The Duke Lemur Center is excited to introduce two new programs to our Education Department. This winter and spring join us for our “Prosimians for Preschoolers” early childhood programs featuring two exciting parent-guided classes, Lemur Play! and Junior Observers. These classes are designed for those little lemur enthusiasts between the ages of three and five. To find out more about the classes please visit our website (http://lemur.duke.edu/tours/prosimians-for-preschoolers/). If you would like to ensure a space for your child, please call 919-401-7240.

We will also kick off our new summer camp program this summer, July 15-19 and August 5-9! This camp will be geared for upcoming 5th to 8th graders. More details will be posted on our website, e-letter and social media accounts over the next month. Please stay tuned!

**Lemur Play!**
- January: 9, 16, 23, 30
- February: 6, 13, 20, 27
- March: 6, 13, 20, 27
- **Duration:** 9:00-10:15
- **Cost:** $25/per child (Chaperone free). Second child $20
- **Location:** Lemur Landing classroom/DLC campus
- **Class Size:** 8 children

**Junior Explorers**
- January: 11, 18, 25
- February: 1, 8, 15, 22
- March: 1, 8, 15, 22
- **Duration:** 11:00-12:15
- **Fee:** $25/per child (Chaperone free). Second child $20
- **Location:** Lemur Landing classroom/DLC campus
- **Class Size:** 8 children

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**Duke’s Alternate Mascot: Inside the Mind of the Lemur**

By Joel Bray, Duke student

How do lemurs see the world? It’s a question I ask as an undergraduate researcher in a cognitive psychology lab at Duke, but I have also had the opportunity to do so from a second, more unusual perspective.

My first year at Duke, I tented with the Cameron Crazies and, when given the opportunity, enthusiastically donned a Coquerel’s sifaka suit at the Duke vs. UNC basketball game. It was a hit and spawned a series of appearances on campus over the following years. The journey of that lemur culminated last spring, when I was part of Tent #1 in Krzyzewskiville. With my group’s blessing, the lemur stood front and center for all of Cameron Indoor Stadium to see. An unusual sight, even famed sportscaster Dick Vitale came over to greet the Lemur. After the game, however, it was decided to let the sifaka end its career on a high note and pass into retirement.

In its place came Maky, the Lemur Center’s new mascot, a ring-tailed lemur. With a soft coat and bold stare, Maky has left giant lemur-sized footprints all over campus. After making appearances at Duke’s activities fair and an early-season football game, I was asked by a member of the team to support them at their match against UNC. Duke wanted to go “bowling” and needed Maky by their side.

Arriving just past the half, I was ushered to the front of the stands to repeated chants of “LEMUR!” In addition to several appearances on the stadium’s jumbotron, Duke’s official Blue Devil mascot paid Maky a visit to cheer the team to its stunning, last-minute victory over the Tar Heels. In the post-game rush of the field, Maky was mobbed by enthusiastic, lemur-loving fans. A father asked Maky to hold his newborn child for a photo-op, and one student remarked that Maky should be the new school mascot.

I wouldn’t want to step on another primate’s toes, but I’m honored by the request. The reception from students and the Duke community has been wonderful, and I look forward to running around campus in my final semester. Let’s Go Duke!
They are the world’s smallest primates, weighing in at about 60 grams and easily fitting into the palm of your hand. They are pretty much everywhere in Madagascar, from the north to the south, from the east to the west, and they can be found in just about any little scrubby patch of forest that you happen to stroll into. And if you happen to make that stroll at night with headlamp on, you will see their bright golden eyes twinkling in the bushes as they leap at lightning speed from tiny branch to tiny branch. I have to tell you; it is one of my favorite sights.

I have been in a state of scientific obsession about mouse lemurs (Microcebus) for nearly 15 years now. When I first began studying lemurs as a group (we won’t say how long ago that was!), the scientific world thought that there were only two species of mouse lemurs: a grey form in western Madagascar, and a reddish form in eastern Madagascar. Indeed, they were thought to be so general and so widespread, that the IUCN was ready to declare them non-threatened. A lot has changed since those days! With a process of speciation, and the many ways that species boundaries, once formed, are maintained and reinforced by ecology and behavior. It’s an exciting time to be a lemur biologist with an obsession for mouse lemurs!

But the excitement goes far beyond the arcane obsessions of a lemur evolutionary biologist. The biomedical community is also beginning to sit up and take notice of mouse lemurs, and what these animals can tell us about the aging process. It turns out that mouse lemurs tend to develop plaques and tangles, just as humans do when in the clutches of Alzheimer’s disease. Investigators from around the world, well aware that all DLC research projects are strictly non-harmful, are focusing their energies on developing non-invasive techniques to study the aging process in mouse lemurs. At this point, the mouse lemur genome has been sequenced to a level of detail that nearly rivals that of the mouse and the human. Over time, we will be watching our mouse lemurs closely, monitoring their health and their aging process, as we also characterize their genome in fine detail. Ultimately, we hope to identify those genes that correlate with healthy aging versus those that signal a predisposition for Alzheimer’s-like symptoms and other signs of age-related pathologies. And the beauty of it is, the mouse lemurs will never know a thing about it. Ah, to be a DLC Microcebus: living out one’s days in the leisure and comfort of a mouse lemur condo, while pushing the frontiers of science.

As the year comes to an end, the staff at the DLC is thinking about new beginnings. New infants that is! The holiday season brings us sifaka infants, and the first, a healthy female, was born just today (19 December) to a 5 year old female named Rodelinda. This is Rodelinda’s third infant (not many five year old sifaka females can say that), and all have been females! Sifaka infants are the bright lights of the DLC’s winter, and three more pregnant females (Drusilla, 19.5 years old; Pia, 13.5 years old; and first time mom Irene, 5.5 years old) will give birth between now and mid-February. With a total population of only 55 animals in captive breeding programs (all owned by the DLC), each infant is a treasure.

Most diurnal lemurs breed in the fall/winter, and give birth in the spring. Sifaka (Propithecus coquereli) are our only diurnal to breed in the summer, and with a gestation of close to 5½ months, birth season runs from mid-Dec to mid-Feb. An infant weighs about 120 grams at birth and clings tightly to its mother from the moment it’s born. Our technicians and veterinary staff monitor each sifaka infant very closely to see its progress, and weigh the infant daily in the first week of life.

As we await each new sifaka birth, we’re also keeping close watch on all of our other breeding pairs: crowned lemurs, mongoose lemur, blue-eyed black lemurs, ring-tailed lemurs, and ruffed lemurs. Some pairs have bred already and others will over the coming weeks. And then spring will roll around, bringing a new set of births at the DLC. To everything there is a season!
That ring-tailed lemurs most often will have a just a single infant at a time, and about 27% of pregnancies at the DLC result in twins. But once, in 1983, a ring-tailed lemur female named Sappho had triplets!

That adult sifakas at the DLC weigh around 4000g (8.8 lb) on average, but that in September of 1991, an adult female named Sabina reached an all time high of over 10 kg (22 lb)– more than twice the size of a normal sifaka! Needless to say, she went on a diet.

That a fat-tailed dwarf lemur named Jonas is the oldest of his species on record? He’s still going strong at 27.5 years of age!

That the average weight of a new born aye-aye is 105g (3.7 oz), but Styx, a female born at the DLC in 2010, weighed only 72g (2.5 oz) at birth, making her the smallest surviving aye-aye infant ever born here. Around the clock care from the DLC animal care and veterinary staff after her birth got her through those first critical weeks, and she is now thriving and is exactly the right size for a 2.25 year old aye-aye at 2280g (5 lb).

That we had 48 infants born in 2012, that a 17 liters between 1976 and 1989 – for a grand total of 36 offspring in all! The last time lemurs were import-ed to the DLC from Madagascar was in 1993. We still have 12 wild-caught lemurs currently living in our colony, and their average age is over 28 years!

Detailed records have been kept on each animal in the DLC colony since it was established in 1966; we have housed over 4100 animals here throughout our history, and the sheer volume of data we have accumulated is mind-boggling! But as you can imagine, records have been kept in a variety of formats depending on the technol-ogy available at the time. So very old records are still in paper format, many hand-written, with a move to computerized test files, spreadsheets, and simple databases as technology progressed (yes, the lemurs have been here at Duke longer than computers!). Because of the patchwork of formats in which the data are kept, it can be difficult to extract and analyze all of the information needed to answer questions about animal health or husbandry without searching through several different files from a variety of sources – a process that can be very time consuming and still not always yield complete results. So at the beginning of 2012, with funding support from the DLC, NESCent, and Duke Natural Sciences, we initiated a DLC Database Project with the goal of verifying and extracting data from various source files and consolidating it into a single database from which we can quickly access and analyze the information. We have made great progress so far, and are already not only able to recover all kinds of fascinating facts about animals in our colony like the ones listed above, but we can assess animal growth and development, make better medical and colony man-agement decisions, and support countless research projects using this long-term data. But even after a year of hard work, we have really only uncovered the tip of the data iceberg - there is so much more to be done! New grant funding from the National Science Foundation will support continuation of the data project for the next two years so we can expand the growing database and implement new methods for bet-ter documentation of even more animal details. Having this infor-mation at our fingertips will sup-port the research, conservation, and education aims of the DLC, as well as help to ensure that we are able to keep the lemurs healthy, happy, and reproduc-ing, thus maintaining this unique resouce long into the future.

The Division of Fossil Primates (DFP) at the Duke Lemur Center (DLC) is changing but you might not notice because we are also staying much the same as our major focus remains on the fossil record of primates, and what that record can tell us about how we humans and our closest relatives (other primates) came to be the way we are today. That commitment to specimen-based research will be a constant in our program but the players will change as we shift from a singular focus on anthropoids (humans, apes, monkeys) to a broader approach that will begin examining the fossil history of lemurs, lorises, and tarsiers in more detail.

There are many reasons for the shift in strategy, some of it eco-nomic, some of it political, some of it pragmatic as we devise a new agenda for the DFP. In the past the DFP has been deeply involved in fieldwork in Egypt and Madagascar – while we will continue some of these efforts, we will shift our main fieldwork focus from Africa to North America. Many of you may not know this, but between 65 and 45 million years ago, North America was the epicenter of the primate world. During the early and middle Eocene ($55 to 45 million years ago), the American West was home to one of the largest and most diverse assemblages of primates known anywhere on the planet. Most of these primates would probably look familiar to you if you were to see them in the trees around you today – in fact a large number of them would look very much like the lemurs you see when you visit the DLC. One of the questions we are very interested in answering is whether or not these North American primates from 50 million years ago actually are ancestors of today’s lemurs, or whether they simply look like living species but are much more distantly related.

We are partnering with Duke’s Department of Evolutionary Anthropology on a project that will provide new information to assess the relationships between North American Eocene primates like Notharctus and Smilodectes with living lemurs. One unique aspect of living lemurs is the presence of a grom-ming claw on the 2nd toe of the foot – a feature we are devising to maximize our potential to find complete skeletons of Eocene primates in Wyoming to see if they too possess this grooming claw. If they do, it would be a strong piece of evidence to link them with living lemurs.

The DFP will always be at the forefront of primate research– thanks to the many faculty, staff and students that actively visit, use and help to grow our collections. While our main focus is changing, North America will not forget our roots in the rest of the world as Madagascar, Egypt and SE Asia will con-tinue to play important roles in our overall research plan. We are excited about the future direction of research here at the DFP – wherever it ultimately goes it will be worth the ride!
Do you need a population of tiny endangered primates managed? Do you need to know who’s related to whom in that population? Well, no need to visit Maury Povich because I am the person you seek!

Earlier this year I ventured away from the Lemur Center to attend a course on Population Management in Wheeling WV. Twice a year the AZA (Association of Zoos & Aquariums) offers professional development classes for those who work at zoos or in zoo related fields. I had the opportunity to work on the grounds of lovely Ogletby resort, courses are offered on topics such as studbook management, enhancement of enrichment for captive animal populations, and population management through the analysis of genetic and demographic data. Previously, I had attended an AZA course to learn how to be an effective Studbook keeper. Studbooks are wonderful resources for historical and current captive population data, and they can assist in better management of those populations. As the North American regional studbook keeper for dwarf and mouse lemurs I am familiar with this “who’s who” of small nocturnal primates. Almost all of the North American population recognized by the AZA is located at the Duke Lemur Center! How convenient!

In order to properly and responsibly grow our current population it was a must for me to further my education. My main objective for attending the population management course was to be able to make informed breeding recommendations and recommend possible transfers to other institutions, such as the Bronx Zoo. So that I had found a home base, if I had any chance of meeting some lemurs, it was Duke for me.

One of the first stops I made in Durham was to the DLC. Excitement coursed through me with a mix of pre-interview nerves. I couldn’t help but look around at awe and think, “Wow, at such an amazing place, is there a spot for me?” The day finally arrived and I headed off to my interview with Erin Ehmke and Meg Dye. To say I was nervous would be a complete understatement but I mustered up all my courage and decided to throw caution to the wind and just be myself. Thanks to all lemurs, I was chosen to be an Animal Behavior work study student! Erin and Meg informed me that I would be helping to care for the lemurs, conduct training sessions, observe aye-aye’s as they transitioned to new habitats, and collect behavioral data.

By Katie Beacham, Duke undergrad

**Best Job Ever? My Freshman Year with the Lemurs**

Lemurs, aye-ayes, and lorises… I guess you wouldn’t classify my job as ordinary. As a freshman at Duke I have what I consider to be the best job ever. Choosing a university is a decision that impacts your life. No pressure, right? Luckily for me I had some help from my furry friends. As soon as my college acceptance rolled in I phoned up the Duke Lemur Center (DLC). I wanted to know how soon I could get involved with the lemurs. To be honest, I wasn’t expecting much to come from my phone calls. Boy was I wrong! Everyone I talked to was welcoming, friendly, and encouraging. They explained to me what the DLC does, how I could support them, and who I should contact. I knew right then that I had found a home base. If I had any chance of meeting some lemur, it was Duke for me.

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My first few weeks of work went by like a blur. I was introduced to more pros - and cons of taking care of lemurs, and I hashed out who gets the call to “the big leagues” for breeding in March, the start of mouse lemur breeding season. During our session we discussed issues such as; how closely related are animals, who is overrepresented in the population, are certain animals too old or too young to breed, how aggressive were certain breeding groups last year, are we still aiming for multiple male and multiple female breeding groups, etc? There are many variables to consider! We also must take into account the amount of observation time needed to accurately record breeding pairs (so we don’t need Mr. Povich’s paternity seeking assistance), safety of the animals, and behavior.

Our goal for 2013 is to maintain our population size of 50 animals and wait un-til we have more room here at the center to expand again [In order to keep DLC population levels constant, and yet still have a breeding program, we are starting to loan mouse lemurs to qualified AZA institutions, such as the Bronx Zoo]. So while I stare at the calendar in anticipation of mouse lemur “March madness,” I’ll keep myself busy getting my Barry White CDs out of storage and hoping that my match making skills will once again work some mouse lemur magic!
On December 3rd, an interdisciplinary symposium addressing the ongoing problem of illegal cutting and trade of Madagascar rosewood and ebony was held on Duke’s East Campus. The symposium was a collaboration between the Duke Kenan Institute for Ethics and the DLC, with Professor Lou Brown of Kenan taking the lead. Lou also has a personal interest in Madagascar as she too has experience in the SAVA region, doing social and community work. The primary objective of the symposium was to stimulate a discussion of not only the illegal removal of precious woods, but also of human resource use in general, from the diverse perspectives of conservation, socio-anthropology, and regulation. Panel members representing the different perspectives were invited from around the U.S. The discussions during the three different panels throughout the day were quite thought provoking and at times intense – there was not always agreement, but then we did not expect there to be!

Another objective of the symposium was to provide Lou’s fresh focus class in ethics the experience of grappling with extremely complicated real-life ethical issues, which are difficult to resolve. The class participated actively in the symposium by assisting with organization and logistics, as well as presenting and participating in the different panel discussions. After the symposium ended, it was clear that the students had all been impacted by the day’s proceedings.

In addition to the symposium, the day’s events included a concert by New York City based Malagasy musician Razia Said. Said, at the Duke Coffeehouse. Razia’s concert at Duke included songs about the illegal logging, and other environmental problems in Madagascar, but above all was a poignant and rocking end to a long day of stimulating discussions!

The combined events were an excellent opportunity for us to expose Madagascar, along with its serious environmental problems, to the wider university community. It was also an opportunity to demonstrate DLC’s commitment to working towards solutions. DLC is sometimes viewed as being singularly focused on lemurs, when in fact our objectives are much broader and more diverse.

The symposium and Razia Said concert were funded by various small grants and support from both DLC and the Kenan Institute, but the primary grant which allowed us to host the two events was a grant from the new Duke Africa Initiative. The Africa Initiative is an exciting new program at Duke which has the objective of bringing together different university faculty, students, and departments working in the Africa region. We feel the Initiative has an exciting future at Duke, and we are particularly pleased to have been included in the first round of AI grants!

NEW DIGITAL RADIOGRAPH MACHINE
By David Haring
Registrar/photographer

On a recent January morning, Alphard, a 23.7 year old male ruffed lemur made DLC history. For the previous several very warm days he had been cavorting with his family in 14 acres of NHE4 forest, feeding on tree buds and climbing the tallest trees. But on the morning of the 12th, Alphard was found in his heated shelter laying on his side totally unresponsive to his keeper, Fallon Owens, only moving when she got close enough to him to touch him, at which point he jumped, but just a bit. Fallon called for aid, and Alphard was rushed to the exam room where Dr Bobby Scholper got to work.

Alphard’s symptoms (he was using neither his right arm nor leg), and the fact that he had been free ranging through tall trees in the forest, meant that he might have had a fall, and be suffering from fractures or internal bleeding. Fortunately, the DLC had just installed a new digital radiograph machine, and Alphard became its’ first patient. Dr Scholper has been delighted with the detail of the digital x-rays, and the quickness and ease in using the new machine. Unlike our old film based X-ray machine, the new one requires no half hour warm up, nor does it require constant monitoring and periodic changing of chemicals.

This ability to almost instantaneously x-ray and get a diagnosis for lemurs who might have suffered the effects of a fall, or from any number of other conditions, is revolutionary for the center. And get a diagnosis for lemurs who might have suffered the effects of a fall, or from any number of other conditions, is revolutionary for the center.

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One afternoon late last September, DLC Conservation Coordinator Charlie Welch came into my office with a serious look on his face. He closed the door, sat down, and then proceeded to say he needed to talk to me about something important. If he was my boss, these actions might have been cause for alarm. But since I have always had a convivial relationship with Charlie, and since I knew he was about to lead a Duke Alumni group tour to Madagascar, my response was the opposite: my pulse rate immediately shot up, not from dread, but from excitement!

That’s because the second Charlie sat down with that serious demeanor, I had an insane notion that his visit had something to do with his upcoming Alumni trip. Suspiciously, he just might be here to inform me that someone from the Lemur Center was getting the opportunity to go to Madagascar! Sure enough, Charlie proceeded to tell me that a slot in the trip had been reserved and paid for in full, but a family emergency had forced a last minute cancellation. However, the gentleman who had purchased the trip was kind enough to allow his vacancy to be filled by someone at the center. Then, unbelievably, Charlie asked me if I was interested in going! In shock, I stuttered that I was thrilled, but would have to think about it and get back with him the next day.

Of course I accepted (who would turn down a trip to Madagascar?), but only hesitated because the departure date was in a mere ten days, leaving me (since in the meantime I had to attend a conference in Florida) less than a week to get ready! If you have never experienced a photographic equipment and their ability to distill the world into the cards (randomly assigned left or right) was tested. With the aye-aye’s long fingers, it was easy to see which card they chose.