Theodore Roosevelt GENIUS PRIZE

Winner for Reducing Human-Predator Conflict

Cattle-producer designed Automated Mineral Bin
By Cameron Krebs

Submission Summary: The innovation's Automated Mineral Bin is a strategy for reducing human-predator conflict that combines standard livestock handling practices with robotic technology. Created by a 5th-generation Oregon sheep and cattle rancher, the project leverages the natural defensive behaviors of cattle and is easy for producers to implement. The project uses an automated salt bin to herd livestock into larger groups, reducing the risk of predation by large predators.

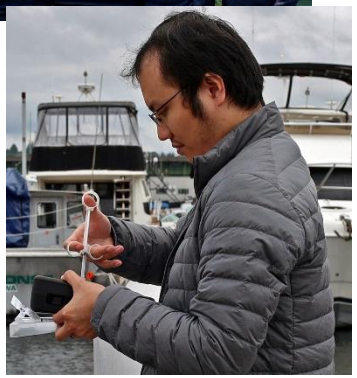
Cattle crowding into the bin after an evening inspection.

Theodore Roosevelt GENIUS PRIZE

Winner for Preventing Wildlife Poaching and Trafficking

The NABIT- Rapid, portable genetic testing tool for combating wildlife trafficking

By Conservation X Labs and the Thylacine Biosciences Team



The team; A sampling.

Submission Summary: When poached game or illicit wildlife products are processed, into steaks, filets, powders, or other forms, identifying the source species by visual inspection can be difficult. Conservation X Labs developed the NABIT, a portable battery-powered system, to rapidly perform a simple and non-technical genetic test. This system was designed for use by enforcement officials to quickly test a sample suspected of being poached or part of illegal trade. The NABIT could transform how genetics are used in conservation by enabling routine DNA sampling and identification by enforcement officials and agents directly at the site where they encounter a suspicious product or specimen. Timely genetic results will be clearly delivered on the screen of the device allowing officials to make decisions and act on what they have uncovered. This eliminates the need to send samples to labs and wait days or weeks to receive results. The goal of the proposed work is to deploy the NABIT in order to detect substitute and illicit wildlife products, including meat and other tissues.

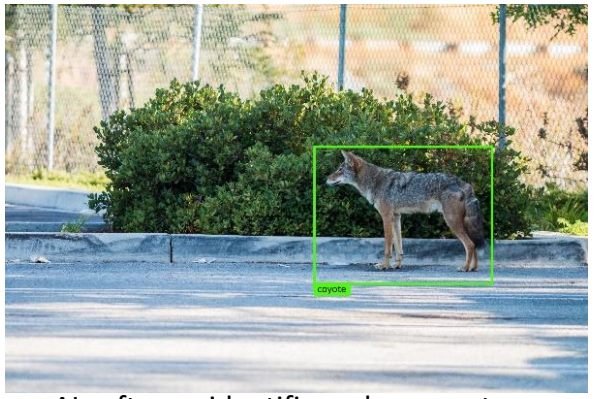
Theodore Roosevelt GENIUS PRIZE

Winner for Promotion of Wildlife Conservation

Harnessing Machine Learning to Connect Urban Residents to Wildlife Conservation through Social Media

By Jason Holmberg, Executive Director, Wild Me in collaboration with
Lincoln Park Zoo's Dr. Seth Magle, Executive Director, Urban Wildlife Information Network

Submission Summary: By harnessing machine learning to connect urban residents to wildlife conservation through social media, this innovation facilitates a deeper connection to engage Americans in conservation. Using proven artificial intelligence software to identify media content and social media posts about urban wildlife, the innovation aims to collect important ecological data and create dialogue between users and scientists via their posts. Resulting dialog can be used to 1) notify users about their contribution and relationship to research, 2) collect further ecological data on observed species, and 3) pique users' interests in future conservation initiatives.



AI software identifies urban coyote.

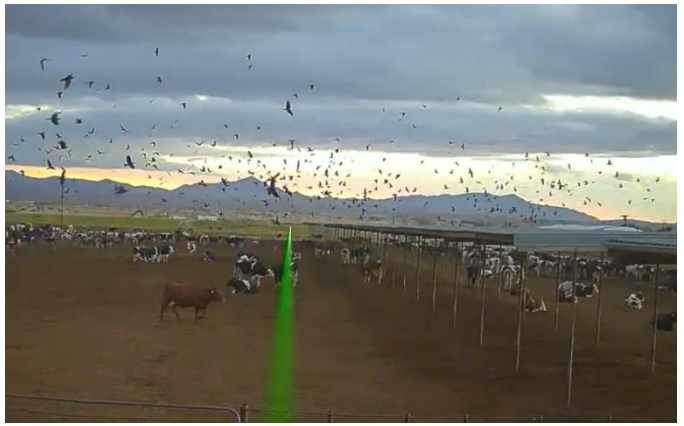
Theodore Roosevelt GENIUS PRIZE

Winner for the Promotion of Nonlethal Management of Human-Wildlife Conflict

Creating a No-Fly Zone for Nuisance Bird

By Boarman, Boarman and Shields through Hardshell Lab

Submission Summary: This innovation aims to greatly improve laser repulsion of nuisance birds by using species specific responses to different colored lasers and flash patterns. Incorporation of artificial intelligence and field-hardy mesh communication networks will allow semi-autonomous and autonomous laser operation to deter birds from treatment areas. Birds maybe considered nuisance when human health and safety concerns arise. Future plans include systematizing the use of these refined lasers to provide efficient protection of sensitive species habitat and nesting grounds, agricultural resources, electrical infrastructure, and waste treatment facilities.



Ravens fleeing the laser beam during testing.

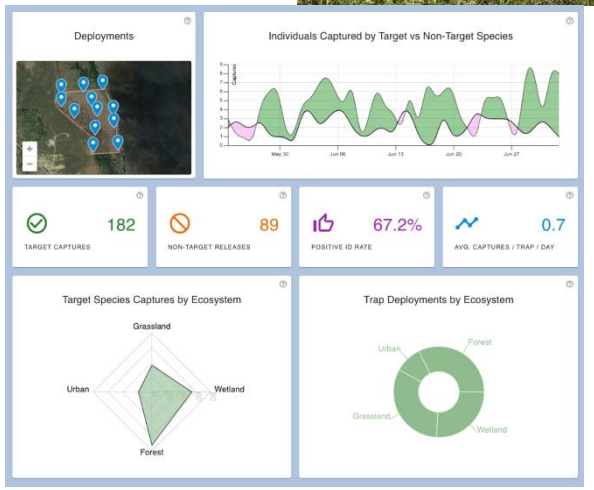
Theodore Roosevelt GENIUS PRIZE

Winner for Management of Invasive Species

Smart-Trapping System for the Live-Capture and Monitoring of Invasive Reptiles

By Ben Stookey and Derek Yorks, co-founders of Wild Vision Systems

Submission Summary: This innovation suggests a live-trapping system and data platform that utilizes artificial intelligence to identify and capture invasive snakes and lizards in a stationary robotic trap. This framework enables scalable, cost-effective and sustained deployment of smart trap networks for effective control and monitoring of invasive species. A combination of field-tested techniques and emerging technologies could fundamentally improve the toolset available to ecological restoration professionals for a variety of invasive species management challenges.



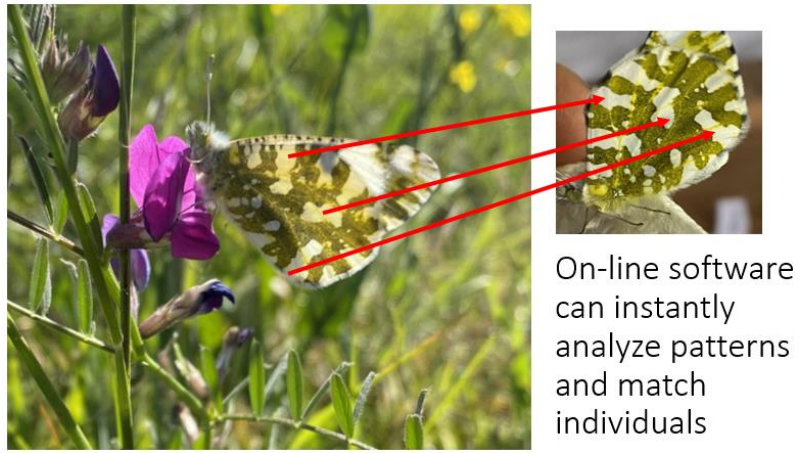
Theodore Roosevelt GENIUS PRIZE

Winner for Protection of Endangered Species

Expanding the Use of Photo-Identification Technology to include Tiny, Flying and Ephemeral species

By Jenny Shrum

Submission Summary: This innovation aims to expand the use of photo-identification technology to the individual insect level and use photo-identification to resolve information gaps for rare butterflies, such as the island marble butterfly (*Euchloe ausinodes insulanus*). Advances in digital cameras, accelerating database processing, and improved artificial intelligence software combined with the general availability of these technologies can continue to advance the methods of protective endangered species.



On-line software can instantly analyze patterns and match individuals