



animal attraction

BY AUDREY R. BROWKA photos: courtesy of Michael Noonan, PhD

Considered among a special breed of professors, Michael Noonan, PhD, takes students where the wild things are, to study animal behavior.

It's **5:00 a.m.** and the buzz of an alarm clock rocks Michael Noonan, PhD, from his sleep. He rolls out of bed, showers, dresses and grabs something to eat before he walks out the door of his Southtowns home. He heads to the Peace Bridge. The international border crossing is the designated meeting place for Noonan and several Canisius students and he cannot be late. Each weekday morning the group gathers here at **5:30 a.m.**, where they climb into one vehicle for a 30-minute drive across the border to Marineland, Ontario.

The gates to the Canadian theme park are locked when they arrive. No matter. Noonan

and his students are welcome. In fact, between the hours of six and nine each morning, they are the only visitors at the park. Noonan's prime interest, however, is not the rides nor attractions. It's research conducted at the whale habitat, one of the largest in the world.

"Each morning I watch the sun come up with these beautiful whales rolling and spouting water in front of me," exclaims Noonan. "It's as if I am seeing heaven."

With such astonishing sites, it is easy to forget that Noonan is here to learn how Killer Whales, also known as Orcas, think and process information. Known as cognitive pro-



“the invitation to start a research program at marineland and has literally turned my research around.”
 —mike noonan

PICTURED RIGHT: NOONAN AND THE MARINE MAMMAL STAFF AT MARINELAND, WHOM ASSIST HIM EACH MORNING IN HIS KILLER WHALE RESEARCH.



cessing, it's a behavior that first intrigued Noonan as an undergraduate student at Notre Dame University. Since then he has researched cognitive processing in monkeys, apes, giraffes and rats. But it is cognitive processing in Killer Whales that he finds most fascinating.

“These mammals are more closely related to humans than most people realize,” says Noonan, who notes that despite their ferocious name, Killer Whales are actually friendly, affectionate and highly intelligent animals. “Killer Whales can perceive time. They can perceive quantity. We know they perceive

each other's moods and they perceive each other's voices. What we do not know is *how* they perceive all those things. What goes on in their minds?”

Noonan has dedicated much of the past eight years to figuring this out. “It used to be that 90 percent of my research was lab-based and only 10 percent was zoo-based,” explains Noonan. “But in 1997, Marineland expanded the park considerably and invited me to start a research program. It was an absolutely wonderful opportunity and with the help of the phenomenal Marineland staff, it has literally turned my research around.” But his Orca

research is just one of several labors-of-love that fill his 16-hour days.

“When people ask me what I do for a living, I tell them I have three jobs,” says Noonan. “About a third of my time is spent on research, a third is spent on coursework and a third is spent on the Canisius Ambassadors for Conservation (CAC) program.” Each job functions independently but Noonan is quick to point out they all share a common purpose. “Everything I do involves teaching students.”

And so, by 6:00 a.m. each morning, while many of us are still asleep, Noonan and the students he refers to as “junior colleagues”





THOMAS DiVITO '07



DANA CUSANO '07



GRETCHEN WAGNER '05



MALINI SUCHAK '07

are already hard at work at Marineland. With an impressive array of electronic equipment at their fingertips and Marineland's marine mammal staff by their sides, each student collects distinct data on Killer Whales for a series of research projects.

"The students work with the Marineland staff and me to approach cognitive thinking in Killer Whales from different perspectives, all of which are intended to give a greater understanding of the animal," explains Noonan, who is interested in everything from the paths Killer Whales swim to how they think ahead in terms of time. The most significant effort in his lab, however, currently centers on Orca vocalizations.

"Each sound a Killer Whale makes signifies something and it is our job to figure out what it means," says Noonan. He has successfully distinguished 30 unique sounds made by Killer Whales and five of their functions including navigation sounds, pro-social sounds and even 'bad mood' sounds. It may take years to identify the remaining 25 sounds. Meanwhile, Noonan and his students are finalizing another study on Orca vocalizations.

"We are trying to determine if the voices of Killer Whales have individual distinctiveness," explains Malini Suchak '07. A biology major, Suchak has spent the past 15 months working along side Noonan on this particular research project. "Right now we have really good evidence that Killer Whales do have distinct voices."

Noonan asserts that not only do Orcas have distinct voices, they also recognize the voices of other whales, just as humans recognize the voices of other people. He is due to release the complete findings from this study later this year and when he does, it will be a coup within the scientific community, particularly among Noonan's peers in the marine mammal society.

While the scientific community eagerly awaits Noonan's next findings, it continues to absorb his most recent discovery that found Killer Whales to be among those animal

species who demonstrate cultural learning – a phenomenon in which animals of the same species learn from other members of their group.

"It was once believed that most animal behavior, from the food they ate to the places they slept, was based on instinct," says Noonan. "But this latest discovery supports the growing view that animals such as Killer Whales are very prone to learning by imitations and that they are 'cultural' by nature."

Noonan initiated the study five years ago when he observed an Orca luring seagulls into its tank by spitting fish onto the water's surface. The mammal then sank below the water, waited for a gull to grab the bait and when it did, lunged at it with open jaws. Within a couple months, Noonan observed that the whale's younger brother adopted the gull-catching behavior. Their mother soon followed suit and eventually the behavior spread through Marineland's entire Killer Whale population.

Noonan presented his findings in August at the Animal Behavior Society conference in Snowbird, Utah. Within days, the story appeared in *New Scientist* (London) and *Science News* (Washington, DC) magazines and when it did, a flurry of media interest ensued. Noonan became inundated with calls from print and broadcast media markets. Many were from within the U.S., including Discovery Channel and Animal Planet. Many more came from around the world, some as far away as Australia, Germany and Scotland. In all, more than 150 international media outlets reported on Noonan's gull-baiting research.

Still, he never lets a few minutes of fame get the best of him. He doesn't have time.

By 9:30 a.m. each weekday Noonan is due at his second job as professor and director of the animal behavior and zoo biology programs at Canisius. Both programs were built by Noonan when he joined the Biology and Psychology departments at Canisius in 1979. In their infancy stages when he arrived, today they are thought to be the leading undergraduate animal behavior and zoo biology programs in the country.



“In terms of undergraduate animal behavior programs, I tell people Mike’s is the one that should serve as their model.”

– Stephen L. Zawistowski '77, PhD

“I am involved with animal behavior work all across the country, in all different venues including colleges and universities, and in terms of undergraduate animal behavior programs, I tell people Mike’s is the one that should serve as their model,” says **Stephen L. Zawistowski, PhD**, chairman of the Animal Behavior Society’s Board of Professional Certification, senior vice president of national programs for the ASPCA (American Society for the Prevention of Cruelty to Animals) – and a 1977 Canisius alumnus.

The Animal Behavior and Zoo Biology programs at Canisius enroll about 30 students. They consist of 10 courses, six of which are taught by Noonan. Among them are comparative animal behavior, sex evolution and behavior, and zoo biology. The coursework is rigorous however the small class sizes provide for plenty of individual attention. But many say what makes Noonan’s programs so

distinctive is the way he brings classroom lessons to life.

“Mike’s programs are so compelling, compared to what other colleges and universities do, because they not only introduce students to all the interesting things they can do in the animal behavior field but they provide students with unbelievable opportunities to do it. Not just read about it – do it,” adds Zawistowski.

Throughout the year Noonan takes students to Ontario’s Algonquin Provincial Park to observe moose and wolves. They visit Tiff Nature Preserve in South Buffalo to study the food utilization of wild beaver. And they tour the Toronto Zoo to examine monkey social structure. Students in Noonan’s zoo biology course conduct an intensive study on zoo exhibitory during visits to five national zoos in five days: Pennsylvania’s Erie Zoo, Ohio’s Toledo Zoo, Michigan’s Detroit Zoo, and Chicago’s Brookfield and Lincoln Park zoos.

Back on campus, Noonan also has students maintain an animal behavior laboratory in which they observe various species in semi-natural and experimental settings. Even the homework he assigns is hands-on. Students in Noonan’s zoo biology class, for example, must build their own miniature zoos based on some very broad parameters.

“On the first day of class, Dr. Noonan gave us a tank and some gravel, and told us we had to build a zoo for any invertebrate animal we could catch,” recalls **Adele Donahue '06**, a psychology major who created a miniature zoo of Fiddler Crabs.

“The point of the exercise was to figure out how to set up a miniature zoo to the needs of the invertebrate selected,” adds **Dana Cusano '07**. A psychology major, Cusano designed a moth exhibit with specimens she caught at a nearby cemetery. Other exhibits included ants, crickets and crayfish.



“Mike is very valuable to all of us here at the Buffalo Zoo because he has such a tremendous amount of animal experience.”

– Kevin Murphy '85



Noonan's students then incorporate the lessons they learn from this exercise into their next assignment, which is to construct a substantial working zoo in the Health Science Building on campus. This year's exhibit, which is open to the public in November, features Australian birds, mammals and reptiles, on loan from The Buffalo Zoo.

Noonan's relationship with The Buffalo Zoo is one he nurtures as much as the animals themselves. It is a relationship that extends beyond Canisius. Noonan is a member of the zoo's Research and Conservation Committee. He also consults the park on a variety of animal-related topics.



WWW.CONSERVENATURE.ORG



"Mike is very valuable to all of us here at The Buffalo Zoo because he has such a tremendous amount of animal experience," says **Kevin J. Murphy '85**, zoo curator and former Noonan student.

As a result, Noonan's students gain access to animals and caretakers. Behind-the-scenes, students speak with veterinarians about zoo-based medicine. They tour zoo kitchens to study the dietary needs of the animals. And they meet with curators to learn more about zoo-based educational efforts. They essentially learn how a zoo operates from the inside out.

It's no wonder then that when Noonan established the Canisius Ambassadors for Conservation (CAC) program, his colleagues at The Buffalo Zoo were the first he approached about a potential partnership. The goal of the program is to promote wildlife conservation and education by generating community-wide interest in various animal species. The CAC is perhaps Noonan's most enormous endeavor and one that extends his work day, each week day, past the traditional **5:00 P.M.** quitting time. It isn't until then that Noonan begins work on what he considers his third and most demanding job of the day.

Each year, Noonan takes 10 Canisius Ambassadors to a distant location to conduct in-depth, on-site studies of a pre-selected animal species. Planning for the trip, alone, is a vast task. In recent years, the CAC trekked through the tropical rainforests of Costa Rica to observe primate ecology or monkey lifestyle. They hiked through the Rocky Mountains to track Big Horn Sheep. And they visited India's island nation of Sri Lanka to observe its most visible native, the Asian Elephant.

Upon their return, Noonan and the students produce multi-media, pro-conservation educational materials about the ecosystems they observed in the field and present their findings at local schools and to visitors at zoological institutions. The Buffalo Zoo was the first of the area's three zoo parks to welcome CAC students.

"Very often, when education programs in zoos try to get information out to the public, it's either done in a way that the public ignores such as signage, or it's forced on them in a 'gloom and doom' way," explains Murphy. "Mike and his CAC students, however, found the perfect balance. The messages they present to our visitors are educational, interesting, fun and palatable. They really captivate their audience. The mere fact that visitors stand and listen to what these students are saying is significant to the zoo."

Marineland and the Aquarium of Niagara Falls have also partnered with the Canisius Ambassadors for Conservation. This summer actually marked the first year that CAC students were invited to give presentations at all three of the area's zoological institutions. The result? Canisius Ambassadors brought their pro-conservation message to nearly a quarter million people who visited the parks. This fall and spring, the CAC will make pro-conservation presentations in 40 high school biology and middle school science classes in Western New York. Furthermore, their message is being acknowledged across the country.

The most recent CAC project, an educational video documentary about the Asian Elephant, which Noonan wrote, directed and produced, received four national awards. *Elephas maximus: The biology and conservation of the Asian Elephant* was a finalist in the 2005 Telly Awards (education category). It received an award of distinction at the 2005 Videographer Awards (education category). And it won a gold Aurora Award for Issues Awareness in the documentary category for nature/environment. The greatest kudos, however, came from the Animal Behavior Society, which named *Elephas maximus* Film of the Year in the non-commercial category.

"Producing this DVD was probably the most significant, time consuming project the CAC has ever undertaken. We wanted to shoot the video on location during our summer 2004 trip to Sri Lanka but it was new territory for us so we enlisted the help of the Canisius

“the messages mike and his cac students present to our visitors are educational, interesting, fun and palatable. they really captivate their audience.” – kevin murphy '85



College Media Center. They really made *Elephas maximus* the success that it is," says Noonan, referring to Erik T. Michaelsen (videographer) and Nathan A. Johnson '97 (editor). He also credits the college's teaching professorship program for providing the means to make the Canisius Ambassadors for Conservation a possibility.

"The college truly presented a wonderful opportunity to Canisius faculty when it introduced the Peter Canisius Distinguished Teaching Professorship," says Noonan, whose funding was recently renewed for a third time. "All of us in the animal behavior business care a great deal about the animals we study and their conservation. The Canisius Ambassadors for Conservation program is an ideal way for us to give back to our subjects – the animals. It would not be possible, were it not for the teaching professorships. They have provided amazing educational opportunities for all our students."

For Noonan, the students are what his work is all about and rarely does he miss an opportunity to turn even the most mundane instance into an entertaining educational experience.

"While waiting in the airport for our next flight out, Dr. Noonan will initiate a game of animal charades," says Gretchen Wagner '05, a psychology major and Canisius Ambassador for Conservation who traveled to Sri Lanka with Noonan.

"During long drives to different zoos, Dr. Noonan has us play him in a game of 20 Questions – Name the Animal Species," adds

biology major Thomas DiVito '07. It's Noonan against the students. Noonan writes down the name of a specific animal species and the students have to guess what it is in 20 questions or less. "It's a great way for us to learn about the different species we're studying in class," adds DiVito, who notes that the students actually prefer *their* version of the game in which they challenge Noonan to name the species. The students respectfully call this version Stump the Chump!

No doubt, Noonan is very deliberate about keeping the educational experiences fun but it is not all games. His students describe him as "particular," "demanding" and having "high expectations." You will get no argument from Noonan on this matter. Preparing future leaders in the animal behavior business or any business, Noonan says, is paramount to everything he does. His former students are testimony to that. Many are zoo curators, zoo keepers and veterinarians. Some are professors of animal behavior, themselves. Others pursued professions in different fields. But all value their educational experiences with Noonan.

"Mike really taught me how to think critically about things," says Michael J. Viksjo '99, MD, an internal medicine resident at Montefiore Medical Center in the Bronx. "He taught me not take everything at face value; to question things. If something didn't make sense, he would say, 'figure out a way to test it' and prove whether it is right or wrong. In medicine, we do that all the time so in that sense, I use

the skills that Mike taught me everyday."

Rebecca (Jones) Berry '02 (*Canisius College Magazine*, spring 2001) is one of seven students in the animal behavior program at CUNY Graduate Center and says her experience in Noonan's program put her head-and-shoulders above her classmates.

"Not one of my peers had ever taken an animal behavior course at the undergraduate level. I had taken four," she exclaims. Berry is studying to become a professor of animal behavior and hopes to one day work at a small liberal arts college like Canisius. "I want to be Mike Noonan when I grow up," she laughs. "He takes every opportunity he can to teach students. His enthusiasm for his work is contagious. And everything he does with students has a personal touch."

Much of this personal attention is the result of Noonan's open door policy, of which his students take full advantage. Certainly, they keep the door to his office revolving and his days never-ending but Noonan wouldn't have it any other way.

"It's a dream come true, to be paid for doing what you love," says Noonan. "I love my research. I love the coursework. I love the CAC. I love the animals. But most of all, I love the students. They are like my family. I start and end each day working with the best and brightest students who are all wonderfully devoted excellent human beings. So you see, I don't work 16-hour days because I have to. I work 16-hour days because I want to. I love what I do." ■

Noonan's Animal Abstract

BORN:
New York City

UNDERGRADUATE STUDY:
University of Notre Dame /
BS Biology (1974)

GRADUATE STUDY:
State University of New York at Buffalo /
PhD Bio-psychology (1985)

ARRIVED AT CANISIUS:
September 1979

ACADEMIC RANK:
Professor

DISCIPLINE:
Bio-psychology (aka. behavioral biology)

