PRINCIPAL INVESTIGATOR:
Annette L. Litster BVSc PhD FACVSc (Feline Medicine) MMedSci (Clinical Epidemiology),
Director, Maddie’s Shelter Medicine Program

ANNUAL REPORT
Grant Year 4 - JULY 1 2010 TO JUNE 30 2011

Principal objectives of the grant:
1. Educate and train future leaders in the field of shelter medicine;
2. Conduct practically-relevant research in the areas of shelter medicine and pet homelessness; and to
3. Develop leadership in public education, dissemination of information and continuing education in shelter medicine.

Program Director: Dr. Annette Litster
Co-Investigator: Dr. George Moore.
OBJECTIVE 1 - EDUCATE AND TRAIN FUTURE LEADERS IN THE FIELD OF SHELTER MEDICINE

Dr. Ruth Landau – Maddie’s PhD Student in Shelter Population Medicine.

Please see Appendix 1 for a summary of Dr. Landau’s progress over 2011-2012 and Appendix 2 for Dr. Landau’s final Plan of Research (abbreviated).

Sheryl Walker – Maddie’s PhD Student in Canine Behavior.

Please see Appendix 3 for a summary of Sheryl’s progress over 2011-2012.

Dr. Jamieson Nichols - Maddie’s PhD Student in Shelter Population Medicine

Please see Appendix 4 for a summary of Dr. Nichols’s progress over 2011-2012.

Dr. Sara Bennett - Purdue Maddie’s Shelter Medicine Program Resident in Animal Behavior.

Please see Appendix 5 for a summary of Dr. Bennett’s progress over 2011-2012.

Dr. Rebecca Bukowy DVM, Maddie’s Post-DVM Fellowship in Shelter Medicine.

Dr. Bukowy commenced the Maddie’s Post-DVM Fellowship on August 22 2011. The first 2 weeks of her fellowship was spent performing high quality, high volume spay and neuter surgeries at the SPOT clinic with Nancy Ferguson, DVM in Cloverdale, IN. In early September 2011, Dr. Bukowy began working at PAWS Chicago Rescue and Recovery Center where she worked with Dr. Barbara Hanek on shelter intake procedures, pre-surgical examinations of shelter animals, triage and treatment of unwell animals coming into the Center from foster parents and as transfers from other shelters, and population management for animals at the Center. Dr. Bukowy also spent time at the PAWS Chicago Pippin Fasseus Adoption Center, assessing the population and making recommendations for medical care of individual animals and for overall population management.

In 2011, Dr. Bukowy attended the West Indies Veterinary Conference (St. Kitts, October 22-29; attended meeting at her own expense). While in the Caribbean, she provided spay/neuter services to World Vets, Ecuador, a non-profit organization. In January 2012, Dr. Bukowy returned to the SPOT Clinic for 2 weeks for further practical instruction in high quality, high volume spay/neuter, before attending NAVC Orlando FL, where she attended the Shelter Medicine track and the annual general meeting of the ASV. In February, Dr. Bukowy was part of the Grand Consult team, joining the University of Florida Maddie’s Shelter Medicine Program for an assessment at Alachua County Animal Services.

Throughout 2011-2012, Dr. Bukowy has planned and conducted her Fellowship study, Clinical Trial to Determine the Efficacy of Famciclovir as Part of Intake Protocol for Shelter Cats. Previous PCR studies by the Purdue Maddie’s Shelter medicine Program have confirmed that approximately 90% of cats entering PAWS Chicago are infected with feline herpesvirus (FHV). Oral famciclovir has been used successfully to treat shelter cats with FHV, but an effective clinical dose rate has not yet been established. Human studies have reported clinical efficacy using a single dose of famciclovir administered within 1 hour of the onset of early signs of an episode of genital herpesvirus. We hypothesize that shelter cats treated with a single oral dose of famciclovir at intake will have reduced clinical signs of upper respiratory tract disease (URTD) 7 days later when compared to those treated with placebo at intake. To this end, we designed a randomized, blinded clinical trial to address this hypothesis. At June 30, 2012, 69
adult (>6 months old) cats entering PAWS Chicago have been enrolled in the study. On June 15, Dr. Bukowy presented a seminar to students and faculty at Purdue University College of Veterinary Medicine, explaining her research and the problem of upper respiratory tract disease in shelter cats.

**Shelter Animal Medicine Lecture Course (VCS 89300)**

This one-credit elective lecture course was held in the fall semester 2011. There were 14 DVM students enrolled and 10 more DVM students audited the course. The increase in class size was directly attributable to the changes made in response to a student survey conducted in the spring semester of 2011. Changes included a class field trip to the Humane Society of Indianapolis where ASPCA check sheets were used as active learning tools for the class.

Student evaluations conducted at Purdue showed that the median overall course rating reached a high so far since the course commenced in Spring 2009 (4.5/5). A further change to the course was approved by Purdue Veterinary Medicine faculty in spring 2012 to allow it to be a Pass/Not pass course, rather than a graded course, as previously.

**Purdue Student Chapter of the Association of Shelter Veterinarians (SCASV)**

There are 35 active members of the SCASV at Purdue. Here is a summary of activities for July, 2011-June, 2012 –

- **September 10, 2012** - Shelter Club and American Association of Feline Practitioners traveled to Chicago and took tours of Tree House Humane Society, PAWS Chicago Rescue and Recovery Center and Chicago Animal Care and Control. Finally, club members made their way to PAWS Chicago Pippin Fasseus Adoption Center for a tour.

Left - Purdue SCASV members tour Tree House Humane Society, Chicago
• **October 16th 2011** - The 2011 Maddie's IVMA Animal Sheltering Symposium was held in Indianapolis. Speakers included Dr. Litster and students were offered a discount on the events fee and encouraged to attend.

• **October 22nd 2011** - The VCS 89300 Shelter Animal Medicine lecture class visited the Humane Society of Indianapolis. SCASV members who were not already part of the class also attended.

• **October 11 2011** - Purdue SCASV member Emily Rudman (DVM Class of 2014), was featured in a Greater Lafayette *Journal and Courier* newspaper story about her involvement in animal rescue transport. The story was published in conjunction with advance publicity about the SCASV lunch meeting that featured Tara Harris, M.D. (forensic pediatrician at Riley Hospital for Children in Indianapolis), who founded Every Dog Counts Rescue, an ‘All-Breed All-Needs Rescue & Transport Team’. Emily has been volunteering to help with animal rescue transports since last spring. The lunch meeting in Lynn Hall attracted several members of the Greater Lafayette community as well as PVM students interested in learning about animal rescue transport, which utilizes teams of volunteers to relocate pets to areas in need of shelter pets (photo from Purdue Veterinary Medicine Vet Gazette below).
• **February 15-17, 2012** - The Purdue SCASV made call outs to Indiana animal shelters to invite them to attend a meeting presenting information about Priority4Paws, Purdue College of Veterinary Medicine’s new mobile spay and neuter unit, to be launched in July 2012.

• **February 29, 2012** - SCASV luncheon with speaker Dr. Ruth Landau. Dr. Ruth gave a presentation to club members on *Helping Animal Shelters (and Animals) Survive.*

• **March 22, 2012** - SCASV luncheon with speaker Dr. Litster - *Managing Feline Panleukopenia in Shelters.*

• **April 26, 2012** - Purdue SCASV hosted a lunch meeting where Dr. Nancy Ferguson spoke about the new Purdue mobile spay/neuter unit, Priority 4 Paws. The meeting was attended by club members, Maddie’s Shelter Medicine Program graduate students and Priority4Paws veterinary technicians. The unit will visit Indiana animal shelters on a regular 3-week timetable, giving senior veterinary students the opportunity to spay and neuter shelter pets during a 2-week clinical rotation, followed by a week spent working with veterinarians at PAWS Chicago or Montgomery County Animal Resource Center, Dayton, OH.
• **April 14, 2012** – SCASV members hosted a booth at Purdue University 2012 Open House, which featured information on the importance of microchips in companion animals and their particular relevance to shelter medicine.

![](image1)

Above - Children who attended Open House were invited to scan the ‘pet’ dogs and cats for implanted microchips.

**Maddie’s Shelter Medicine Program - Shelter Externships/3-Week Off-Campus Blocks**

The following student shelter experiences have been undertaken (2010-2011) –

• One senior DVM student completed a 6-week externship at the Humane Society of Indianapolis. A further 5 senior DVM students completed 3-week off-campus blocks at the Humane Society of Indianapolis.

• Two senior Veterinary Technology students completed 6-week externships at PAWS Chicago, and stayed in the Maddie’s Shelter Medicine Program apartment. Each of these students was awarded $1000 Maddie’s Shelter Medicine Program scholarships on completion of their externship.
Maddie’s Shelter Medicine Program Award

The 2011 Maddie’s Shelter Medicine Program Award was won by Rebecca Rider (DVM Class of 2012). Rebecca was enrolled in the Shelter Animal Medicine lecture class in fall 2009 and completed a 3-week off-campus block at the Humane Society of Indianapolis in July 2011. She also served as President of the Purdue Student Chapter of the Association of Shelter Veterinarians in the 2010-2011 academic year. Rebecca is aiming to include shelter work in her private practice career in New Jersey.

Above - Rebecca Rider (Purdue DVM Class of 2012) receives the 2011 Maddie’s Shelter Medicine Program Award from Professor Catharine Scott-Moncrieff, April, 2012.
OBJECTIVE 2 – CONDUCT PRACTICALLY-RELEVANT RESEARCH IN THE AREAS OF SHELTER MEDICINE AND PET HOMELESSNESS

2012 Maddie’s Summer Research Experience

Emma Klein, a Purdue DVM student, has successfully completed the first half of a major 2-part international study which compares clinical and microbiological data from cats in shelters in Chicago and the UK to gain insight into the effect of housing type on the prevalence of upper respiratory tract disease (URTD). Conjunctival and oropharyngeal swabs were collected from 170 cats at Chicago Animal Care and Control for PCR testing to establish the prevalence of feline upper respiratory disease pathogens in the population. Additionally, cats from 4 different kinds of housing/shelter type were scored for clinical signs of URTD at 1-week intervals over 4 weeks, using a previously published scoring system developed by the Purdue Maddie’s Shelter Medicine Program. The housing types/shelters studied were –

1. PAWS Chicago Adoption Center – Purpose-built room housing; adoption-guarantee shelter
2. The Anti-Cruelty Society – Traditional cage housing; limited admission shelter
3. Tree House Humane Society – Room housing in a converted house; adoption-guarantee shelter
4. CACC - Traditional cage housing; municipal shelter

This study is the US arm of the Across the Pond Feline URTD Study. In 2013, the study will be repeated in UK shelters matched on cat housing type with the 4 shelters in Chicago, to determine the major factors which result in the dramatic difference in rates of feline shelter URTD between the two countries. The UK arm of the study will be performed in collaboration with the Centre for Evidence-Based Veterinary Medicine, University of Nottingham, UK.

Here is an abstract from the study, reporting some of the data collected, presented at the MERIAL – NIH Symposium, August 2-5, 2012, Colorado State University -

Upper Respiratory Tract Disease (URTD) is second only to overcrowding as a cause of euthanasia of cats entering US shelters and environmental and management factors are important in disease prevalence and transmission. The aim of our study was to investigate a possible association between shelter type and the prevalence of clinical feline URTD. Cats from 2 Chicago shelters were assessed for clinical signs of URTD weekly for 4 weeks using a scoring system. Chicago Animal Care and Control (CACC) is an open admission municipal city shelter that uses cage housing. Tree House Humane Society (THS) is an adoption-guarantee cat-only shelter with room housing. The mean age of cats at CACC was younger than at THS (CACC n = 116 median = 12 months; THS n = 74 median = 24 months; P < 0.0001) and cats at CACC were more likely to be owner-relinquished, while cats at THS were more likely to be strays (P < 0.0001). Only 8.6% of females entering CACC were spayed and 16.4% of males were neutered, but all cats at THS were spayed and neutered on entry. After 1 week, of 387 cats originally at CACC, only 31.5% remained (n = 122) and 1.8% (n = 7) after 3 weeks. After 1 week, of 87 cats originally at THS, 90.8% remained (n = 79) and 63.2% (n = 55) after 3 weeks. Cats entering CACC had higher ocular discharge scores than those entering THS, but over the first 3 weeks of stay, there were statistically significant changes in ocular and nasal discharge in cats at THS (ocular discharge P = 0.0001; nasal discharge P = 0.0289), but not at CACC (P > 0.05). We
conclude that differences in the incoming cat population and housing in each shelter are important factors affecting the prevalence of URTD in shelter cats. Research and student support provided by Maddie’s Fund.

Additionally, over summer 2012, the Purdue Maddie’s Shelter Medicine Program provided partial funding to Maggie Placer (Purdue DVM Class of 2014) for a second summer study - Comparison of SAFER aggression assessment results in shelter dogs at intake and after a 3-day acclimation period. Maggie worked on this study with Sheryl Walker, Maddie’s PhD Student in Canine Behavior and additional support was obtained from a scholarship awarded by the American Humane Association Veterinary Student Scientist Program.

Here is the abstract from the study -

This cross sectional study addresses the question of when to perform behavioral assessments on shelter dogs using the ASPCA SAFER™ Aggression Assessment Program. The effects of shelter intake and subsequent acclimation in the shelter on behavioral evaluation results are unknown. The SAFER™ assessment involves scoring of seven different tests for potential types of aggressive behavior. SAFER™ testing was performed at a municipal shelter on the day that a dog arrived at the shelter and again after an acclimation period of 3 days. To date, 8 dogs have been evaluated upon intake and again after an acclimation period of 3 days. Four other dogs assessed at intake were lost to the study due to owner retrieval or euthanasia. All of the follow up testing involved a scoring difference of at least 1 point in at least one of the seven different tests for potential types of aggression. Within the 8 SAFER™ follow up assessments there were 13 tests involving a change from the original score, 4 test results showed a decrease in aggression, and 9 tests indicating a greater demonstration of aggression following the 3 day acclimation period. Ideally, 100 dogs will be evaluated by the end of the study, yielding more conclusive results. SAFER™ must be thoroughly analyzed to validate the most efficient timing of behavioral assessment. Accurate behavior assessment is a vital part of a successful shelter adoption program. Additionally, accurate assessment of the potential for aggression in dogs entering shelters is essential to protect shelter staff and adoptive families. Support provided by Maddie’s Fund and the American Humane Association Veterinary Student Scientist Program.
2011 Maddie’s Summer Research Experience

Survey to investigate pet ownership and attitudes to pet care in metropolitan Chicago dog and/or cat owners. Amber Freiwald and Dr. Annette Litster. June-August 2011.

Data collection was completed from 529 surveys. Our aims were to (1) examine community’s average dog and/or cat standard of care, and (2) compare standard of care for pets acquired from a shelter vs. other sources. Results analysis and manuscript preparation is ongoing. An abstract has been submitted for an oral presentation at the Conference of Research Workers in Animal Diseases in Chicago in December 2012.

Maddie’s Shelter Medicine Program - Ongoing Studies

Major long-term controlled study of Feline Immunodeficiency Virus (FIV) infected cats – The Maddie’s Purdue FIV Project - Five-year serial investigation of clinical, survival, hematological and virology data in FIV-infected cats and age-, sex- and location-matched FIV-negative control cats; also blood sample collection for banking and further data generation. Data collection and cat enrollment commenced in November 2009 and enrollment (89 FIV-positive cats and 89 FIV-negative cats, age-, sex- and location-matched) was completed in February 2012. These cats
were sourced from PAWS Chicago, Tree House Humane Society, the Fitzhugh B. Crews FIV Cat Sanctuary, plus some private cat owners/adopters. Data collection continues at 6-monthly intervals or more often as required at 3 study sites – Chicago IL, Jasper GA and Memphis TN. A new flow cytometric technique which allows veterinarians and shelters to differentiate FIV-vaccinated cats from FIV-infected cats has been developed by the Maddie’s Purdue FIV Study and a manuscript has been submitted for publication to the Journal of Veterinary Internal Medicine (Diagnostic utility of CD4%:CD8low% T-lymphocyte ratio to differentiate feline immunodeficiency virus (FIV)-infected from FIV-vaccinated cats). Evidence which has quantified the risk of transmission of FIV in co-habitating FIV-positive and FIV-negative cats was presented at the 2012 American College of Veterinary Internal Medicine Forum (Serial FIV serological results in cohabiting FIV-positive and FIV-negative cats) and is also the subject of a manuscript in preparation.

**Use of a real-time PCR assay to identify infectious agents in cats with clinical signs of upper respiratory disease.** Collaboration with Dr. Ching Ching Wu, ADDL and Dr. Christian Leutenegger, IDEXX. December 2009-present. Data collection completed from 43 cats. Results analysis and manuscript preparation is ongoing.

**Clinical trial to compare 7-day and 14-day doxycycline treatment for the treatment of Mycoplasma spp. infection in cats with upper respiratory tract infection.** A manuscript has been submitted for publication to Comparative Immunology, Microbiology and Infectious Diseases. Additionally, an abstract has been accepted for oral presentation at the Association of Shelter Veterinarians track NAVC Orlando, January 2013.

**Use of Ponazuril as a first line treatment for coccidiosis in dogs and cats.** Randomized comparison trial comparing the efficacy of ponazuril at 3 different dose rates in coccidia-infected shelter dogs and cats. January 2010-present. At June 30 2012, data collection was complete from 39 cats and 21 dogs (Goal: 51 cats and 45 dogs).

**Epidemiology of feline panleukopenia virus infection in a shelter.** Collaboration with Dr. Chutamas Benjanirut, Faculty of Veterinary Medicine, Chulalongkorn University, Thailand. This is a retrospective records study which analyzes medical and historical data from of all cats at PAWS Chicago that were diagnosed with panleukopenia and all in-contact cats over a one-year period (2010). A manuscript has been submitted for publication to the Journal of the American Animal Hospital Association.

**A user-friendly decision-support tool for shelter financial management.** Collaboration with Dr. Nicole Olynk Widmar and Emily Lord, Purdue University Department of Agricultural Economics.

Shelters must remain viable entities in order to continue to work towards fulfilling their missions. Business management skills, and enhancing the industry-specific decision making tools available, specifically financial decision-support tools, will help provide shelters the support they need to continue into the future. The successful management of an animal shelter depends on several factors, both biological and economic in nature. This project proposes to develop an in-depth series of Excel-based worksheets capable of walking shelter managers or workers through the process of determining the costs and benefits of various shelter management
strategies. User-friendly computer-based worksheets, designed to aid managers in efficiently
determining their costs, revenues, and levels of efficiency will be developed. Simply
highlighting areas of the business which are financially sound vs. those which are areas for
potential improvement will enable more informed decision making by shelter managers. Once a
shelter has determined their costs and revenues and highlighted areas for improvement, the
proposed tool will enable managers to weigh the options or strategies to determine which is best
for their shelter. Allowing managers to ‘test out’ various alternative strategies and determine the
financial consequences, whether negative or positive, via a decision-support tool will enable
managers to efficiently assess their options and improve their decision making capabilities. The
final product for delivery to shelter managers will be a user-friendly decision-support tool which
can be used to efficiently determine potential outcomes of various shelter management decisions.

Over January-June, 2011, Dr. Olynk and Emily Lord developed Excel-based worksheets
capable of determining costs and benefits of various management strategies. Three manuscripts
are being prepared for journal submission, focusing on using the tool to save lives by optimizing
adoption strategies, shelter inputs (shelter supplies and labor) and length of stay.
OBJECTIVE 3 - DEVELOP LEADERSHIP IN PUBLIC EDUCATION, DISSEMINATION OF INFORMATION AND CONTINUING EDUCATION IN SHELTER MEDICINE

Journal Articles Accepted for Publication, July 1 2011-June 30 2012


**Maddie’s IVMA Animal Sheltering Symposium**

The second annual Maddie’s IVMA Animal Sheltering Symposium took place at the Indianapolis Marriott East, Indianapolis on October 16, 2011 and 33 veterinarians and shelter workers attended. Dr. Susan Krebsbach (animal behaviorist) was our keynote speaker and she presented practically-oriented lectures on *Curing the litter box blues: Feline elimination disorders* and *Seniors and shelters: Looking after geriatric pets in shelters and getting them adopted.*

Other speakers included –

- Dr. Sandy Manfra (veterinary dentist) - *Practical aspects of dentistry in shelter pets*
- Dr. David Bash of reTails; Robin Kennedy of Southside Animal Shelter; Christine Jeschke of Humane Society of Indianapolis - *Adoption Forum.* Three speakers each presented 10 minutes of adoption tricks and tips followed by a lively discussion with the audience.

Participant feedback was very positive and information was collected on suggested topics for future symposia.

Additionally, PAWS Chicago held a Shelter Medicine Symposium for veterinarians and shelter workers in the Chicago area in August 2011 (details of Dr. Litster’s presentations below).
Maddie’s Shelter Medicine Program –

Dr. Annette Litster - Presentations and Purdue Maddie’s Shelter Medicine Program Travel

- PAWS Chicago Symposium, Chicago, IL, August 2011. Total of 3 lecture hours.
  - *Feline URI: A shelter perspective*
  - *Our shelter studies: Parts 1 and 2*
- Dr. Annette Litster - 41st Annual Student American Veterinary Medical Association Symposium, West Lafayette, IN, March 2012.
  - *Vaccination protocols for shelter dogs: what’s the latest evidence?*
  - *The Asilomar Accords – saving lives by understanding local community attitudes and the human-animal bond*
- Dr. Annette Litster - *Serial FIV serological results in cohabiting FIV-positive and FIV-negative cats.* The 30th Annual Scientific Meeting of the American College of Veterinary Internal Medicine, New Orleans, LA. June, 2012. (Oral research abstract)
- Other travel for the Purdue Maddie’s Shelter Medicine Program included -
  - Regular data collection trips to Chicago, Atlanta and Memphis for the Maddie’s Purdue FIV Study.
  - NAVC Orlando, Shelter Medicine track and Annual General Meeting of ASV - DR. Rebecca Bukowy, Dr. Jessica Von Waldau (PAWS Chicago Chief Veterinarian), Kristen Hall RVT (Purdue Maddie’s Shelter Medicine Program Vet Tech at PAWS Chicago) and Dr. Annette Litster attended in January 2012.
  - Dr. Rebecca Bukowy - Dr. Bukowy’s travel included participation in the Grand Consult team, joining the University of Florida Maddie’s Shelter Medicine Program for an assessment at Alachua County Animal Services; two 2-week trips to SPOT Clinic, Cloverdale IN.
  - Dr. Sara Bennett - Shelter Behavior Medicine course August 2011, The Center for Shelter Dogs - Animal Rescue League of Boston, MA.
  - Sheryl Walker and Dr. Sara Bennett - International Society for Applied Ethology (ISAE) 45th Congress – July, 2011, Indianapolis, IN.

Purdue Maddie’s Shelter Medicine Program apartment in Chicago

The apartment has been used by Purdue DVM and VT students throughout the year and by Maddie’s Summer Research Experience students. The apartment lease was renewed in May 2012. There were no maintenance issues during the year and the apartment was kept very clean by all occupants.
APPENDIX 1
Dr. Ruth Landau – Maddie’s PhD Student in Shelter Population Medicine
Summary of Progress July 1 2011-June 30 2012

Milestones
July 1, 2011 Oral Preliminary Examination for PhD candidacy – Passed

Presentations
Feb 2, 2012 VCS 51700 – Achieving Success in Private Practice: “Communication in Veterinary Medicine”
Feb 29, 2012 Purdue Shelter Medicine Club: “Helping Animal Shelters Survive”
Mar 17, 2012 SAVMA Symposium at Purdue: Panelist on “Cross Cultural Euthanasia” panel

Veterinary Conferences/Continuing Education Seminars/Workshops
Sept 21-23, 2011 Purdue Fall Conference (West Lafayette, IN) – (CEU’s earned = 12)
October 16, 2011 IVMA Shelter Medicine Symposium (Indianapolis, IN) – (CEU’s earned = 6)
January 26, 2012 Maddie’s Fund: Shelter Crowd Control Webinar – (CEU’s earned = 1)
Feb 11 & 22, 2012 Scientific Writing Workshop with Dr. Martha Tacker

Veterinary Licensure CE Hours Earned in Year Three: 19 CEUs

Courses Completed
Summer 2011 Research PhD Thesis (S)
Fall 2011 Question Testing Methods (U of M) (A)
Questionnaire Design (U of M) (A)
Seminar in Epidemiology (Purdue) (A)
Research PhD Thesis (Purdue) (S)
Spring 2012 Quantitative Methods (Purdue) (B+)
Seminar in Epidemiology (Purdue) (A)
Research PhD Thesis (Purdue) (S)
Summer 2012 Research PhD Thesis (Purdue) (S)

PhD progress:
Overall earned hours toward completion of PhD = 126
Overall GPA = 3.81

PhD Committee Meetings
July 1, 2011 PhD Committee Meeting - Oral Preliminary Examination
Nov 14, 2011 PhD Committee Meeting – Teleconference with Dr. Larry Glickman
April 26, 2012 PhD Committee Meeting #4 - Plan of Research (revised)
“Improving the quality of health care for pets owned by Spanish speaking persons with limited English proficiency”
Institutional Review Board (IRB) Applications
June 29, 2012  “Telephone Survey of Spanish-speaking Pet Owners regarding Pet Ownership and Use of Veterinary Services” / P.I. = Dr. George Moore

Other - Project Meetings/Community Outreach
November 1, 2011  Dr. Ron DeHaven, AVMA – Schaumberg, IL
November 9, 2011  Lisa Greenhill, AAVMC – Washington, DC (Teleconference)
November 18, 2011  Miriam Acevedo, Director, La Plaza Community Center – Indianapolis IN
January 19, 2012  Patty Spitler, WISH-TV Channel 8 - Vet Care without Barriers
March 20, 2012  Dr. Bruce Craig & Whitney Huang – Statistical Consulting Services - Purdue

Clinical Veterinary Work
(Ongoing)  Well Pets Economy Clinics: Speedway, IN
Well Pets Economy Clinics: Greenwood, IN
Well Pets Economy Clinics: Indianapolis, IN
Well Pets Economy Clinics: Fishers, IN
Janssen Veterinary Clinic: Sheridan, IN

Above - January 19, 2012 - Vet Care without Barriers, WISH-TV Channel 8
APPENDIX 2
Dr. Ruth Landau – Maddie’s PhD Student in Shelter Population Medicine Education –
Plan of Research - Abbreviated

Project Title:
Improving the quality of health care for pets owned by Spanish speaking persons with limited
English proficiency

Introduction: Latinos are the fastest-growing ethnic group in the United States and account for
56% of U.S. population growth over the past decade. Currently Latinos number 50.5 million
persons and comprise 16.2%, of the nation’s 311 million inhabitants. While the U.S. national
population grew 6% from 2000 to 2006, the Latino population grew by 24.3% during the same time
period. By the year 2050, it is projected that Latinos will number 102.6 million or 24.4% of the U.S.
population (Pew Hispanic, 2/11/12). Despite the Latino population explosion, little is known
about the type and quality of veterinary care provided to pets of Spanish-speaking owners who are
considered to have limited English proficiency (LEP). Information is also lacking on the proportion
of veterinarians, veterinary hospital staff, and veterinary students who can communicate effectively
with LEP Latino pet owners without a translator present, or the proportion of veterinary practices
that utilize Spanish-language client-educational materials.

Background: The term “limited English proficient”, or LEP, describes an individual who cannot
speak, read, write, or understand the English language at a level that permits him or her to interact
effectively with clinical or non-clinical staff in a healthcare setting (Roat, p. 4). The percentage of
individuals in the U.S. with LEP is currently estimated to be 8.7%. Approximately 25 million people
in the U.S. over the age of 5 years speak English less than “very well”, which is one measure of LEP
(U.S. Census Bureau, S1601, 12/13/2011). According to the Modern Language Association, based
on Census 2010 data, languages other than English are spoken by 1 in 5 people over 5 years old in
the U.S. (2010 American Community Survey, S-1601). Of those speaking languages other than
English, more than 62%, or 37 million individuals, speak Spanish. No other non-English language,
including Chinese, Tagalog, French, Vietnamese, German, or Korean, represents even 3% of the
non-English languages spoken in the U.S. In the U.S. Spanish is spoken by twenty times more
people than any other non-English language (see appendix). Latinos are the largest minority group
in 21 of the fifty U.S. states. As of 2012, the U.S. had the second largest Latino population in the
world, second only to Mexico (http://www.infoplease.com/spot/hhmncensus1.html).

This growing number of U.S. LEP Spanish-speakers includes pet owners who regularly visit
practicing veterinarians with their pet. It is estimated that as many as 39% of Latinos currently
own a pet (Pew Research Center 3/7/06). Yet, census data indicates that only 2% of our nation’s
82,000 veterinarians self-identify as Latino or Hispanic (source). In addition to these 1640
veterinarians who may or may not speak Spanish, there are other veterinarians, veterinary staff,
and veterinary students who may speak Spanish with some degree of proficiency. Several peer-
reviewed studies have been conducted comparing non-Latino to Latino pet owners with respect to
the strength of the human-animal bond. Results from a study by Schoenfeld-Tacher et al, 2010,
suggest that Latino pet owners are more likely to consider their dog or cat to be a “family member”
than non-Latino owners. Risley-Curtiss et al, 2006, examined the human-animal bond and ethnic
diversity. They found that Latino pet owners were less likely than non-Latino owners to have cats or birds, and 3.4 times more likely not to sterilize their pets, especially male dogs, than non-Latino owners. In a study exploring Latino pet-owning students' attitudes toward sterilization of their companion animals, Faver, 2009, found that south Texan, Latino pet-owning students were more likely to own dogs than cats. However, there have been no studies to date that examined the prevalence or nature of translation services utilized by veterinarians for LEP Spanish-speaking pet owners.

Overall Objective and Specific Aims:

The overall objective of this study is to assess the preparedness of the veterinary profession to provide high quality health care to LEP Spanish-speaking pet owners. To accomplish this goal, three surveys will be conducted including a (i) a Pet Owner survey to further our understanding of the opportunities for and barriers to veterinary health care for LEP Spanish-speaking pet owners; (ii) a Veterinary Practitioner survey to estimate the number of veterinary health care professionals who currently provide Spanish language access services to LEP pet owners, and (iii) a Veterinary Student survey to estimate the proportion of veterinary students who have the ability to communicate effectively in Spanish with LEP pet owners, without the use of an interpreter.

Results of the three surveys will generate baseline data on the prevalence of language barriers and Spanish language services provided by veterinarians and veterinary staff in small animal private practices. They will also allow us to test the hypotheses of whether or not LEP pet owners are more likely to visit a veterinarian with their dog or cat if a clinic staff member can communicate with the client in Spanish without another person translating. Results of questions 12 and 26 of the Pet Owner Survey will reveal what other factors, beside language, might be barriers to veterinary care for an LEP owner, including: cost, transportation, pet's behavior, owner's time and schedule, mistrust of the veterinary medical system, and the belief that a healthy dog or cat does not need to visit the veterinarian. Finally, these results will produce an inventory of existing Spanish-language client-education veterinary resource materials and veterinary healthcare language resources for LEP Latino pet-owners and the veterinarians who serve this population.

Specific Aim 1: Compare the number and type of pets owned and frequency of veterinary visits between LEP and non-LEP Latino pet owners.

Objectives and hypothesis

Aim 1 Objectives:
(a) Survey Latino pet owners to estimate the proportion who are LEP.
(b) Characterize pets of LEP Latino pet owners in terms of number, species, breed and neuter status, and years owned compared with non-LEP Latino pet owners.
(c) Compare the source of dogs and cats for LEP and non-LEP pet owners.
(d) Compare the frequency of veterinary visits between LEP Latino and non-LEP Latino pet owners.
(e) Compare the frequency of veterinary visits of LEP Latino pet owners to veterinary hospitals where clinic staff members can communicate in Spanish without a translator versus
veterinary clinics where there are no staff members who can communicate in Spanish without a translator.

**Aim 1 Hypothesis 1:**
LEP Latino pet owners visit veterinary clinics and shelters less often than English-speaking Latino pet owners.

**Aim 1 Hypothesis 2:**
LEP Latino pet owners visit veterinary clinics and animal shelters where clinic staff member(s) can communicate in Spanish without a translator more often than they visit veterinary clinics and shelters where clinic staff member(s) cannot communicate in Spanish without a translator.

**Materials and methods**

**Data:** Random Digit Dial Telephone survey (see SSRS Excel Omnibus Information in appendix for details). Survey instrument: *Pet Owner Survey*, English and Spanish versions.

**Sample collection and examination:** Contract with Social Science Research Solutions (SSRS) to conduct telephone interviews with a randomized national sample of 384 Latino pet owners. The survey will be part of a weekly national survey of 1000 individuals, 100 of whom are expected to be Latino and 38 of whom are expected to be Latino pet owners. Professional interviewers will conduct the survey in either Spanish or English, according to the respondent’s preferred language. The survey will take 10 weeks to complete.

**Sample size calculation:** (Using Epi-Info® version 7.0-StatCalc-Sample Size and Power)

- Total Population = 50.5 million Latinos in the United States
- Population size = 19.2 million U.S. Latino pet owners
- Expected frequency = 50% (since frequency of response is actually unknown, I am using 50% to obtain the largest sample size possible)
- Confidence limits = precision = 5%
- Confidence level = 95% (a = 0.05)

Sample Size needed: N=384

**Data preparation:** SSRS will prepare a report at end of week 5 and at end of week 10 (end of September 2012). Data will be returned in format we request (SPSS, SPSS portable to be imported into STATA, ASCII, etc.)

**Budget:** As of this writing, we are almost at the end of the fifth week of data collection. We anticipate completing 384 Latino pet owner surveys in 10 weeks and will be within our budget of $20,000.

**Analysis:** Use multivariate logistic regression to analyze factors associated with visits to veterinary clinic versus no visits to veterinary clinic over the past 12 month period. Compare the frequency of visits (i) between LEP and non-LEP Latino pet owners, and (ii) to clinics which do and do not have Spanish-speaking staff members.

**Specific Aim 2:** Compare the current level of proficiency in spoken Spanish among two groups of U.S. small animal veterinarians. The first group will include veterinarians who practice in states

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1 Previous SSRS survey conducted for private advertising firm found that 38% of Hispanics are pet owners. Cost estimates are based on projection that we would need to ask pet owning questions to 2361 Latinos to get 1000 Latino pet owners.
with > 2 million Latinos that have experienced growth of <60% from 2000-2010 (CA, TX, FL, NY, IL). The second group will include veterinarians who practice in states with moderate-sized Latino populations (<300,000), that has experienced growth of their LEP Spanish-speaking population >110% from 2000-2010 (NV, NC, GA, AR, TN). The first group will be referred to as Latino Established practices; the second group will be referred to as Latino Growing practices.

**Aim 2 Objectives:**

(a) Survey veterinarians in small animal practice to estimate the prevalence of veterinarians and veterinary staff members who speak Spanish well enough to communicate with LEP Latino clients without the help of a translator.

(b) Estimate the frequency with which veterinary practices utilize commercial telephone interpreter services and professional local interpreter services.

(c) Compare and contrast the number and percentage of LEP Spanish-speaking clients seen by veterinarians in Group A versus Group B veterinary practices.

(d) Compare how Group A versus Group B veterinarians currently advertise and market to LEP Spanish-speaking pet owners.

(e) Inventory available Spanish language tools and resources currently being used in veterinary practices, including product brochures, disease and surgery topic brochures, consent forms, take home instructions, professional local interpreter services, ad hoc interpreting by bilingual staff members, etc.

(f) Estimate the interest in an elective course in “Spanish Speaking for Veterinary Healthcare Providers” by estimating the prevalence of non-Spanish-speaking U.S. veterinarians who respond that they would take Spanish language classes if given the opportunity.

**Aim 2 Hypothesis 1:** Significantly more Group A Latino Established practices employ staff members who can speak Spanish well enough to communicate without a translator than do Group B Latino Growing practices.

**Aim 2 Hypothesis 1:** A significantly greater percentage of clients seen by Group A Latino Established practices are LEP Spanish-speaking clients, compared with the clients seen by Group B Latino Growing practices.

**Materials and methods (see Appendix for survey and supporting documentation)**

**Data:** Telephone survey. Survey instrument: Qualtrics ® **Veterinary Practitioner Survey.**

**Sample collection and examination:** Conduct telephone survey veterinarians randomized geographically according to the Latino population density. The two groups to be compared include: Group A Latino Established Practitioners (from CA, TX, FL, NY and IL, where 2010 Latino population > 2 million and 2000-2010 Latino population growth < 60%) and Group B Latino Growing Practitioners (from NV, NC, GA, AR, and TN, where 2010 Latino population < 300,000 and 2000-2010 LEP Latino population growth > 110%). Use 2010 Census data to obtain these Latino population densities. Generate practitioner sample pool from current commercial VetListDownload.com database, which is comprised of work phone numbers...
harvested from the White and Yellow Pages. Use random number generator to obtain randomized sample of these ~ 13,000 veterinarians divided into groups A and B, proportional to the number of veterinarians per state. (See appendix for count detail). Ask to speak with or schedule appointment to speak with a full-time veterinarian from the practice for an 8-9 minute survey. Call back if needed. Obtain survey response from 1 veterinarian per practice to avoid clustering within practices. Utilize two trained CITI-certified interviewers paid $12.50/hour. Completed surveys goal: N = 372 (per group) (See appendix for detailed breakdown of sample pool needed.)

**Data preparation:** Use Qualtrics ® to obtain daily reports of practitioner responses.

**Budget:** Estimate 3 successfully completed surveys per hour. Will need 248 hours to obtain results.

**Analysis:** Use Chi-square test to compare portion of Spanish-speaking capable veterinary staff and lay staff in Latino Established versus Latino Growing practices. Use multivariate logistic regression to analyze responses from questions 8, 9, 18, 19, 20, 21, 22 and 23. Compare mean scores on interest in communicating with Spanish-speaking clients between Practitioners in groups A and B. Specifically, analyze responses from questions 24 through 35 to see if there are significant between-group differences.

**Sample size calculation:** (Using Epi-Info® version 7.0-StatCalc-Sample Size and Power)
Total Population = 82,686 AVMA-member U.S. veterinarians as of December 31, 2011

- **Population size** = 13,245 non-duplicate veterinarians or veterinary practices listed in the White and Yellow pages with SIC code = “Animal Hospital” or “Veterinarian”.
- **Expected frequency** = 50% (since frequency of response is actually unknown, I am using 50% to obtain the largest sample size possible)
- **Confidence limits** = precision = 5%
- **Confidence level** = 95% (a = 0.05)

**Sample Size** needed: N=373 (per group)

**Specific Aim 3:** Identify the current level of Spanish-speaking ability of third-year veterinary students, the state in which they intend to practice (1st choice), and evaluate if students are meeting the core competencies for Communication and Diversity/Multicultural Awareness recommended in the 2011 NAVMEC Report.

**Objectives and hypothesis**

**Aim 3 Objectives:** Survey 3rd-year veterinary students at the 28 U.S. veterinary schools and colleges to:

a) Estimate the prevalence of students who speak Spanish well enough to communicate with LEP Spanish-speaking clients without the help of a translator.

b) Estimate the prevalence of non-Spanish-speaking veterinary students who would take an elective “Spanish Speaking for Veterinary Healthcare Providers” course if offered at their veterinary school or college and/or participate in an on-line Spanish language course or an in-person Spanish language immersion experience (intensive language learning) if given the opportunity.

c) Estimate the percentage of 3rd-year veterinary students who intend to practice in Latino Established and Latino Growing states upon graduation.
d) Evaluate whether or not students are meeting the core competencies recommended in the 2011 NAVMEC report for Communication and Diversity/Multicultural Awareness.

**Aim 3 Hypothesis:** A significantly greater number of veterinary students who intend to practice in Latino Established states can communicate in Spanish without a translator, compared to veterinary students who intend to practice in Latino Growing states.

**Materials and methods**

**Data:** On-line survey. Survey instrument: Qualtrics ® *Veterinary Student Survey.*

**Sample collection process:**
1. Purdue IRB approval of Veterinary Student Pilot survey to evaluate retest reliability (✓)
2. Launch pilot survey to 3rd-year Purdue veterinary students (✓)
3. Launch retest of pilot survey to 3rd-year Purdue veterinary students (✓)
4. AAVMC Survey Committee approval of Veterinary Student Survey (allow 4 weeks)
5. Purdue IRB approval of finalized Veterinary Student Survey
6. Cover letter and survey sent to Lisa Greenhill, AAVMC Associate Executive Director for Institutional Research and Diversity
7. Cover letter and survey distributed electronically to Associate Dean of Academic Affairs of all 28 U.S. veterinary schools and colleges
8. E-mail correspondence with VOICE leaders to promote survey to fellow veterinary students
9. Qualtrics on-line survey open **4 weeks**
10. Respondents can choose to be entered to win a $25 iTunes gift card; 60 gift cards will be distributed.

**Sample size calculation:** (Using Epi-Info® version 7.0-StatCalc-Sample Size and Power)

- Total Population = 10,000 veterinary students in the United States
- Population size = 2500 veterinary students in Year Three of their veterinary medical curriculum
  - **Expected frequency** = 50% (since frequency of response is actually unknown, I am using 50% to obtain the largest sample size possible)
  - **Confidence limits** = precision = 5%
  - Confidence level = 95% (a = 0.05)
  - **Sample Size needed:** N = 333

**Data preparation:** Use Qualtrics ® to obtain weekly reports of veterinary student responses.

**Budget:** Incentive of $25 iTunes gift card for survey participation x 56 gift cards (2 per school) = $1400; postage to mail out gift cards = $100; total budget = **$1500**.

**Analysis:** Use Chi-square test to compare portion of Spanish-speaking versus non-Spanish-speaking veterinary students intending to practice in Latino Established and Latino Growing practices.

**Expected Results and Significance of Study Objectives:**
Results of these three national surveys will likely demonstrate that the proportion of pet-owning LEP Latinos is significantly greater than the proportion of Spanish-speaking veterinary
professionals and students who are available to work with these pet owners, leaving a language gap in the bridge between LEP Spanish-speaking pet owners and veterinary health care providers.

**Significance of Aim 1:**
**Assess demand for and delivery of veterinary services to LEP Latino pet owners.**
The veterinary and animal shelter communities will benefit from knowing what the demand is for services from LEP Spanish-speaking pet owners, in order to be better prepared to communicate with them. Potential results of improved advertising to and communication with LEP Spanish-speaking pet owners include increased veterinary visits, improved pet health care, and increased use of shelters as a source of pets. While the need for Spanish-speaking veterinarians and staff may not be identical in every state and county in the U.S., an awareness of the prevalence of LEP Latino pet-owners is important for Spanish-speaking staff planning and preparedness. The human medical literature has abundant examples of healthcare providers caught unprepared for the influx of LEP Latino patients; veterinarians and shelters have an opportunity now to plan for a growth in LEP pet owners in the future who would benefit from their advice and services.

**Significance of Aim 2:**
**Compare the current level of Spanish language ability among two groups of U.S. small animal veterinarians: Latino Established and Latino Growing.** As the number of LEP Spanish-speaking pet owner increases in the Latino Growing states, so does the importance of Spanish language ability for the U.S. veterinary private-practice community. Effective communication is vital:
- Veterinarians need to understand their patient’s history and symptoms as conveyed by the client in order to facilitate accurate diagnosis and treatment.
- Clients need to understand the veterinary team’s diagnosis and treatment recommendations in order to comply with these recommendations to help their pet get and stay well.
- Veterinarians practicing in communities with rapidly growing Latino populations will benefit from hiring bilingual staff, technicians and doctors. In a competitive market for veterinary services, an investment in bilingual staff will be returned in the form of an increased market share of LEP Spanish-speaking pet owning clients.

**Significance of Aim 3:**
**Identify the current level of Spanish-speaking ability of third-year veterinary students, and evaluate how well students are meeting the core competencies for Communication and Diversity/Multicultural Awareness recommended in the 2011 NAVMEC Report.**
As the number of veterinary students intending to practice in Latino Growing states increases, we expect results of these studies to demonstrate the need for a Spanish language elective for veterinary students. We need to help students meet the goals for Professional Competency in the areas of communication and diversity/multicultural awareness, especially as these goals pertain to working with non-English-speaking pet owners.

These goals, set forth in 2011 by North American Veterinary Medical Education Consortium, include:

**Communication**
Veterinarians sustain effective, professional relationships and skillful, sensitive, appropriate communications with clients, colleagues, other healthcare professionals, and the public. They communicate in various ways and in a variety of settings with the purpose of achieving the best outcomes/results. They are able to establish and maintain effective communication in the face of cultural differences and challenging situations. (NAVMEC, p. 57)

Diversity/Multicultural Awareness

Diversity enhances the quality of education and results in more effective and culturally competent veterinarians who are better prepared to serve an increasingly heterogeneous population. Veterinarians demonstrate an understanding of the manner in which culture and belief systems impact delivery of veterinary medical care while recognizing and appropriately addressing biases in themselves, in others, and in the process of veterinary medical care delivery. Diversity refers to differences among people with respect to race, gender, age, ethnicity, sexual orientation, mental/physical ability, religion, job level, personality traits, education, health, stature, culture, language, and other human differences. (NAVMEC, p.60)

Appendices:

Surveys:
I. Pet Owner Survey (English and Spanish versions)
II. Veterinary Practitioner Survey
III. Veterinary Student Survey

SSRS:
Social Science Research Solutions EXCEL: National Telephone Omnibus Study
(Available upon request.)
APPENDIX 3
Sheryl Walker – Maddie’s PhD Student in Canine Behavior
Summary of Progress July 1 2011-June 30 2012

Coursework – Summer Semester 2011
• Research (3 credits) – 4.0 GPA

Coursework – Fall Semester 2011
• Research (6 credits) – Satisfactory
• Seminar in Epidemiology (1 credit) – 3.7 GPA
• Statistics – Design of Experiments (3 credits) – 2.0 GPA
• Translational Research (1 credit) – 4.0 GPA
• Shelter Animal Medicine (1 credit) – 4.0 GPA

Coursework – Spring Semester 2012
• Advanced Presentational Speaking (3 credits) – 4.0 GPA
• Seminar in Epidemiology (1 credit) – 3.3 GPA
• Oral Exam Preparation (1 credit) – 4.0 GPA
• Research (7 credits) – Satisfactory
• Grants and Grantsmanship (1 credit) – 4.0 GPA
• Small Animal Behavioral Therapy – Audit

Coursework – Summer Semester 2012
• Research (6 credits) – Satisfactory

Research – Summer Semester 2011 through Summer Semester 2012
• Dr. Bennett’s (animal behavior resident) research project
  o Co-authored Dr. Bennett’s manuscript for submission to Applied Animal Behavior Science, resulting from temperament and aggression research project

Research – Summer Semester 2012
• Comparison of SAFERTM aggression assessment results in shelter dogs at intake and after a 3-day acclimation period
  o Performed SAFERTM assessments on shelter dogs at Almost Home Humane Society and Clinton County Humane Society
  o A total of 49 dogs were assessed at intake
  o Currently following up with adopters and having them complete the C-BARQ questionnaire

Conferences
  o Indianapolis, Indiana
• Purdue University Veterinary Medicine Fall Conference – September 20th through 23rd, 2011
  o West Lafayette, Indiana
• Indiana Veterinary Medicine Association (IVMA) Conference (Animal Behavior Day) – February 10th, 2012
Indianapolis, Indiana

- Animal Behavior Management Alliance (ABMA) Conference (Self-funded) – May 6th through 11th, 2012
  - San Francisco, California

Speaking Engagement

- Presented at the Indiana State Fair on August 16th, 2011 - *How to Clicker Train Your Dog*
  - Live presentation with an assistant and a Beagle/Basset Hound mix
  - Crowd of approximately 80 people and great feedback from attendees

Miscellaneous Projects – Summer Semester 2011 through Summer Semester 2012

- SAVMA Behavior Wet Lab – March 15th, 2012
  - Assisted Dr. Sara Bennett with teaching veterinary students basics about dog handling, clicker training, and how to fit a Gentle Leader on a dog
- Literature Review
  - Currently reviewing literature, both research articles and textbooks, regarding how breed influences canine behavior
  - Manuscript for journal submission in preparation
- Assisted with behavioral consultations in the Behavior Clinic
- Attended relevant ASPCA Pro webinars, Maddie’s Program webinars, and Shelter Medicine Rounds (UC Davis)
APPENDIX 4  
Dr. Jamieson Nichols – Maddie’s PhD Student in Shelter Population Medicine Education  
Summary of progress January 1, 2012-June 30, 2012

Coursework - completed Spring semester 2012  
- Clinical Biostatistics  
- Statistical Methods for Biology  
- Seminar in Epidemiology  
- Research (6 credits)

Coursework – completed Summer semester 2012  
- Research (6 credits)

Research Spring 2012 through Summer semester 2012  
Specimen collection for FIV project January 2012  
Specimen collection for FIV project May 2012  
- Performed physical examinations for cats enrolled in the study and assisted in collection and processing of blood and urine samples for submission to the laboratory.  
- Preparation of data spreadsheets of physical examination results and laboratory results to be compiled into health reports for each pet owner.

Miscellaneous projects Spring semester through Summer semester 2012  
- Literature review and collaboration for a manuscript submission - Diagnostic utility of CD4\%:CD8^{low}\% T-lymphocyte ratio to differentiate feline immunodeficiency virus (FIV)-infected from FIV-vaccinated cats.  
- PAWS Chicago Rescue and Recovery Center -  
  - Performed physical examinations on new intake patients as well as hospitalized patients and outlined medical plans for ill animals within the shelter while overseeing herd health of the shelter population  
  - Performed canine and feline spay and neuter surgeries in the Lurie Spay Neuter Clinic.
APPENDIX 5
Dr. Sara Bennett - Purdue Maddie’s Shelter Medicine Program Resident in Animal Behavior.
Summary of Progress July 1 2011-June 30 2012

Cases
- New cases: 106 (Dr. Ogata began to see all new cases starting 5/24/12); Follow up cases - 44
- Total cases for residency - 353 new, 167 follow up
- Behavior evaluations - 63 dogs from PAWS Chicago
- Case Report #2 completed and accepted Dec. 20, 2011
- Case Report #3 completed and accepted Jan. 19, 2012
- Application to sit for ACVB specialty exam accepted May 29, 2012

Research Project
- Poster Presentation to Phi Zeta - *Investigating Behavior Assessment Instruments to Predict Aggression in Dogs* - 4/16/12
- Statistical analysis of reliability and internal/construct validity of behavior assessment data in progress.
- Introduction and materials and methods of a second manuscript reporting inter-rater and inter-rater reliability from the same dataset has been commenced - planned submission for late 2012.

Presentations
- *Temperament Testing for Dogs in a Shelter Setting* Purdue Seminar course VCS 62000 - November 4, 2011
- *Behavior in Veterinary Medicine* - Purdue Pre-Vet Club Meeting December 6, 2011
- *Feline Behavior Problems: the top 3* - SAAFP Meeting February 20, 2012
- *Canine Body Language/ Signs of Shelter Stress/ Behavior Assessments* - PAWS Chicago 3/5/12-3/6/12 6.5 hrs lecture
- *Clicker Training* - PVHTSA Meeting April 19, 2012
- *Animal Domestication* - PVM 4-H Camp June 13, 2012
- *Feline Body Language* - PAWS Chicago June 20, 2012

Teaching Assignments
- VCS 80100 Behavior, Husbandry, and Diagnostic Techniques in Domestic Animals 1 (14 hours - lecture, lab Fall 2011)
- VCS 80400 Behavior of Domestic Animals (6 hours- lecture Fall 2011)
- ANCS 40400 Companion Animal Welfare (1 hour- lecture Fall 2011)
- VCS 89300 Shelter Animal Medicine - behavior assessments (1 hour- lecture Fall 2011)
- VCS 55100 Medicine and Surgery of Non-traditional Pets - Avian Behavior (1 hour-lecture March 7, 2011)
• SAVMA Symposium - Behavior lecture and Wetlab - 3 hours Mar. 15, 2012
• VCS 80300 Behavior, Husbandry and Diagnostic Techniques in Domestic Animals 3 (4 hours- clinical behavior project Spring 2012)

Courses/ Conferences Attended
• Attended AVSAB/AVMA 7/15/11-7/19/11
• Attended International Society for Applied Ethology Annual Conference 7/31/11-8/3/11
• Attended Shelter Behavior Medicine course 8/15/11-8/19/11 The Center for Shelter Dogs - Animal Rescue League of Boston, MA
• Purdue University Fall Conference September 9/20/11- 9/23/11
• Maddie’s IVMA Animal Sheltering Symposium - Sunday October 16, 2011 Indianapolis, IN
• Equine Behavior Course 3/22/12-3/23/12 New Bolton Center, University of Pennsylvania School of Veterinary Medicine
• Exotic Behavior Course for Behavior Residents - May 18-21, 2012 Dallas, TX

Courses Completed
VCS 89300 Shelter Medicine Fall 2011- Grade of A

Other Activities
• Trained staff from PAWS Chicago in performing SAFER behavior assessment for shelter dogs at Chicago Animal Care and Control April 10, 2012.
• Creation of *Maddie’s Center of Excellence for Shelter Cats* preproposal with Dr. Annette Litster, Rochelle Michalek and Amber Freiwald.
• Advisory meeting with Chicago Animal Care and Control Executive Staff, Executive Director of PAWS Chicago, Dr. Annette Litster, and Dr. Niwako Ogata regarding daily protocols, handling and welfare.
Appendix 6 – Grant Finances Summary (2011-2012)
removed

Appendix 7 – Animal Statistics Table – PAWS Chicago 2011.
This information was not available at the time of report submission, but will be sent directly to the Maddie’s Fund from PAWS Chicago when it becomes available.

Appendix 8 – Animal Statistics Table – Humane Society of Indianapolis 2011.
Please see next 2 pages.
### Animal Statistics Table

<table>
<thead>
<tr>
<th>NAME OF ORGANIZATION: Indianapolis Humane Society</th>
<th>Dog</th>
<th>Cat</th>
<th>Total</th>
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<td>DATE OF REPORT: (January 2011 - December 31, 2011)</td>
<td></td>
<td></td>
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<tr>
<td><strong>A</strong> BEGINNING SHELTER COUNT (1.1.2011)</td>
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<td>209</td>
<td>359</td>
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<td><strong>B</strong> Intra-Community Intake (Live Dogs &amp; Cats Only) From the Public</td>
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<td></td>
<td></td>
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<tr>
<td>Healthy</td>
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<td>718</td>
<td>1396</td>
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<td>Treatable – Rehabilitatable</td>
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<td>372</td>
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<tr>
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<td>55</td>
<td>17</td>
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<tr>
<td>Unhealthy &amp; Unreclaimable</td>
<td>58</td>
<td>14</td>
<td>72</td>
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<tr>
<td><strong>B</strong> Subtotal Intra-Community Intake from the Public</td>
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<td>850</td>
<td>1987</td>
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<tr>
<td><strong>C</strong> Intra-Community Intake from Orgs within Community/Coalition</td>
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<td></td>
</tr>
<tr>
<td>Healthy</td>
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<td>315</td>
<td>630</td>
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<tr>
<td>Treatable – Rehabilitatable</td>
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<td>20</td>
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<td>34</td>
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<td><strong>D</strong> Intra-City Intake from Orgs outside Community/Coalition</td>
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<td>0</td>
</tr>
<tr>
<td>Unhealthy &amp; Unreclaimable</td>
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<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>D</strong> Subtotal Intra-City Intake from Orgs outside Community/Coalition</td>
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<td>0</td>
</tr>
<tr>
<td><strong>E</strong> Intra-City Intake from Owners/Guardians Requesting Euthanasia</td>
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</tr>
<tr>
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<td><strong>E</strong> Subtotal Intra-City Intake from Owners/Guardians Requesting Euthanasia</td>
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<td>169</td>
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<tr>
<td><strong>F</strong> Total Intake (A + B + C + D + E)</td>
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<td>1569</td>
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<tr>
<td><strong>G</strong> Outgoing Transfers to Orgs within Community/Coalition</td>
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<td></td>
</tr>
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<td>Healthy</td>
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<td>100</td>
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<tr>
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<tr>
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<td>8</td>
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<tr>
<td>Unhealthy &amp; Unreclaimable</td>
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<td>0</td>
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<td><strong>G</strong> Total Outgoing Transfers to Orgs within Community/Coalition</td>
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<td>111</td>
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<td><strong>H</strong> Total Intake (A + B + C + D + E)</td>
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<td>2982</td>
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<td><strong>H</strong> Total Outgoing Transfers to Orgs within Community/Coalition (Unhealthy &amp; Unreclaimable Only)</td>
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<td>104</td>
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<tr>
<td><strong>H</strong> Adjusted Total Intake (H – G)</td>
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<td>1159</td>
<td>2721</td>
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<tr>
<td><strong>I</strong> Total ADOPTIONS</td>
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<td>1065</td>
<td>2341</td>
</tr>
<tr>
<td><strong>J</strong> Total OUTGOING TRANSFERS to Orgs within Community/Coalition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Healthy</td>
<td>10</td>
<td>5</td>
<td>15</td>
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<td>4</td>
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<tr>
<td>Treatable – Manageable</td>
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<tr>
<td>Unhealthy &amp; Unreclaimable</td>
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<td><strong>J</strong> Total OUTGOING TRANSFERS to Orgs within Community/Coalition</td>
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<td><strong>K</strong> Total OUTGOING TRANSFERS to Orgs outside Community/Coalition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Healthy</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Treatable – Rehabilitatable</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Treatable – Manageable</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Unhealthy &amp; Unreclaimable</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>K</strong> Total OUTGOING TRANSFERS to Orgs outside Community/Coalition</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>L</strong>RETURN TO OWNER/GUARDIAN</td>
<td>86</td>
<td>11</td>
<td>97</td>
</tr>
</tbody>
</table>
### DOGS & CATS EUTHANIZED

<table>
<thead>
<tr>
<th>Category</th>
<th>M</th>
<th>N</th>
<th>O</th>
<th>P</th>
<th>G</th>
<th>R</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthy – Includes Owner/ Guardian Requested Euthanasia</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Treatable - Reliaitable - Includes Owner/ Guardian Requested Euthanasia</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Treatable - Manageable - Includes Owner/ Guardian Requested Euthanasia</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total Euthanasia (M + N + O + P)</td>
<td>534</td>
<td>305</td>
<td>839</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Owner/ Guardian Requested Euthanasia (Unhealthy &amp; Unmanageable Only)</td>
<td>97</td>
<td>184</td>
<td>281</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted Total Euthanasia (G minus R)</td>
<td>347</td>
<td>201</td>
<td>548</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal Outcomes (M + N + O + P) – Includes Owner/Guardian Requested Euthanasia (Unhealthy &amp; Unmanageable Only)</td>
<td>1764</td>
<td>1736</td>
<td>3494</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Died or Lost in Shelter/Care</td>
<td>3</td>
<td>5</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Outcomes (T + U) – Includes Owner/Guardian Requested Euthanasia (Unhealthy &amp; Unmanageable Only)</td>
<td>1764</td>
<td>1736</td>
<td>3494</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ending Shelter Count (12.31.2011)</td>
<td>141</td>
<td>128</td>
<td>269</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In a perfect world, the Ending Count is equal to the Beginning Count (A) plus Total intake (T) minus all Outcomes (T-V). 

If your reported Ending Count does not match these numbers, please go back through your data and be sure you didn’t miss something (i.e., animals in foster, adoptions, transfers, etc.). If all animals have been accounted for and the reported Ending Count is different, please indicate in the comment section.

**COMMENTS:** Ending Shelter Count is off by 4 dogs and 3 cats

I agree that in completing this form, we have used the Maddie’s Fund definitions of “Healthy,” “Treatable – Manageable,” “Treatable - Reliaitable,” and “Unhealthy & Unmanageable” as set forth in the attached document titled, “Maddie’s Fund® Categorizations/Definitions of Shelter Animals.”

Signature: __________________________ Date: __________________________

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