

# The objective

To identify a new method, or improve upon an existing method, to mark animals as nonsurgically sterilized or contracepted.









### **Target Populations (our focus):**

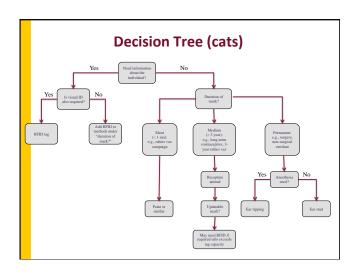
- Non-surgically sterilized cats, particularly free-roaming/feral populations
   Non-surgically sterilized free-roaming/
- community dogs
- Dogs and cats who are temporarily contracepted and require re-treatment, with a focus on freeroaming/community populations





### Potential applications for:

- Surgically sterilized free-roaming cat and dog populations
- Rabies vaccination campaigns (free-roaming animals, esp. dogs) Even livestock and marked/monitored wildlife populations



### **Multi-Phase Process**

- Literature review of current marking techniques
  - What currently exists and uses, pros, and cons of these options; findings from wildlife and livestock
- InnoCentive Challenge (www.innocentive.com)
  - Crowd-sourcing innovation
  - 367 participants from around the globe, 74 active solvers,
     99 proposed solutions → 2 winners, 2 runners-up
  - Solutions provided foundation for Think Tank
- Scientific Think Tank
  - Convened experts, professionally facilitated, included presentation on Dr. Leoci's preliminary study findings
  - Yielded consensus about desired/necessary features of mark and recommendations for how to proceed

## **Think Tank Participants**

### Scientific and expert panel:

- Dr. John Boone
- Kelly Coladarci
- Bruce Earnest
- Dr. Amy Fischer
- John Friar
- Dr. Stan Gehrt
- Dr. Michelle Kutzler
- Dr. Cynthia MillsAnne Olscher
- Gene Pancheri
- Gene Fanchen
- William Perlman
- Dr. Sheilah Robertson
- Aileen L. Walden

### ACC&D representatives:

- Joyce Briggs
- Valerie Benka

### Research presentation:

· Dr. Raffaella Leoci

### Facilitation:

- Dorian Simpson
- Ed de la Fuente
- (Planning Innovations Group)

### Scientific Reporting:

Dr. Tamara Golden
(Golden Bioscience Communications, LLC)

Many thanks to our Think Tank sponsor:



#### Marking Criteria: Minimum and Ideal Visibility >25 ft >3 years Life of animal Behavioral Impact (i.e., interference with None None normal behavior, other animals, or humans Application Time required <10 minutes 5 seconds Training required to Little None apply mark Humane/pain level No anesthesia, pain controllable/very brief No anesthesia, no pain Cost per application <\$10 <\$1 Deferred discussion Ease of Retrieval Visual + data capture simple device Type of treatment, date(s) of treatment, other Quantity of information Treated (yes/no) Info retrieval device <\$50

# **Current Marking Methods**

### Used for dogs and/or cats

- Observation/imaging
- Collars
- Microchips
- Tattoo
- Ear tags
- Ear notching
- · Ear tipping
- Freeze branding

### **Used for other species**

- Leg bands
- DNA profiling
- Iris/retinal scanning
- Hot branding
- Paint





# **Solutions**



- Focused on ear marking to enhance visibility
- To date, have ear tag options really been optimized?
  - Opportunities for innovation: materials, shape, placement, analgesia, antiseptic/ antibiotic, piercing mechanism
- · Optional RFID technology





### **Solutions: Visible Component**

- Ear stud with disk. Advanced material (e.g., flexible, non-reactive silicone).
- Disk potentially convex/concave to reduce contact with fur/skin.
- Bright center post, color- or shape-coded to ID procedure, date, location applied, additional desired information.







- Apply with ear piercing-type gun using local anesthetic/NSAID/ antiseptic – e.g., Tri-Solfen. Use squeeze trap for cats.
- Outreach component (option for caretaker to have matching stud, community education about meaning of stud/colors).

### Solutions, cont'd: Visible component

- Flexible (breathable? reflective?) ear wrap attached with 2+ thin posts, folded over ear
- Appropriately sized/shaped for individual animal.
- Color-coded or patterned to convey information.
- Apply with local anesthetic/NSAID/antiseptic e.g., Tri-Solfen.
   Use squeeze trap for cats.







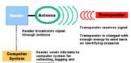


### Solutions, cont'd: Technology add-ons

- Optional add-on: SAW RFID/QR code
- External placement = extended range
- Possibility of adding RFID or QR code once optimal "tag" design is determined
- Value-add: "smart traps" release treated animals, auto-monitoring using detectors at feed stations







# **Next Steps**

- Tag and application design: Design and fabricate tag prototypes, accounting for myriad factors and outsourcing to experts.
- Study design: Controlled and field.
- **Potential partner outreach**: Identified broad potential partner categories, plus multiple possible partners within each. Explore opportunities for partnerships.
- Community considerations: Account for cultural and physical barriers to application/compliance in target communities.

# Interested in learning more?

- Check out our complete Think Tank report and literature review of current marking methods in the 5<sup>th</sup> International Symposium online proceedings.
- Questions/suggestions? We'd love to hear from you! Please contact Valerie at valerie@acc-d.org, (734) 780-7817.

