One man’s call:  
**MSU biologist creates company**

Just because something quacks doesn’t mean it sounds like a duck, especially not to ducks or James Callicutt.

Few people know more about the sounds of a duck than Callicutt, a Mississippi State University wildlife biologist who has spent much of his life as a duck hunter, but more importantly who spent recent years studying the sounds of the waterfowl and comparing them to duck calls made from all sorts of materials.

His research has created a scientific way to test duck calls to determine how accurately they can create sounds closest to the real thing, while his entrepreneurial spirit led to blending this into a company.

If all goes as planned, he’ll help other duck hunters across the country create more authentic duck sounds. While still early in the process of establishing branding, marketing, sales, and other elements associated with a business, Callicutt’s years of crafting handmade duck calls for friends and relatives makes his business endeavor a labor of love as much as anything else.

Chase Kasper, interim director of MSU’s Office of Technology Commercialization, said Callicutt’s passion for creating high quality duck calls could carry him far in a field where hundreds of duck calls fill hunting catalogs. “According to Hoover’s, the retail sporting goods market is a $35 billion/year industry.” Kasper said.

“This is a very good example of blending research, pastime, and entrepreneurship into one endeavor,” Kasper said.

Learning the importance of quality duck calls as a young man growing up hunting in north Mississippi, the MSU research associate and a high school friend, Steven Huffstatler, began making their own calls. The hobby soon turned into something bigger when friends and family kept asking them to make more.

As a graduate student at MSU, Callicutt’s research project, directed by professor of wildlife ecology and management Richard Kaminski, involved something never done in the waterfowl research world: scientifically analyzing the sounds of duck calls and comparing them to the sounds made by actual ducks.

This work led to a patent application on the research and gave Callicutt scientifically proven technology to help differentiate his duck calls from others.

After completing unique research related to duck sound analysis, Callicutt believed he was onto something that could benefit other duck hunters. He and Huffstatler decided to start a company with the assistance of Callicutt’s accountant brother, Joseph. In September, they created Hardwoods Waterfowl Calls, LLC.

“We’ve done something so unique,” he said recently in his office, filled with duck calls and decoys sitting on books.  

*see Waterfowl Calls on back*
Who is an inventor?
An inventor is a person who contributes to the conception of an invention.

But, what is an invention?
Under U.S. law, an invention is any useful, novel, and non-obvious process, machine, manufacture, or composition of matter, or any improvement thereof. The interpretations of these requirements vary, but courts have held that an invention occurs when there is conception and reduction to practice of any idea.

I think we have an invention, but who is the inventor?
The threshold question in determining inventorship is who conceived the invention? Unless a person contributes to the conception of the invention, he is not an inventor. Insofar as defining an inventor is concerned, reduction to practice, per se, is irrelevant.

In order for a person to be considered an inventor, that person must have contributed to the conception of the idea. The courts have further explained conception as the “complete performance of the mental part of the inventive act” or the “formation in the mind of the inventor of a definite and permanent idea of the complete and operative invention as it is thereafter to be applied in practice.” Clear as mud, right?

Well, what if I had help with this “mental part”?
An inventor can utilize many sources, such as suggestions from colleagues, work from employees, assistance from consultants, or other sources to solve the problems surrounding the implementation of an invention without those sources satisfying the legal definition of an inventor. Support from other sources will not grant inventor status so long as the inventor maintains intellectual domination of the work that results in an invention.

So, can there be multiple inventors?
There can be multiple inventors of a patented invention. An idea from a colleague, employee, consultant, or a boss that contributes to the conception of an invention, or some aspect of the invention, will qualify that person as an inventor. At the end of the day, if a person can point to a claim on the patent application and say that they conceived of that idea then that person should be named as an inventor.

But, what about reduction to practice?
Actual reduction to practice is not a criterion for inventor status; once an idea is conceived sufficiently clearly so that a person skilled in the art can reduce that idea to practice, then the inventive step is complete. Although reduction to practice is necessary to file for a patent, constructive reduction to practice, formalizing the idea into a patent or provisional patent application, is sufficient to satisfy the legal definition of an invention. But, just having an idea and not taking the additional step of reducing the idea to practice does not an inventor make.

What if the inventors named on the patent are wrong?
It is important to properly name each and every inventor of an invention. Failure to name the proper inventors will result in a loss of the patent! But do not worry, if inventors are not named due to an honest mistake, the USPTO will allow the error to be corrected.

If you have questions or concerns, feel free to contact Mississippi State’s Office of Technology Commercialization, where you can get help traversing these muddy waters!
A Mississippi State University research project to convert trail camera photographs into management tools has led to new software that could improve the deer population “picture.”

Wildlife biologists take age and antler measurements from harvested deer because the physical collection of data is relatively easy. Until recently, harvested deer were the only source of such data, but this provided no information on the remaining deer.

“Using information from harvested deer won’t accurately represent the deer population because of antler-based harvest regulations and hunters’ selectivity,” said MSU professor Steve Demarais.

Demarais and assistant Extension professor Bronson Strickland of the MSU Department of Wildlife, Fisheries and Aquaculture, supervised wildlife graduate student Jeremy Flinn as he developed an age and antler estimation software program.

Demarais said biologists and hunters can photograph most deer living in an area.

“We believe that a properly conducted camera survey can accurately reflect the herd’s true composition,” Demarais said.

Flinn said photos are not foolproof because they are two-dimensional, making antler measurements more difficult.

“A two-dimensional photo cannot compensate for curvature and depth perception,” Flinn said. “We fix this problem using equations that transform a two-dimensional measurement into a three-dimensional estimate.”

Digital images must be high quality to provide more precise measurements in the software to estimate the age and antler score of the deer.

“We began to see how this technique could be mutually beneficial to wildlife managers and sports enthusiasts because they could use the software to score a deer’s antlers and compare it with others within a herd or habitat area,” Strickland said.

Flinn measured the physical characteristics of more than 2,000 deer from across North America. He included the animals’ ear and eyeball widths, distances between eyes and nostrils, and the muzzle. These features are crucial to proper scaling of the photograph.

“The software allows a user to select the state or region where the deer was photographed,” Flinn said. “The software then accesses a unique set of physical features collected from that area. This ensures that antler size estimates are accurate by region.”

Flinn demonstrated the software at the 2009 national convention of the Quality Deer Management Association in Louisville, Kentucky. The demo caught the eye of Randy Russell, COO, of NBFog, Inc., an Austin, Texas-based company focused on outdoor businesses.

NBFog obtained a license agreement from MSU to market the software as BuckScore. The software will be available to educators, scientists and hunters to age and score antlers of white-tailed deer. Flinn, who accepted a job as general manager of BuckScore after he graduated this summer, has high hopes for the upcoming release of the software.

“The software can be used to determine the characteristics of antlers, such as their inside spread, main beam length or basal circumference,” Flinn said.

Future versions of the software will allow users to age deer. Age is one of the most important factors in correlating biological data to determine the condition of the deer herd.

“Two deer could be the same size, but one of them actually may be older,” Flinn said. “The younger deer may have more years left before he reaches his maximum size.”

There are more applications on the horizon. Software for scoring other species, such as mule deer and elk, could be developed using the same technique. This would help wildlife managers and hunters improve their decision-making when managing populations.

If nothing else, the software takes the guesswork out of judging size from a distance of 15 feet or higher in a tree stand.

Chase Kasper, interim director for MSU’s Office of Technology Commercialization, helped guide BuckScore through the licensing process. MSU began conversations about licensing with NBFog in the winter of 2009, and the license was signed in May 2010.

“We’re excited about formalizing the relationship with NBFog. They have a seasoned management team, and we are confident that their experience in the outdoor goods and services industry will lead to success in the commercialization efforts of MSU’s research efforts in this area,” Kasper said. “The company is ramping up development and production of the software in time for the upcoming hunting season.”

Go online to http://www.buckscore.com to find out more about the program.
Waterfowl Calls

Working on a licensing agreement with MSU’s Office of Technology Commercialization related to the research, the company will use university research to bring something new to the marketplace.

“This will definitely set us apart from everyone else in the industry,” Callicutt said.

While the company may not replace James Callicutt’s career as a wildlife biologist, his blend of research, entrepreneurial spirit, and interest in duck calls has created a new opportunity for him. He plans to begin attending trade shows to tell the waterfowl hunting world about his research-backed products.

However, with literally hundreds of different duck calls on the market, Callicutt will take a chance in the business world with his company. Like duck hunting, it will require patience, skill, the right materials, and perhaps a little luck.

For more information, contact Callicutt at 662-325-7499 or jcallicutt@cfr.msstate.edu.

We’ve moved!

The Office of Technology Commercialization has moved to Mississippi State’s Thad Cochran Research, Technology and Economic Development Park.

After construction of the new facility in the research park, OTC moved to the location with closer proximity to other business- and technology-related organizations associated with MSU.

The new location will place the university’s technology commercialization office in the building with the MSU Research & Technology Corporation and Entrepreneurship Center, all located on the ground floor of the 38,700-square-foot, three-story building.

Chase Kasper, interim director of OTC, said the change of location also places the office in the research park with current licensees of MSU technologies: Camgian Microsystems, Spatial Information Systems, and SemiSouth.

In addition to OTC’s new home, construction has begun nearby on another building that will include space for business incubators.

“This shows the growing entrepreneurial activity at the university,” Kasper said.

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