mean medical trouble. West Nile virus is one possibility, Willette says. In Phase 2 of the virus, birds exhibit mental dullness and disorientation. But this patient hasn’t shown any clinical signs. He could just be too habituated to people—apparently, some concerned humans caught him by tossing a fish in a kennel. He walked right in.

12:30: Franzen-Klein examines a monthlong resident of the clinic. The red-tailed hawk arrived with severe electrical wounds. Happily, the hawk is well on her way to recovery. The thin new skin on the bottom of her foot is flaky and light pink. Franzen-Klein dabs it with a medication that will help it thicken. In a little over a week, once the hawk’s stitches are removed, she’ll be ready for flight reconditioning.

2:05: Afternoons are for new admissions. Dixon and Ellis assess a broad-winged hawk that flew into a window. They listen to its heart and lungs before clearing it for anesthesia. Franzen-Klein emerges from radiology with another newcomer, a barred owl, and calls out for painkillers. This owl has a broken right wing, and it will take a series of radiographs to know whether the fracture is fixable.

2:32: The broad-winged hawk has severe eye damage. It’s not a candidate for release, and rehabilitating the hawk for placement at a permitted educational facility would require the eye’s removal. “That’s just asking too much of this bird. Broad-winged hawks do not tolerate captivity very well,” Willette says.

The barred owl’s prognosis is equally unfortunate. Franzen-Klein and Annette Ahlmann, a clinical intern, study his radiographs. A large piece of bone is missing, and shards pepper the surrounding area. The break’s close proximity to a joint presents further complications. This is not something surgery can fix.

As Ahlmann and Franzen-Klein make him comfortable in his final moments, they praise the softness of his feathers. His case, though upsetting, is no less valuable than the trauma center’s many success stories. Says Arent, “A lot of teaching and learning goes on here.”
Reducing chemical threats to raptors

by Fran Howard

The U.S. Government Accountability Office reports that 84,000 chemical substances are in use in the United States, some of which have become essential to daily life. Few are regulated, and fewer yet have been studied for their potentially harmful effects. The Raptor Center (TRC) is continuing its tireless efforts to protect raptors from these dangerous and often lethal chemicals.

In August, a federal appeals court ordered the U.S. Environmental Protection Agency (EPA) to ban chlorpyrifos—an insecticide that is likely to adversely affect 97 percent of all threatened and endangered animal species, according to the EPA.

Neonicotinoids, which belong to another category of insecticides, have also generated attention because of their impact on pollinators.

The EPA is now looking to re-register neonicotinoids for use and, in doing so, is collecting information on their impact, including their impact on birds. Recently, the EPA requested public comments from TRC and the center’s research colleagues. They have asked the research team to conduct professional webinars on the subject.

Carbofuran, banned for use in the United States for decades, continues to be used to kill pest and predator animals in many areas of the world. In Maryland alone, at least 18 bald eagles have been poisoned over the last few years after scavenging on carcasses laced with the chemicals. Bald eagles have also been poisoned in Montana and Wisconsin.

Vultures are particularly vulnerable to contaminated carcasses. In the 1990s on the Indian subcontinent, 40 million vultures—99 percent of the population—died after scavenging on dead cattle treated with diclofenac, a nonsteroidal anti-inflammatory drug. Yet, this drug was approved for veterinary use by the European Union in 2013. In partnership with others, TRC is now evaluating the use of diclofenac on the Iberian Peninsula and the risks its use presents to vultures.

A 2011 study by Tufts University of Medford, Mass., showed that 86 percent of four raptor species in a rehab center tested positive for second-generation anticoagulant rodenticides. The study was repeated in 2015 and showed a 96-percent prevalence, with 66 percent of the birds testing positive for multiple second-generation rodenticides.

While the chemicals are now banned from consumer use, it appears that growing rodent populations, caused by increasing urbanization and milder winters, have increased demand for professional pest management services that still use these chemicals. TRC is now developing tools to evaluate coagulation rates in birds.

Chemical use is a complex, ever-worsening issue. The need for research and education is vast, and sociopolitical challenges often delay solutions. TRC uses a systems approach—research, education, rehabilitation, and outreach—to advocate for the environment, wildlife, and raptors. After all, we can all benefit from a cleaner world.
John Gabbert, son of John D. and Martha W. Gabbert, who are the namesake for The Raptor Center’s building, releases an American kestrel on August 29.

Contact us

**Donations**
Gifts, endowments, estate gifts, and grants:
Ellen Orndorf, 612-624-8457, eonrdorf@umn.edu
**Sponsor-a-raptor program:** Sue Wenker, 612-625-0201

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