The Charles A. and Anne Morrow

LINDBERGH · FOUNDATION

N · E · W · S · L · E · T · T · E · R

December 2009

Dear Friends,

Isn't friendship one of the things that makes life fulfilling? I think so. Friendship has been at the heart of the Lindbergh Foundation for 32 years. This organization was built on friendship. Friends of my parents and friends from The Explorers Club established this organization. From then on, we have made friends all over the world, through our grants and award programs. But the best friends we have are friends like you who have supported the Lindbergh Foundation, financially or through volunteerism, in good times and in bad. As another holiday season approaches, I would like to thank you for your support of the Lindbergh Foundation.

This has been a challenging year – filled with highs and lows. Among the highs is the election of Larry Williams as Chairman, President and CEO of the Foundation. He is also CEO of BRS Aerospace in So. St. Paul, Minnesota. Larry is succeeding John King, who has done a marvelous job leading the Foundation for the past two years. I am confident that Larry's extensive knowledge of the aviation industry and outstanding leadership are just what the Foundation needs to guide us toward one of our goals – to become the premier facilitator for aviation-environmental issues. Larry will talk more about the Foundation's plans for the future in his first Chairman's letter on page 2.

I continue to be enormously proud of the Lindbergh Foundation and its accomplishments. Despite the tough economy we've all been facing, the Foundation gave eight research grants, which are summarized beginning on page 4. We also made great strides in developing mutually beneficial relationships with organizations that can help us further our mission of helping to improve the balance between technology and nature. Our friends at EAA are members of one of those wonderful organizations. We thank them so much for their hospitality during our Lindbergh Award celebration in May, and during our visit to AirVenture.

We also enhanced our partnership with Patty Wagstaff and the Kenya Wildlife Service. Earlier this year, several Foundation board members traveled to Kenya on behalf of the Foundation. John and Martha King offered ground school training to the KWS air patrol pilots to complement Patty Wagstaff's aerobatic and maneuvering instruction. Miles O'Brien created a documentary about the issue of poaching and the ways in which aviation is being used to combat the problem. Most recently, through a very generous contribution from Dr. Richard Sugden, we were able to purchase a factory-new Aviat Husky airplane, which is on its way to Kenya to become part of the KWS fleet. I hope you'll read about this latest development on page 3.

It is my great pleasure to announce that following our highly successful visit to Sun 'n Fun earlier this year, we have decided that Sun 'n Fun would offer some exciting opportunities as the venue for our 2010 Lindbergh Award Celebration. Lindbergh Foundation events and activities will take place April 14-15, 2010 at Sun 'n Fun in Lakeland, Florida. I hope you can join us. We have not yet announced the recipient of next year's award, so I encourage you to sign-up for the E-Flyer to receive timely updates and registration information for this great event.

I invite you, our friends who value the programs the Foundation sponsors, to make a tax-deductible contribution of any amount – large or small. Your gift will be used to help us keep giving grants and awards, and for developing new educational programs. In the1960s my father worked very hard to raise money to support environmental programs he believed in, deeply convinced that a balance between technology and the environment was essential to human survival. As we continue his work, I hope you will join me by including the Lindbergh Foundation in your year-end giving.

With the very best wishes, and many blessings for the holiday season to you and yours.

Sincerely,

Reeve Lindbergh

Reeve Lindbergh
Honorary Chairman

Inside

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Letter from the Chairman

Dear Friends,

In my first letter as Chairman and CEO of the Lindbergh Foundation, I wish to tell you that I believe passionately in the work we do to improve the world in which we live. I am humbled to be part of an organization with a reputation for outstanding Board and staff leadership. Our Grants program is recognized the world over for its review process. We work especially hard to engage a wide network of partners who bring diverse perspectives to the work we're doing together. I have been deeply impressed by the dedication and commitment of our volunteers, staff and donors. They believe, as I do, that the Lindbergh Foundation makes a difference.

My thanks to those who dedicate the time and effort to serve on our board. Special thanks go to John King as immediate past board chairman and Martha King who served as secretary. Their leadership and contribution is appreciated. Succeeding John leaves some big shoes to fill, but I am determined to do my best.

At our annual meeting in September, the Foundation launched a new strategic plan to guide our efforts over the next five years. The plan reflects the Board's desire to strategically focus on:

- Being an effective source of funding for grants that support our mission
- Enhancing cooperation and partnerships that foster solutions to today's unique and challenging problems
- Promoting and improving aviation environmental planning and management as the basis for ensuring effective use of funds for Foundation initiatives
- Improving public awareness, education and research.

One of my goals will be to encourage cooperation between various key agencies through formal alliances with the Foundation. I also want to encourage participation through our new web site and other educational and outreach activities to promote the Foundation as a facilitator for aviation - environmental issues.

This has been a very hard year for foundations and nonprofits – and the near future doesn't look any easier. Our endowments are down and we don't have as much to give away. We are like many nonprofits today - fewer resources at precisely the moment when the need is the greatest. However, our goal is to have more funding available for grants.

As we address these important issues, we will be guided first and foremost by how this work contributes to our overarching goal of helping improve the balance between technology and nature. In that spirit, I look forward to reporting back about how we've increased the impact of every grant we make. In the end, impact is why we're here.

Thank you for your continued support.

Director News

Lindbergh Foundation Welcomes Three New Board Members

Lorie Karnath is the second woman in The Explorers Club's 106 year history to be elected president.

Lorie Karnath joined the Lindbergh Foundation in March when she became the 37th president of The Explorers Club. Ms. Karnath focuses much of her effort on the fields of science and education, conceiving and implementing programs that foster creativity, discovery and the sciences. She participates on numerous international scientific and educational boards. An avid explorer from a young age, she is a fellow of the Royal Geographical Society and was a founding member of the RGS Hong Kong, as well as an international fellow, board member, Western European Chapter and Science Advisory Committee chair of The Explorers Club.

Karnath has lived in the Borneo rainforest while conducting flora and fauna studies, traveled much of the Silk Road, rode on horseback across the Tibetan plateau and has participated on numerous journeys covering the far corners of the world in search of answers to some of the planet's most elusive questions. She has led several Explorers Club flag expeditions including one to the North Pole, which attempted to retrace Cooks' expedition, and headed the team that followed the migration routes of the White Stork. She and her husband, Robert, helped establish a hospital in northern China as well as schools and orphanages elsewhere in the Far East. She has authored several books and international publications. She received her MBA from INSEAD and an honorary Ph.D. from Shenandoah University.

Lindbergh Foundation Partners with Rich Sugden to Donate Husky to KWS

At the Aircraft Owners and Pilots Association (AOPA) Summit on November 5, the Lindbergh Foundation announced that its efforts to facilitate the donation of a factory-new 180HP A1C Husky to the Kenya Wildlife Service (KWS) has been accomplished.

For six years, highly acclaimed aerobatic pilot and environmentalist Patty Wagstaff has helped the KWS pilots to become safer pilots, by teaching them aerobatic and maneuvering skills that are useful when helping to seek out elephant poachers in Kenya's national parks. Last February, Lindbergh Foundation Board members and ground school training gurus John and Martha King joined Patty in providing such training to KWS pilots in Kenya. Dr. Rich Sugden, air show performer, vintage aircraft owner and businessman also joined the training team. Sugden and his wife Sue were so impressed with the work being done by the KWS pilots and the risk they willingly undertake to preserve endangered wildlife in Kenya, that they felt compelled to do more to help. The help came in the form of a new Husky.

"What began as a simple partnership between the Lindbergh Foundation and Patty Wagstaff to support her work training the KWS pilots to safely protect wildlife from poachers, has evolved into a gift that we could never have imagined," said Lindbergh Foundation Chairman, President and CEO Larry Williams, CEO of BRS Aerospace. "Since that first announcement only a year ago, the Foundation's involvement and support of the KWS has grown to include expanded training opportunities for their pilots, a DVD documentary filmed by journalist Miles O'Brien, and now facilitating the donation of an aircraft with Rich Sugden."

Ron Renz, left, accepts the keys for the Husky from ferry pilot Steve Phillips.

On Saturday, October 31, the Lindbergh Husky left the factory in Wyoming, arriving at GUT-Works, LLC, in Lawrence, Kansas, on November 1, completing the first leg of a journey halfway around the

Husky, continued on page 9

Kate Dougherty joined the Lindbergh Foundation in May. She is owner of Dougherty Public Relations. Her client list is a diverse group of aviation companies and foundations including Avidyne, Forward Vision, and MT Propellers, among others. Prior to developing her private business, Ms. Dougherty was the public relations director for Cirrus Design for seven years and employed by them for ten years. She led numerous national and international product launch campaigns for Cirrus Design and directed public relations activities surrounding the first Cirrus Airframe Parachute System save.

Ms. Dougherty has a Broad Field Social Studies degree from the University of Wisconsin-Superior. She is a member of Experimental Aircraft Association, Aircraft Owners and Pilots Association, and a former member of the General Aviation Manufacturers Association, Communication Committee. She also serves on the Board of Trustees of the Duluth Aviation Institute.

Mark Ross became an honorary board member in February. As a young boy, Ross decided to spend his life working with wildlife in East Africa, and to be a pilot there. He finally landed in Kenya in November of 1977 to finish up his degree in wildlife biology. Ross taught high school biology, chemistry and physics for a few years, then trained science teachers, and started guiding safaris. In 1987, Ross got his pilot's license.

Today, Ross has his own safari company based in Nairobi, Kenya, trains guides for a number of private tour companies, and for the Kenya Professional Guide's Association, and runs his own flying safaris around East Africa. Besides guiding safaris full time, he has also worked on a number of successful film projects, including documentaries for "Dateline NBC," "Animal Planet," and the BBC. Beyond the African continent, Ross also guides a few trips a year in Mongolia, has guided motorcycle trips in South America, has trekked and climbed in Nepal, Pakistan, Argentina and Chile. Ross has written two books on Africa. When he is not flying his Cessna 206 on safari, he is teaching himself aerobatics in his Pitts S2B.

2009 Lindbergh Grant Recipient Projects

The Lindbergh Foundation selected eight projects to receive grants this year. Lindbergh Grant projects are the cornerstone of the Foundation's mission and their global reach ensures that the Lindbergh legacy of balance resonates around the world. Each grant recipient receives up to $10,580 (the cost to build the *Spirit of St. Louis* in 1927) to support their research or education projects that use innovative ideas to foster our environment for a planet in balance.

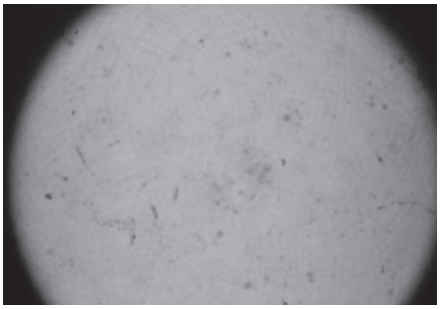
The Foundation is deeply grateful for the financial support of the Lindbergh Grants program provided by **Knox Bridges**, North Carolina; **Cherbec Advancement Foundation**, St. Paul, Minnesota; **Clare Hallward**, Canada; and **Reeve Lindbergh**, Vermont. Lindbergh Grants are also funded by the **Lindbergh Grant Endowment** and the **James and Maureen Lloyd Grant Endowment**.

Benjamin Castaneda

Pontificia Universidad Catolica Del Peru, Lima Peru

"Developing Computerized Screening for Early Detection of Tuberculosis in Peru"

The World Health Organization declared tuberculosis (TB) to be a global emergency in 1993. Today, it is estimated that one-third of the world's population is infected, nine million new cases are diagnosed and two million deaths occur from TB each year. This contagious disease spreads through the air like the common cold virus. Left untreated, those with active TB can infect between 10 to 15 people every year. The most effective method to stop the TB epidemic is to isolate and treat infected patients before they spread the disease. Diagnosis of TB in Peru, and most of the world, is currently based upon the Directly Observed Therapy Short-course strategy. Patients with clinical signs or those who have been exposed to the disease provide sputum samples that are stained and microscopically screened for acid-fast bacilli (AFB), an indicator of the infection. The number of readings done per day as well as the quality and accuracy of the reading is dependant upon a technician. In areas of highest incidence, detection is tediously slow by this method and limited resources for the training of laboratory staff, supervision and quality control procedures are challenges currently faced in Peru, and other developing countries.



Mr. Castaneda is developing stand-alone software to automate the visual search of AFB. Samples will be recorded using a digital camera and entered into the computer where the software will complete the screening and diagnosis. This use of computer software will promote an early and fast diagnosis of TB and improve the quality of the human environment in areas where TB is prevalent.

Tanya Cheeke-Icoz

Portland State University

"Evaluating the Effects of Genetically Modified Plants on Beneficial Fungi in the Soil Ecosystem"

This grant in agriculture is sponsored by the Jim and Maureen Lloyd Grant Endowment

Genetically modified corn has been grown commercially since 1996 and now constitutes 80% of all corn grown in the United States. There are many benefits of using biotechnology in agriculture, particularly the reduced use of broad-spectrum pesticides. However, despite the widespread cultivation of these crops in the U.S. and abroad, the environmental effects of this technology have not been thoroughly evaluated.

Transgenic *Bt* corn releases an insecticidal toxin that binds to soil particles and accumulates in the environment over time. Because soil microorganisms are vital for decomposing organic matter, recycling nutrients, and forming symbiotic relationships with plants, it is important to determine the effects of transgenic crop production on beneficial organisms in the soil.

Ms. Cheeke-Icoz will evaluate the benefits and potential impacts of agricultural biotechnology on the soil environment with the goal of finding an acceptable balance between the use of genetically engineered crops and the preservation of a healthy soil ecosystem. Results from her work will provide a comprehensive assessment of the impact of *Bt* plants on beneficial soil organisms across a broad range of environmental and ecological conditions.

Randall Fishman

Cliffside Park, NJ

"Using Electric Propulsion in a Two-man Aircraft to Make Extended Flight Economical and Pollution Free"

Global warming, air and noise pollution, and liquid fuel shortages are major factors facing the world today. They are also of major concern to the aviation industry. Gasoline-powered engines used in aviation are inefficient at producing mechanical power from fuel. Only 25% of the energy is used to propel the airplane, the rest is wasted in the form of heat, vibration and noise.

To address these issues, Mr. Fishman plans to build a two-person airplane, with some baggage space, which would be propelled solely by an electric motor and electronic motor control. The on-board 220-volt battery charger will be able to recharge the battery packs in three hours or less, and can be used with a 110-volt outlet, if necessary. This proposed electric propulsion plane would allow pilots to fly quietly on approximately $2 of electricity per two-hour flight, at current rates. The aircraft will produce no local air pollution, reduce noise to nearly zero, produce almost no carbon footprint and use no oil or gasoline.

The results from this project will demonstrate that practical electric flight is possible today and may inspire others to begin converting to electric for at least a portion of the airplanes produced. If well received, electric aircraft could offer new ways for people to travel short-to-medium distances and if widely adopted, they would contribute to a cleaner, quieter environment.

Dr. Chad A. Kinney

Colorado State University, Pueblo, CO

"Using Earthworm Composting to Reduce Manmade Contaminants in Wastewater Biosoids Destined for Land Application"

This waste management grant is sponsored by Reeve Lindbergh.

In the U.S., the EPA estimates that more than 9 million dry tons of biosolids are produced annually. The practice of applying biosolids to the land is an affordable option for disposing of solid materials produced during wastewater treatment. The high content of organic matter also makes it an attractive soil amendment and a good source of plant nutrients. Recently, however, researchers discovered that applying biosolids to the land could introduce organic compounds like pharmaceuticals, synthetic fragrances, and disinfectants into the soil. Organic wastewater contaminants (OWC) can leach from the soil into groundwater, and some may accumulate in plant tissue, including crops. Earthworms in biosolid amended soil can accumulate OWCs, and songbirds, consuming those earthworms also may be affected.

Dr. Kinney plans to investigate vermicomposting, a relatively new method for producing biosolids. The idea is that the normal metabolic activity of earthworms and the increase in bacterial activity associated with a high density of earthworms will significantly reduce the quantity of OWCs in the final biosolid product. If this proves to be effective, it will serve as a model approach to reduce the translocation of OWCs from wastewater treatment facilities into the land. The goal of this project is to provide scientific evidence for a biosolid production process that maintains the sustainable use of the organic rich nutrient source as a soil amendment, while protecting the natural environment and food and water supplies. In addition, increased use of biosolids produced from energy efficient vermicomposting will likely result in a net reduction in energy consumption compared to production of synthetic inorganic fertilizers.

Grant Recipients, continued on page 6

Grant Recipients, continued from page 5

Tricia Miller

The Pennsylvania State University, Rector, PA

"Modeling Migratory Flight Characteristics of Golden Eagles to Avert Potential Conflicts with Wind Power Development in the Appalachian Flyway"

This grant in animal conservation is sponsored by Clare Hallward.

The same updrafts used by birds during migration are an essential resource of wind power, which is emerging as a promising source of clean energy for our nation. Wind power development and the potential conflict with wildlife is an important issue at the local, regional, national and international level. Ms. Miller plans to fit 10 golden eagles with the most advanced form of global positioning system (GPS) tracking technology to document their movements as they travel from their breeding grounds in Canada, through the wind power projects in the Appalachian Mountains. This research will be the first project in the world to collect high frequency location data over large spatial and temporal scales and remotely transmit those data via the cellular phone network. This GPS cellular telemetry was developed in the last year and is capable of collecting location data at 30-second or shorter intervals, giving a nearly exact track of an animal's movements.

Ms. Miller will evaluate the altitude, position, heading and flight speed of the birds under a variety of climatic and topographical conditions to create a model that will predict the migration patterns of the birds. The high resolution data collected from this project will be used to create three dimensional probability models that will be provided to the wind industry, land managers and state agencies in the Appalachian corridor to guide wind turbine positioning that will have the least impact on migratory eagles and other birds of prey.

Richard Osiyo

MOI University, Eldoret, Kenya

"Training Kenyan Farmers to Integrate Rice and Fish Farming to Increase Productions and Reduce Harmful Run-off in the Lake Victoria Basin"

This grant in agriculture is sponsored by Knox Bridges.

Rice is a very important food crop worldwide. Most sub-Saharan African countries, including Kenya, import rice. Small farmers in Kenya recognize the need to improve their crop yields through the use of inorganic fertilizers but they remain too expensive for the farmers. There is also a national concern about the pollution of Lake Victoria caused by farming activities and destruction of catchment areas. To address these issues, Mr. Osiyo plans to use rice straw, Azolla (a water fern), and fish to increase soil fertility, build soil nitrogen, improve rice yield and reduce pollution of Lake Victoria.

Integrating fish and rice has multiple benefits. The waste from the fish improves soil fertility and reduces the need for chemical fertilizers in rice production. In addition, fish eat insect pests from the rice while the Azolla suppresses aquatic weeds in the rice fields. Azolla and rice straw increase nutrient retention in rice fields, reducing runoff effect on Lake Victoria.

Mr. Osiyo also hopes that long-term improvement of soil fertility will be achieved, contributing to increased sustainable food production. As a result of this work, he expects rice yield to increase by 33%. This project is unique because it is the first of its kind in the Lake Victoria basin of the Kenya, Uganda, and Tanzania, where there is great potential for its success and adoption.

Dr. Patricia Saenz Méndez

School of Chemistry, University of the Republic (UdelaR), Montevideo, Uruguay

"Employing Biotechnical Tools to Convert Lignin Waste into High Value Organic Chemicals for Leather Tanning in Uruguay"

This waste managment grant is sponsored by the Cherbec Advancement Foundation.

One of the most significant challenges facing the chemical industry in the 21st century is sustainable economic growth, which requires sustainable resources for industrial production. Uruguay's economy remains dependent on agriculture and services, including leather production and apparel, which represents 23% of GDP and over two-thirds of total exports. Limited deposits of fossil fuels and environmental concerns such as greenhouse gases have prompted the scientific community to look for alternatives to fossil resources. Lignin is one such resource. A by-product of the paper and pulp industry, lignin is used as a fuel for the pulping process.

In this study, Dr. Saenz Méndez proposes to develop a biotechnological process using fungi and isolated enzymes to convert lignin into a high value-added chemical that would replace chromium sulfate, a tanning agent used in the production of leather. Chromium is a fossil-derived chemical and is a leading cause of water pollution in Uruguay.

Lignin offers a great opportunity to address the growing need for chemicals without depleting natural resources, and for reducing industrial waste disposal in an environmentally sound fashion. Transforming industrial waste, like lignin, into useful products will balance the demands of industry and the environment, making the new chemical industry economically viable as well as socially and environmentally responsible.

Sean Sloan

The Smithsonian Tropical Research Institute, Panama and The University of Melbourne, Australia

"Combining Satellite Imagery and Census Data to Show How Socio-economic Deveopment Encourages Forest Regeneration in Panama"

In Panama, deforested lands are left to reforest for up to 10 years before being re-cleared for agriculture. This creates uncertainty as to how much of the observed regeneration is authentic and whether it might mitigate tropical biodiversity loss. New forest regeneration has been recently observed in Panama for the period 1990-2000. This could be good news for endangered forest species and climate. However, the National Authority for the Environment (NAE) needs significant information in order to formulate new environmental-economic policy to actively promote such regeneration.

Mr. Sloan intends to use satellite and related computer technology to observe forest regeneration, map the regeneration in Panama since 1980, quantify biodiversity preservation resulting from regeneration, and quantify the influence of socio-economic development on forest regeneration. By doing this, he hopes to reveal if, how and where socio-economic development promotes tropical forest regeneration, and to what extent such regeneration might conserve tropical biodiversity.

The topic is of critical importance to Panama, as deforestation rates are falling and areas being reforested are expanding country-wide. However, regional differences are evident, and the causes of regeneration uncertain. The results of this study will be used to inform public policymakers in Panama about how social trends might be harnessed and re-directed to protect and expand forest cover as well as alleviate poverty.

New-Found Respect for Lindbergh's Feat

Eight individuals from around the country enjoyed a rare opportunity to experience what few others have known – flight and stick time in the EAA's *Spirit of St. Louis* reproduction. The rides were part of the Lindbergh Foundation's on-line auction and took place May 15-17.

"The *Spirit* is a great storyteller," said *Spirit* Pilot Sean Elliott, director of Aircraft Operations at EAA. "If you read all the books written about the *Spirit*, they still don't prepare you for the experience of what Lindbergh did when he flew that plane for 33 ½ hours."

The poor visibility in the aircraft is an eye-opener for those who ride in the plane. Not only was Charles an aviation pioneer, but he was also at the forefront of instrument flying. With no forward vision available, Lindbergh used instrumentation to navigate his way to Paris.

Jesse Easudes of Pittsburgh, PA., was one of the bidders. He is a lifelong admirer of Charles Lindbergh and a pilot with a deep affection for the Golden Age of aviation. Easudes, who never dreamed he would have a chance to fly the *Spirit of St. Louis* reproduction, bid on a ride not for himself but for a dear friend, Ev Cassagneres, a worldwide expert on the *Spirit of St. Louis*, who has written two books about the famous aircraft. Easudes's bid was successful, but unfortunately Cassagneres was unable to accept the ride. Easudes couldn't go to Wisconsin himself, so he offered the ride to his friend David Troup. Troup gratefully accepted, and was so delighted with the opportunity that he immediately arranged to return the favor and fly Easudes to Wisconsin. So it turned out that both of them were able to experience the flight of a lifetime.

Jesse Easudes attempts a familiar pose.
"Although I would have thought it difficult to do, this airplane increased the already tremendous respect I have for Lindbergh."
– Jesse Easudes, Pittsburgh, PA.,

"To hear about its handling characteristics is one thing but to actually experience them as a passenger and finally as pilot is quite another," said Easudes.

David Troup added, "I had tremendous respect for Lucky's flight before I flew the *Spirit.* Afterward, I'm in awe that he made it at all!"

"The Lindbergh Foundation is extremely grateful to EAA for making the *Spirit* available to us for our auction," said Foundation Chairman John King, co-chairman of King Schools. "The *Spirit* is one of the most recognizable airplanes in the world. We are delighted to have made some dreams come true for a few very lucky people and we thank them for participating in our auction."

"It was a big thrill to fly the Spirit *and fly it from the seat that Lindbergh sat in. It allows me to better project what he went through. I have even greater respect for his airmanship after having seen how unstable the airplane is. There is no way it could get certified today. You have to fly it every second."*
– Linden Blue of Spectrum Aeronautical, San Diego, Calif.

"I found the ailerons heavy, relatively unresponsive, and they created considerable adverse yaw," said Jeff Loeffler. "It helped to have a well-developed forearm and responsive feet," he joked. "Flying over the Wisconsin fields, I couldn't help drifting into thoughts of yesteryear and trying to imagine what it was like to occupy that seat over the Atlantic in 1927."
– Jeff Loeffler, Wyoming, Minn.

"I was awestruck to learn how unstable the aircraft is and how to keep it flying, you need constant input and diligence."
– Larry Williams of Ballistic Recovery Systems, Inc., St. Paul, Minn.

Husky, continued from page 3

globe to enter service under the KWS. GUT-Works, another major sponsor of this project, is handling the export paperwork, disassembly, containerizing, and shipping of the Husky, passing along only the hard costs of the project. "GUT-Works has been shipping Aviat and other aircraft all over the world for nearly 10 years, so it was natural for us to be involved in this project," explained manager, Ron Renz. "Projects like this make being a good corporate citizen fun. This project is also an excellent way to show the general public how General Aviation helps contribute to society and the environment."

This donated Husky is unique in yet another way. It will be the first such plane in KWS service equipped with a Forward Vision EVS-100 infrared camera and display, a thermal-imaging system that will allow pilots to "see" at night, or in low-visibility operations. Patrick Farrell, CEO of Forward Vision, noted, "A veterinarian by training, I'm especially proud that our EVS technology will be used to help stop illegal poaching of these precious animals, as well as to keep the KWS pilots safe in doing their jobs."

"People say, it's an airplane, why don't you fly it?" GUT Works Manager Ron Renz told Channel 6 News in Lawrence, Kan. "Well, we're going halfway around the world. That's a long way, and there's some big overwater stretches. This airplane just doesn't have the range to do that." The Husky will travel about 12,000 miles, spending nearly two months in transit. It is expected to arrive in Mombasa, Kenya on December 23. It will then need to be re-assembled and flown to the KWS headquarters in time for the next session of training in late January/early February 2010.

The GUT Works crew removed the second wing of the Husky in preparation for shipping it to Kenya. Handling the wing from left are GUT-Works manager Ron Renz, mechanic Phillip Pitzer, base mechanic for LifeStar Paul Isabell, and Jonah Seibel.

In addition to those mentioned herein, The Lindbergh Foundation is grateful to these additional sponsors for their kind support in getting this donated Husky to its new home in Kenya:

- American Equipment Sales, Lawrence, KS
- Albert Humbert
- Steve Phillips
- Laufer Group International
- Teton Aviation

You can follow the Lindbergh Husky story on our web site at www.lindberghfoundation.org.

2009 Certificate of Merit Designees

Dr. Steve Ross
University of North Carolina Center for Marine Science, Wilmington, N.C.
"Protecting Deep-Sea Coral Habitat by Designing Drop Camera and Lander Systems"

Fernanda D'Agostino
Portland, Ore.
"Using the Connection Between Art and Science to Display the Fluid Flight Dynamics of the Vaux Swift in Order to Protect the Birds and their Habitat"

Joseph Duff
Operation Migration, Port Perry, Ontario, Canada
"Reintroducing a Migratory Population of Whooping Cranes in Eastern North America Using Ultralight Aircraft"

Andrea Stierle
Montana Tech of the University of Montana, Butte, Mont.
"Using Enzyme Inhibition to Guide the Isolation of New Anticancer Agents from Microbes Found in Abandoned Montana Copper Mines"

Lessons from Elkhorn Slough

Dr. Steven W. Moore, of the Division of Science and Environmental Policy of California State University, Monterey Bay, received a Lindbergh Grant in 2005 for a project entitled, *"Engaging Students in Video Technology Deployment and Experimental Design to Study Animals in the Wild."*

Dr. Steven Moore

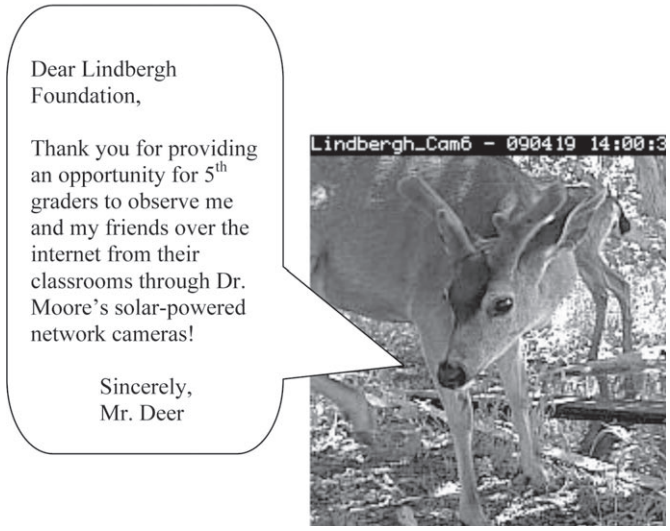
The Project

Television and the Internet have dramatically increased public awareness of the wonderful diversity and interdependence of life on this planet and have played an obvious and important role in educating millions about the importance of environmental conservation. However, these same technologies may be undermining the long-term commitment of society to conservation as children are spending more time in front of the television or computer rather than developing a close relationship with nature through physical experience.

During this study, Dr. Moore plans to bring middle- and high-school students up to date on the latest in wireless video and Internet technology while getting them outdoors and giving them a fun, safe way to connect on a deeper, more meaningful level with wildlife near their homes and schools. Students will design and conduct experiments in which they will use technology by positioning solar powered web cameras, infrared lights, long-range wireless Internet access equipment, and web-linked motion sensors outside in natural settings to answer their own questions about wildlife. This experience may strengthen their involvement and commitment to environmental preservation.

A group of 5th graders from Highlands Elementary School in Seaside Calif., went to Elkhorn Slough National Estuarine Research Reserve in April 2009. These students of nature were from the first school to deploy brand new, solar-powered, wireless, network camera stations designed and built by Dr. Moore with funding from the Lindbergh Foundation.

The kids shouldered heavy batteries, solar panels, cameras, and cables and tromped out toward the woods. After examining several sites, one group of children elected to place their camera near a small freshwater spring to see what would stop by to take a drink.



Back at school, children and teachers use the Internet to view live or recorded images from the cameras. From those first images, students learned that crows are the most frequent visitors to the spring. They drink, bathe, and socialize there several times each hour. Other visitors included a Spotted Towhee, a Red-Shouldered Hawk and a Barn Owl. The highlight for the children, however, was the pair of deer that showed up 10 days later.

Each camera station is battery powered for 24-hour operation by a solar panel, which recharges the batteries during daylight hours. A small, embedded computer and a wireless router relays the video images to a remote base station and permits remote monitoring of the battery status, solar charging, and other "vital signs."

What's Next?

In the coming months, Dr. Moore plans to upgrade the Internet connection, and establish a 3.5-mile, broadband, wireless connection between the Slough and Moss Landing Marine Laboratories. This would allow real-time viewing of streaming video. In addition, Dr. Moore is working on waterproofing one or two cameras to allow underwater viewing. The waterproofed cameras could be used in one of the springs or in the brackish waters of the Slough where Leopard Sharks are known to congregate.

Learn more about Dr. Moore's project by visiting our web site at www.lindberghfoundation.org.

THE CHARLES A. AND ANNE MORROW

LINDBERGH FOUNDATION

BALANCING TECHNOLOGY AND THE ENVIRONMENT

2008 SUMMARY ANNUAL REPORT

Lindbergh Awards

In 2008, the Lindbergh Foundation held its annual Lindbergh Award Celebration on May 17 at the Ritz-Carlton, Buckhead, in Atlanta, Ga. **Ted Turner**, chairman of the Turner Foundation and founder of CNN, receieved the **Lindbergh Award** for his work to support preservation and conservation efforts that protect the earth's resources.

Turner believes that protecting the environment is central to the very survival of human life. He established the Turner Foundation in 1991 to support preservation and conservation efforts that protect the earth's resources. His Foundation supports clean water and toxic reduction projects; clean air through improved energy efficiency and renewables; wildlife habitat protection; and equitable practices and policies aimed at reducing population growth rates.

The Jacoby Group of Atlanta, Ga., received the **Lindbergh Foundation Corporate Award for Balance**. The award recognizes corporations or organizations whose concern for and dedication to improving our quality of life by using technological solutions to improve our environemnt, is demonstrated through their business practices.

The Jacoby Group understands that the nation's environment and economy are linked. In the late 1990s, Jacoby took a special interest in urban sprawl and its impact on the quality of life. As a result, the company's corporate focus changed to non-traditional development projects, emphasizing sustainability, "smart growth" and the concepts of new urbanism. Mr. Jacoby believes, and has proven, that "green is good."

Jacoby's Atlantic Station project was the largest brown-field redevelopment project in the United States when the project began in 1997. Today, it is 138 acres of environmental redevelopment and reclamation of the former Atlantic Steel Mill in Midtown Atlanta. With 11 acres of parkland, electric car charging stations and other creative transportation systems and incentives, combined with the first LEED Silver-Core and Shell certified high-rise office building in the world, Atlantic Station has become a national model for smart growth and new urbanism.

Jacoby Energy is a 100% renewable energy company that captures gas from landfills and processes municipal solid waste with Plasma gasification. The technology can turn 10,000 tons of garbage into clean energy for 25,000 homes every day. They are the first to deliver landfill gas to the Atlanta Gas Light pipeline, and strive to deliver profitable, alternative energy solutions on a commercial scale.

THE CHARLES A. AND ANNE MORROW
LINDBERGH FOUNDATION
STATEMENT OF ACTIVITIES
January 1, 2008 - December 31, 2008

Support and Revenue	
Contributions	$181,166
Investment Return	<160,659>
Other	98,410
Total Support and Revenue	**$118,917**
Expenses	
Program Services	$330,186
Management and General	135,010
Fundraising	169,584
Total Expenses	**$634,780**
Change in Net Assets	**<$515,863>**
Net Assets at Beginning of Year	**$1,696,455**
Net Assets at End of Year	**$1,180,592**

Complete audited financial statements are available from the Foundation office or at www.lindberghfoundation.org.

Lindbergh Grant Recipients

The Board of Directors chose 12 research and educational projects to receive Lindbergh Grants in amounts up to $10,580 (the cost of building the *Spirit of St. Louis* in 1927). Selected from 150 applications, the projects were chosen for their potential to make significant contributions toward improving the quality of all life by balancing our technological advancement and the preservation of our human and natural environment. Since the program started in 1978, 296 researchers in the United States and abroad have received nearly$3 million in funding.

Major gifts supporting 2008 Lindbergh Grants were received from: **Knox Bridges, Clare Hallward, Reeve Lindbergh, Doug and Jennifer Moreland, Cherbec Advancement Foundation, Lycoming Engines, and The Musser Fund.**

John Barrie
The Appropriate Technology Collaborative, Ann Arbor, MI
"Creating and Disseminating an Efficient, Cost Effective Universal LED Circuit Board Design as a Replacement for Kerosene Lamps in Central America."

Dr. Gang Chen
Xinjiang Environment & Natural Resources Conservation Research Institute, Xinjiang, China
"Conserving the Wild Bactrian Camels by Developing Sustainable Desert Communities in Xianjiang, China"

Melanie Hart
Simon Fraser University, Burnaby BC, Canada *"Controlling the Peach Twig Borer Moth with Sound Signals"*

Dr. Chi-Hua Ho
The University of Texas at Austin, Austin, TX *"Producing Biodegradable Plastics from Wastewater"*

Sue House
Madison High Academy of Science & Natural Resources, Portland, OR
"Creating a School-Based Permaculture Garden that Provides Hands-On Educational Opportunities, Food for Students, and a Home for Wildlife"

Joshua Kearns
Aqueous Solutions, Huntington, WV
"Providing Safe Drinking Water to Rural Communities in Thailand Using Charcoal Filtration to Remove Pesticides"

Jennifer L. Morse
Duke University, Durham, NC
"Predicting the Fate of Nitrogen and the Impact on Water Quality and Greenhouse Gas Emissions from Sea Level Rise and Wetland Restoration"

Dr. Ganesh Raman
Illinois Institute of Technology, Chicago, IL
"Using High Frequency Sound Waves from Ultrasonic Actuators to Reduce Noise from Commercial Aircraft"

Shale Rosen
Gulf of Maine Research Institute, Portland, ME
"Evaluating the Use of Midwater Trawls to Reduce the Environmental Impact of Commercial Fishing"

Yaron Segal
Yale University, New Haven, CT
"Developing High Performance Materials to Directly Convert Waste Heat into Electricity"

PROJECTS FUNDED BY AVIATION GREEN™

Tom Ehresman
Loveland, Colo.
"Creating a Direct Injection Igniter Fuel Nozzle to Eliminate Use of Leaded Fuels in Existing High Power Density Aircraft Piston Engines"

Dr. Amy Lang
University of Alabama, Tuscaloosa, AL
"Reducing the Drag over Aircraft by Mimicking the Suface Geometry of Bristled Shark Skin Scales"

Education/Publications

The Lindbergh Foundation held a Hangar Party at Golden Wings Museum on September 27, 2008. The event was an educational forum for people to learn about the latest innovations in aviation in a fun atmosphere. The speakers included: Linden Blue of Spectrum Aeronautical who discussed his company's newest fuel-efficient jet. Patrick Farrell of Forward Vision spoke about his company's "Forward-Looking Infrared" technology for restricted visibility conditions like smoke, fog, and snow. Larry Williams of BRS talked about his company's aircraft parachutes, and special guest Alan Klapmeier spoke enthusiastically about the future of aviation, which he believes lies in technology.

Honor Roll: March 24 - Oct. 30, 2009

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