

# Maddie's® Shelter Medicine Program at the University of Florida



## Proposal for Program Years 4-6

A proposal for continued pursuit of excellence in Shelter Medicine training, research, and service to enhance the health and welfare of homeless animals.

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## PROPOSAL FOR PROGRAM YEARS 4-6

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## LETTER FROM THE PROGRAM DIRECTOR

*Julie Levy, DVM, PhD, DACVIM*

The first three years of Maddie's Shelter Medicine Program have been an enriching and gratifying whirlwind of activity. We hit the ground running in the summer of 2008 and since the very beginning have dedicated ourselves to collaboration, discovery, and program development, all with the goal of enhancing the health and welfare of homeless animals.

We have worked directly with and in animal shelters, providing on-site consultations for dozens of agencies in the Southeast and beyond. No two shelters are exactly alike, and in our consultations we find ourselves responding to deadly disease outbreaks, fine-tuning best practices, or performing top-to-bottom comprehensive assessments.

These shelter visits often have an immediate impact for our shelter partners and the animals they serve, resulting in reduced disease, improved quality of life, and increased live releases.

Despite these immediate gains in lifesaving capacity and animal welfare, we find ourselves faced with questions we can't answer and large gaps in fundamental knowledge regarding the needs of sheltered populations. Often the source of disease is unclear, diagnostic tests are inadequate, or the optimal treatment is unknown. In these situations, our in-shelter research programs are designed to solve the problems that prevent shelters from reaching their life-saving potential. Not only do our studies supply useful information for the entire field of Shelter Medicine, but the diagnosis and treatment of individual animals in shelter studies provides immediate relief of suffering and limits the spread of diseases to other animals. Recognizing that discovery is only as good as the ability to translate new knowledge into practical solutions, our annual Shelter Medicine conferences and research publications serve to disseminate our findings to the veterinarians who will put them to use.

As the model for animal sheltering undergoes an international shift from reactive animal control to proactive shelter- and community-wide animal welfare, shelters increasingly tailor programs and interventions to the specific needs of individual animals to achieve higher save rates. Attempts to make this transition have revealed that there remains a shortage of veterinarians with the skills to minister to the unique needs of sheltered animals as well as a lack of appreciation by shelter managers for the central role veterinarians must play if shelters are to meet their life-saving goals. Addressing the need for specially-trained professionals, our residency training program is preparing veterinarians to be leaders in their field, with expertise in medicine, surgery, welfare, population management, infection control, and forensics. These experts will provide the foundation for our emerging specialty for years to come.

*"...we believe the greatest need is to increase the number of mission-driven veterinarians skilled in the art and science of Shelter Medicine..."*

For veterinarians-in-training, we adopted an ambitious agenda of new coursework development that starts in their first semester and continues through all four years of the curriculum. Virtually every student at the UF College of Veterinary Medicine now gains real-life experiences in animal shelters during Shelter Medicine clerkships and externships. The pinnacle of our student training is the Certificate in Shelter Medicine, which

recognizes a total of 15 credits of elective coursework and clinic training specifically devoted to the care of sheltered animals. With this exposure, our students graduate with a strong sense of altruism and an understanding of how veterinarians are uniquely positioned to use their skills to enhance the well-being of sheltered animals.

In surveying the state of Shelter Medicine, the strengths of other Shelter Medicine programs, and where the most critical gaps remain, we believe the greatest need is to increase the number of mission-driven veterinarians skilled in the art and science of Shelter Medicine. We propose to achieve this via an expansion of Maddie's® Shelter Medicine Program to develop an online distance learning curriculum in Shelter Medicine

*“This distance education program represents an opportunity to leverage our program’s breadth and depth in a way that will help raise the prestige and impact of Shelter Medicine around the globe.”*

available to students at other veterinary schools and to veterinarians around the world. Distance learning is an increasingly effective means of delivering education beyond the confines of a single institution, allowing those in remote locations and working professionals the access and flexibility they seek in training opportunities. Our planned program of study leading to the Certificate in Shelter Medicine will recognize participants who have completed an intensive training program in this field, providing a valuable credential for employment in animal sheltering. This distance education program represents an opportunity to leverage our program’s breadth and depth in a way that will help raise the prestige and impact of Shelter Medicine around the globe.

Three years seems barely the blink of an eye in the world of Shelter Medicine. We at Maddie's® Shelter Medicine Program have been keen to make the most of every moment, to collaborate with others in

the field and build a robust program at the University of Florida that trains veterinary students and veterinarians while helping address the current and future needs of our sheltering partners. As we move forward, we look to technology as a tool to expand our capacity and scale up our impact. The future is bright for Shelter Medicine, and we are grateful to Maddie's Fund® for having confidence in our ability to be a part of it.

Sincerely,



Julie Levy, DVM, PhD, DACVIM  
Director, Maddie's® Shelter Medicine Program

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## EXECUTIVE SUMMARY

Maddie's® Shelter Medicine Program at the University of Florida has swiftly become one of the most comprehensive Shelter Medicine programs available. With an eye to collaboration and discovery, we have approached the advancement of the lifesaving goals of sheltering programs through four core strategies that we propose to continue and build through program years four through six.

To help build a corps of veterinarians skilled in the art and science of Shelter Medicine, we will educate veterinary students at the University of Florida. We propose to cultivate the next generation of shelter veterinarians through the teaching of Shelter Medicine topics in the required veterinary student curriculum and the continuation and expansion of elective offerings. We will offer the Certificate in Shelter Medicine to students at UF, leading them through an intensive training program and certifying their achievement upon graduation.

The future of Shelter Medicine rests in no small part on the shoulders of our advanced trainees, residents in Shelter Medicine who spend three years in a rigorous course of study to become experts in the field. We will admit one new resident annually, guiding each through didactic, clinical, and research training. Residents will benefit from mentored shelter-based training in consultation and outbreak intervention and prevention. They will also contribute to the teaching efforts of the program in the classroom and at conferences and seminars. We propose the addition of a Shelter Medicine Intern position, taking advantage of our training infrastructure to further build the corps of highly trained professionals working in shelters. We will continue to build collaborative relationships with other Shelter Medicine training programs.

Through our shelter health assessment and consultation service, we propose a continuation of our partnerships with sheltering and welfare agencies to identify challenges and solutions in sheltering systems. Faculty, residents, interns, veterinary students, and program staff will consult and advise shelters on all aspects of shelter operations affecting animal health and welfare. Shelters will continue to be able to reach out to our program for assistance and expertise when faced with disease outbreaks or large-scale events and we will work with them to formulate lifesaving solutions and prevent future recurrences.

Our research program will continue under the direction of our program faculty, seasoned investigators who will oversee resident and student projects from inception to publication. With a focus on solving existing and emerging threats to successful sheltering programs, our research projects will build the body of Shelter Medicine knowledge and empower shelter veterinarians and managers to make the best decisions for the animals in their care.



Finally, we propose an expansion of our program to address the paucity of structured training opportunities in Shelter Medicine for veterinary students and veterinarians both in the US and internationally. We propose the creation of a distance education Certificate in Shelter Medicine which will build on the current Certificate program, leveraging today's technologies to train tomorrow's shelter veterinarians regardless of their geographic location.

We appreciate the support Maddie's Fund® has shown our program and our field, and we look forward to the opportunity to build on the success Maddie's Fund® has made possible to date.

## THE CURRENT ENVIRONMENT: ANIMAL SHELTERING AND SHELTER MEDICINE

Over the past 10 years, Shelter Medicine has emerged as a recognized and respected discipline in veterinary medicine. Many pivotal changes in the philosophy of animal sheltering and the role of veterinarians in shelters have contributed to the growth of Shelter Medicine. Increasingly, shelters are embracing the philosophy that the health and welfare of cats and dogs in their care should be protected and nurtured, developing a humane ethic that treats animals as individuals while raising the bar to increase overall animal placement and decrease euthanasia. Shelters are eagerly seeking resources and educational opportunities to guide the quest for more progressive and proactive care to fulfill their mission of saving more lives. The role of veterinarians in animal sheltering has morphed from a primary focus on spay/neuter surgeries to a more comprehensive responsibility for the health and welfare needs of shelter animals. Shelter veterinarians are now regarded as a key resource for ensuring that healthy, happy animals are placed into homes.

Based on increased recognition of the importance of Shelter Medicine to animal welfare and the drive of their students, many veterinary schools are seeking to incorporate Shelter Medicine topics in their student curriculum. Of the 28 veterinary schools in the U.S., 18 offer some degree of Shelter Medicine content to students, including didactic courses and mentored externships for hands-on experience in shelters. Eight schools have advanced Shelter Medicine programs for training specialists (residents, interns, and postdoctoral fellows) to serve as expert resources to shelters and to expand the educational opportunities for more students and veterinarians in Shelter Medicine. Two task forces have been formed to support these advanced training programs - the Shelter Medicine Residency Standards Task Force for development of minimum standards for training of Shelter Medicine specialists, and the Organizing Committee for the Board Specialty in Shelter Medicine.

*"When I decided I wanted to be a veterinarian, I did so because I wanted to be a shelter veterinarian. I couldn't have started veterinary school at a more appropriate time. The Shelter Medicine program at UF offers an internship, a residency and now has options for a Shelter Medicine certificate, which credentials an achievement in the field I am so passionate about."*

*Lauren Unger  
DVM Candidate  
Class of 2012*

In addition to establishment of training programs for veterinary students and Shelter Medicine specialists, other landmark events have contributed to the reputation of Shelter Medicine as an integral component of successful sheltering and animal welfare. Two Shelter Medicine textbooks have now been published, instantly



*Shelter Medicine is increasingly seen as a fundamental element of successful animal sheltering.*

becoming valuable resources for students and veterinarians. In addition, the Association of Shelter Veterinarians (ASV) has grown from a small grassroots network to a global organization of over 750 shelter veterinarians and student chapters in 22 veterinary schools. This professional organization sponsors several different venues for advancement of Shelter Medicine and education of shelter veterinarians, including the annual international conference on Shelter Medicine at the North American Veterinary Conference. In 2010, the ASV published the Guidelines for Standards of Care in Animal Shelters, the first ever document developed by Shelter Medicine experts to provide scientific and humane guidelines for care of shelter animals.

Collectively, veterinary school-based training programs, Shelter Medicine textbooks, the ASV, and greater availability of educational conferences have stimulated and sustained the growth of Shelter Medicine and the entry of trained professionals into the field. With the expertise of their veterinary allies, shelters are saving more lives, and our field will continue to be instrumental in moving toward a no-kill nation.

Yet despite the growth and advances in Shelter Medicine, there are critical unmet needs hindering progression toward the goal of saving all healthy and treatable shelter dogs and cats. There is an unmet need for Shelter Medicine educational opportunities to expand to reach students even in veterinary schools where no Shelter Medicine curriculum is currently available. The repercussions of this gap reverberate into the field, where most animal shelters do not have veterinarians to oversee wellness programs and/or comprehensive treatment programs, and there are an insufficient number of veterinarians with the skills and interest to fill existing needs. In addition to the inadequate number of shelter practitioners, there is a critical shortage of trained Shelter Medicine specialists to educate future generations of shelter veterinarians and to develop new knowledge for advancing the field.

Bearing in mind these considerations about the state of the field, in fall of 2010 our faculty, residents, and staff engaged in a strategic planning retreat. Facilitated by an expert from UF's Office of Training and Organizational Development, we explored the strengths of our program, the opportunities and needs in Shelter Medicine, and our goals and vision going forward through years 4-6. It is that discussion which guides the current proposal.

The mission of Maddie's® Shelter Medicine Program at the University of Florida is to enhance the health and welfare of homeless animals through education, innovation, and advancement of the life-saving goals of sheltering programs. To fulfill this mission, we employ four core strategies: 1) Training of veterinary students in the problems of homeless animals, animal sheltering systems, Shelter Medicine, and opportunities for careers in the field; 2) training of Shelter Medicine professionals to fill the current shortage of skilled providers; 3) provision of shelter assessment and consultative services; and, 4) development of new knowledge to solve existing and emerging threats to successful sheltering programs.



*Maddie's® Shelter Medicine team  
at the University of Florida*

## CORE STRATEGIES

Maddie's® Shelter Medicine Program is a comprehensive program, approaching the enhancement of the health and welfare of homeless animals through four core strategies: veterinary student education, advanced practitioner training, shelter assessment and consultation services, and research to develop and disseminate new knowledge.

### 1 | Veterinary Student Education

#### Training of veterinary students in the problems of homeless animals, animal sheltering systems, Shelter Medicine, and opportunities for careers in the field

Veterinary students at the University of Florida are passionate, altruistic, and in search of career opportunities that are professionally fulfilling. Providing extensive training in Shelter Medicine to students at an impressionable stage of their career development serves several purposes. First, veterinarians with strong skills in companion animal group health and sterilization needed by shelters are in critically short supply. Second, students who are exposed to the animal sheltering system in this country and witness the problem of animal homelessness first-hand will graduate with a clear comprehension of the urgency of the crisis. They will understand how veterinary professionals are uniquely positioned to provide key leadership to benefit shelters and the animals they serve. Not only will this help build a corps of mission-driven clinicians to staff shelters, but even those who do not choose a career in Shelter Medicine are likely to be supportive of those who do or to help in smaller ways through their own private practices.

Much of the past three years has been spent in developing an ambitious training program in Shelter Medicine for students at the University of Florida. We have developed a well-rounded Shelter Medicine training program that reaches all students in their core (required) course work and provides advanced elective opportunities for those with a special interest in Shelter Medicine. This curriculum touches students in every year of their training, providing an opportunity to capture their interest early and reinforcing it at each step of their journey from student to veterinary professional. Didactic courses in Shelter Medicine are also available to graduate students.



*Veterinary students in a Special Projects elective: Challenges and Controversies Facing Bully Breeds in Animal Shelters*

#### Required Core Curriculum

VEM 5001	Career Opportunities in Veterinary Medicine ( <i>Freshmen</i> ) My Career as a Shelter Veterinarian
VEM 5041	Contemporary Topics in Animal Welfare and Ethics ( <i>Freshmen</i> ) Community Cats: Problems and Solutions
VEM 5325	Small Animal Medicine ( <i>Juniors</i> ) Feline Population Medicine
VEM 5503	Epidemiology ( <i>Sophomores</i> ) Case Studies in Canine and Equine Influenza Infection Control in Veterinary Hospitals and Animal Shelters

## Elective Curriculum

VEM 5061	Introduction to Veterinary Disaster Response ( <i>all classes</i> )
VEM 5320	Shelter Animal Behavior and Welfare ( <i>Seniors</i> )
VEM 5322	Introduction to Shelter Medicine ( <i>Juniors</i> )
VEM 5324	Veterinary Forensic Medicine ( <i>Juniors</i> )
VEM TBA	Community Cat Management ( <i>Juniors and Seniors</i> )
VEM 5891	Shelter Animal Medicine Clerkship ( <i>Juniors and Seniors</i> )
VEM 5892	Shelter Medicine Externships ( <i>Juniors and Seniors</i> )
VEM TBA	Consultations in Shelter Animal Medicine Clerkship ( <i>Juniors and Seniors</i> )
VEM 5912	Supervised Research Special Project ( <i>all classes</i> )
VEM 5991	Individualized Investigation ( <i>all classes</i> )

*To date, we have taught nine elective courses in Shelter Medicine to veterinary students at the University of Florida College of Veterinary Medicine, with a cumulative enrollment of more than three hundred.*

## Certificate in Shelter Medicine

Newly developed at the University of Florida is our Certificate in Shelter Medicine for veterinary students, a credential that documents their intensive study and expertise in this emerging area of veterinary medicine. Certificate training programs are unique to the College of Veterinary Medicine, and the Certificate in Shelter Medicine joins other respected certificate programs in International Veterinary Medicine, Aquatic Animal Health, and Food Animal Medicine. Completion of a certificate program is recognized as an elite accomplishment during graduation ceremonies and recorded on the veterinary diploma.

The Certificate in Shelter Medicine will expose students to a cross-section of opportunities in the field, including care of sheltered animals, animal disaster management, cruelty investigations and forensics, shelter animal behavior and welfare, high-quality high-volume sterilization surgery, and research in Shelter Medicine. A Special Projects elective offers the opportunity for mentored in-depth study of a topic of current importance in Shelter Medicine, such as working with a shelter to perform a shelter population management analysis, an infectious disease outbreak intervention, or the creation and implementation of Shelter Medicine protocols. The certificate will identify students who have completed an intensive training program in this field, providing a valuable credential for students seeking employment in animal sheltering or the pursuit of residency training.



*In-shelter training is a core component of the Certificate in Shelter Medicine.*

The certificate program includes 8 units of required courses, clerkships, and externships and 7 units of

*“Shelter Medicine is an exceptionally rewarding field, with the opportunity to represent and care for thousands of animals that may have no other advocates. The Certificate in Shelter Medicine will help open doors in the field and will prepare me to be an effective shelter veterinarian.”*

*Lauren Gray  
DVM Candidate  
Class of 2013*

electives selected from 11 units of elective offerings. All required and elective credits also fulfill credits toward the DVM degree with the exception of 1 unit of elective credit for attending a Shelter Medicine-related continuing education meeting. Students are also required to join the Association of Shelter Veterinarians and to participate in the professional electronic discussion group.

Certificate course offerings span all four years of the curriculum and are offered at least once each year. Students must enroll in the certificate program by the end of the junior year, but are encouraged to enroll as soon as they identify interest in the program. A faculty advisor from the Shelter Medicine Program will be appointed for each enrolled student. The Shelter Medicine program will maintain a database of each student's progress and will report completed certificates to the Office of Instruction.

### CERTIFICATE IN SHELTER MEDICINE CURRICULUM REQUIREMENTS

Course #	Course	Credit	
VEM 5322	Introduction to Shelter Medicine	1	Required
VEM 5061	Introduction to Disaster Response	1	Required
VEM 5891	Shelter Animal Medicine Clerkship	2	Required
VEM 5892	Shelter Medicine Externship	2	Required
VEM 5892	Spay/Neuter Externship	2	Required
VEM 5892	Shelter Medicine Externship #2	2	Elective
VEM 5324	Veterinary Forensic Medicine	1	Elective
VEM 5310	Shelter Animal Behavior and Welfare	1	Elective
VEM TBA	Community Cat Management	1	Elective
VEM TBA	Consultations in Shelter Animal Medicine Clerkship	1	Elective
VEM 5991	Individualized Investigation (shelter topic)	2	Elective
VEM 5912	Supervised Research Special Project	2	Elective
No DVM credit	Continuing Education Meeting (shelter topic)	1	Elective
No DVM Credit	Association of Shelter Veterinarians List-Serve	0	Required

*A total of 22 veterinary students are currently enrolled in the Certificate in Shelter Medicine, making Shelter Medicine the most popular certificate program available at the UF College of Veterinary Medicine. Two seniors will be the first to earn their Certificates in May of 2011.*

## 2 | Advanced Training of Shelter Medical Professionals

### Training of shelter medical professionals to fill the current shortage of veterinarians with the expertise and passion to spend a career in Shelter Medicine

#### Residency Program for Training Shelter Medicine Specialists

The residency training program at the University of Florida is designed to address the critical shortage of specialists in Shelter Medicine. Residents are experienced veterinarians who are returning to the University environment to complete an intensive three-year advanced training program to become Shelter Medicine specialists. Residents will receive in-depth training in epidemiology, infectious diseases, internal medicine, surgery, facilities management, data management, disaster medicine, behavior, environmental enrichment, and forensics. As of this writing, only three other residency training programs exist and only eight veterinarians have completed this level of training. Once trained, these experts will populate positions in academia, progressive animal shelters, and consulting agencies to help shelters develop effective medical programs that keep shelter animals healthy and happy, facilitating their placement into homes. They will build the foundation for our emerging specialty of Shelter Medicine for years to come.

We will train three residents at a time, adding one new resident a year to the three-year training program. This will result in the presence of a first-, second-, and third-year resident in the training program and will provide a critical mass for a robust learning environment. If a suitable candidate for a residency position cannot be recruited one year, the position may be temporarily replaced with a one-year internship in Shelter Medicine. Residents will develop critical thinking skills and detailed knowledge in topics of importance to Shelter Medicine via participation in journal clubs, seminar series, national on-line shelter rounds, conferences, clinical rotations, phone/email consultations with shelters, and on-site shelter consultations and investigations.

A core component of the training program will be participation in detailed on-site shelter consultations, forensic investigations, and animal disaster responses alongside Shelter Medicine faculty. During this component of training, residents will develop the ability to systematically gather data, make observations, and communicate recommendations. In the

third year of the program, senior residents will complete these consultations independently with responsibility for planning the assessment, supervising other residents, and preparing the final report. Shelter Medicine faculty supervisors will take a supportive role when the senior residents lead the consultation visits.

Disease outbreaks continue to be a frequent source of suffering, disruption of services, and loss of life in shelters. Residents will serve as an emergency resource for shelters experiencing disease outbreaks, helping to identify the source, developing an intervention

*Over the course of their training, Shelter Medicine residents will be responsible for completing shelter assessments in a wide range of areas: population management, facilities, intake, vaccination, parasite control, cleaning and disinfection, nutrition and feeding, medical services, stress control and enrichment, animal behavior assessment, and euthanasia. Residents will also provide shelters with recommendations on facility design to enhance animal health, welfare, and live release.*



*Residents develop expertise through an intensive course of study that includes shelter consultation.*

*Residents will develop the ability to recognize, diagnose, and manage disease outbreaks using tools such as diagnostic testing, titer analysis, quarantine, isolation, treatment, communication, and facility decontamination.*

strategy, and making recommendations for the prevention of future outbreaks. Each resident will be assigned to consult on at least one outbreak of ringworm, distemper, parvovirus and panleukopenia.

In order to expose residents to the wide range of sheltering practices currently in place, each resident is expected to visit at least 75 different shelters during the three-year program. Shelter visits will be selected to include a variety of different sheltering models, including open admission, adoption guarantee, nonprofit, municipal, rural, urban, successful, and struggling shelters in different regions of the country. During these visits, residents will explore the facility's philosophy toward intake and disposition of animals, the standard of care animals receive during their

stay in the shelter, and the general effectiveness of the agency in meeting its mission. The shelter visits, though informal, also provide an opportunity for shelter veterinarians and managers to seek advice from these specialists-in-training.

Residents will develop the skills to create new knowledge by designing and carrying out a research project on a topic of current importance to Shelter Medicine. They will each identify an important unresolved issue in Shelter Medicine, develop a hypothesis-driven research proposal, implement their research, and prepare a manuscript for publication. In recognition that new information would not be valuable if it remained cloistered in our Ivory Tower the residents will present their findings to their peers in Shelter Medicine and at national meetings. In addition, two other publications, such as a case study or review article, are required.

Residents will hone their clinical and surgical skills during clinical rotations with specialists in veterinary schools or specialty practice. Clinical rotations will be selected to understand the specialist's approach to diagnosis, treatment, and prevention of conditions commonly found in shelter animals and will include dermatology, ophthalmology, behavior, exotics/zoological medicine, internal medicine, clinical pathology, necropsy, community practice, and high-quality high-volume spay/neuter. These rotations will prepare residents to provide the highest level of care for shelter animals and to develop standardized medical care protocols for common conditions.



*Residents are trained to identify signs of animal cruelty.*

Each resident will also contribute to the teaching of veterinary students in their didactic and clinical coursework. They will lead students on their weekly visits to the local animal control agency where they will discuss issues of animal housing, population management, behavioral welfare, sanitation, and preventive Shelter Medicine. The residents will work one-on-one with the students to provide routine preventive health care as well as special care required for individual animals at the shelter. Under this mentoring, the students will learn not only about the needs of homeless animals in shelters but also about how they, as future veterinarians, are uniquely positioned to help them.

*To date, we have enrolled three residents in Shelter Medicine. The first resident completed training in summer 2010 and is now clinical assistant professor of Shelter Medicine at UF.*

### Internship Program for Intensive Training in Shelter Medicine

While the development of an expert level of knowledge in Shelter Medicine is the goal of the residency training program, we acknowledge that a highly effective shelter veterinarian need not necessarily complete such a thorough and in-depth course of study. A one-year internship in Shelter Medicine would provide trainees a mentored environment with intensive training in the field. The internship may serve to cultivate interest in a full-fledged residency program, but as a stand-alone program it will provide the level and depth of training that produces a skilled practitioner well-equipped for shelter practice. The higher turnover rate of a one-year training program will also help to build the corps of practitioners with specialized training, populating shelters with the veterinarians they urgently need.

The development of a rigorous training program for Shelter Medicine residents at Maddie's® Shelter Medicine Program has resulted in the creation of a powerful infrastructure that can be tapped for training Shelter Medicine interns. In addition to training modules, interns will participate in shelter consultations, the Shelter Medicine clerkships, journal clubs, specialty rotations in the teaching hospital, and other training activities. Each intern will be expected to write a review paper or case report on a topic of importance for Shelter Medicine. We propose to admit one new intern each year for years four through six.



*Advanced trainees will play important roles as future Shelter Medicine educators and mentors.*

### Continuing Veterinary Education

Thousands of veterinarians serve homeless animals through their employment at shelters, their care of animals at private veterinary clinics, and their volunteerism for foster programs, feral cat TNR groups, and other community efforts to save animals. Already committed to applying their healing skills to improve the plight of homeless animals, these veterinarians crave information to better protect the health of shelter pets, improve the quality of their lives, heal wounded bodies and spirits, and help shelters achieve their life-saving goals. Shelter Medicine topics are becoming a staple of national veterinary conferences, a testament to the appeal

of this subject across the veterinary profession. The increasing acceptance of Shelter Medicine as a unique and important focus of practice has helped to elevate the visibility and stature of the specialty.



*Our conferences have drawn attendees from across the US and from such international locations as Canada, Brazil, and Ecuador.*

Maddie's® Shelter Medicine Conference has developed into an annual event that draws a national audience. The conference initially offered content that appealed to shelter veterinarians, technicians, and managers. Now that entry-level Shelter Medicine material is presented at virtually every national veterinary and animal welfare meeting, the Gainesville conference will be reconfigured as a more focused specialty-level conference directed at experienced shelter veterinarians. Like other specialty meetings, we expect this conference will become a leading venue for revealing new research findings, discussion of new approaches toward

improving outcomes for shelter animals, and recruitment of even more veterinarians into the profession of advanced Shelter Medicine. These conferences will also promote networking within the Shelter Medicine community. The international reach of the conference will be increased via capture of conference presentations for subsequent delivery via distance continuing education.

Maddie's® Veterinary Forensics Conference will continue to be offered annually to provide training for shelter veterinarians in cruelty investigations and forensic techniques. The drive to save not only healthy shelter animals, but also the victims of abuse, neglect, puppy mills, hoarding, and blood sports has led to a need to advance training in the veterinary rehabilitation of these victims and well as the prosecution of the perpetrators. Veterinarians are emerging not only as providers of care but also as expert witnesses in the battle against animal cruelty. The veterinary forensics conference will combine expert presentations with hands-on wet labs to give participants tangible tools to take back to their practices.

In addition to hosting the annual conferences, both faculty and residents will continue to make presentations on topics in Shelter Medicine at regional, national, and international veterinary continuing education meetings. They will be available for participation in Shelter Medicine programs at other institutions. These activities will help build the corps of skilled Shelter Medicine practitioners in all corners of the profession.



*Maddie's® Shelter Medicine Conference is being reconfigured as a specialty-level conference for experienced shelter veterinarians.*

*Conferences in the first three years of the program have drawn nearly 700 attendees from across the country and international locations. Additional lectures and continuing education presentations have reached more than 1500 participants.*

### 3 | Shelter Assessment and Consultation Services

**Shelter evaluation and extension services, including shelter assessments and provision of disease control consultation to enhance the welfare of the animals and the efficiency of the programs in achieving their life-saving goals**

A core strategy of the Maddie's® Shelter Medicine Program at UF is shelter health assessments provided through formal consultations. The overall objective of the health assessment service is to optimize our sheltering partners' lifesaving capacity as well as the health and welfare of animals in their care. The consultation process identifies areas for improvement and provides best practices to support humane care and increase the numbers of animals released alive. Faculty, staff, and trainee residents and veterinary students will conduct and participate in shelter health assessments and consultations to provide expertise to sheltering partners while training specialists and students.

The scope of shelter health assessments varies from comprehensive to targeted. Comprehensive assessments include detailed evaluations of all shelter operations affecting animal care and outcomes in addition to analysis of population statistics. Targeted assessments focus on solving a specific challenge such as a disease

**Collaboration  
Fueling Transformation**

*In September 2008, a collaborative consultant team from across the country gathered in Jacksonville, Florida for a shelter health assessment spearheaded by Maddie's® Shelter Medicine Program at the University of Florida.*

*Five faculty, two staff, one intern, and five Shelter Medicine residents represented Maddie's® Shelter Medicine Programs at UF and Cornell University and the Koret Shelter Medicine Program at UC-Davis.*

*After a week onsite and countless hours of followup work, the consultant team's findings and recommendations were presented and swiftly embraced by the shelter's veterinarians and managers. They modified animal care operations, revised plans for a new facility, and enlisted their community resources to build up partnerships for saving lives. The result was an immediate and marked improvement in animal welfare and live release.*

*Highlighted at national conferences and frequently referenced during resident training, this consultation has since become a model for the transformative potential of shelter health assessments and the role of veterinarians in the health and welfare of sheltered populations.*

*Collaborative shelter health assessments are now a permanent fixture in the resident training program.*

outbreak intervention. Targeted consultations may also capitalize on an opportunity for change to ensure best practices, such as developing new housing for cats or assisting with design for a new or expanded facility.

**Comprehensive Shelter Health Assessments**

An animal shelter is a complex institution and a range of factors contribute to the care, health, and well-being of sheltered animals. A comprehensive assessment examines the multitude of operational, programmatic, and management topics in a multi-phase process, requiring substantial investment by both the shelter management team and our consultant team.

The first phase is completion of a questionnaire by the shelter management and medical team and provision of shelter operation protocols and population statistics for review by the consultants. Information provided by the questionnaire, protocols, and population analyses is essential in planning assessment objectives for the consultant team. Since population management is the foundation for all other areas concerning animal health and welfare in the sheltering facility, substantial time is devoted to analyses of historical and current population statistics to identify issues that affect movement of animals through different pathways from intake to outcome. This preparation phase generally requires about 160 hours for completion by faculty and residents.



The second phase of a comprehensive assessment is a site visit by the consultant team for observation of shelter operations and may include interviews with shelter staff and animal welfare stakeholders in the community. If warranted, diagnostic samples may be collected from animals to determine disease status and prevalence. Observations and diagnoses that critically impact animal welfare and recommendations for initial remediation of these concerns are provided to the shelter management/medical team at the end of the site visit. This phase usually requires four days on site.

The third phase of a comprehensive assessment is preparation of a report that includes detailed discussions of population management analyses

and observed shelter practices, with recommendations for best practices and policies to enhance animal welfare and increase positive outcomes. Recognizing the vital importance of a community approach to lifesaving, the report also contains suggestions for extending community outreach to garner more options for animal placement. This phase typically requires about 160 hours for completion.

Consultation doesn't end when the report is submitted. Regular ongoing communication with shelter management is vital to assist with implementation of recommendations, to monitor and measure the outcomes, and to provide troubleshooting for problems that arise. The cementing of a long-term partnership between the shelter and our program is of paramount importance to achieve the best possible outcomes for the animals. In addition, some shelter partners take the next step and invite the consultant team back for a followup consultation to identify areas for continued improvement and further fine-tune sheltering practices. The many hours invested in a comprehensive shelter health assessment can provide a tremendous payoff in terms of improved animal health and well-being and increased lifesaving capacity.

*The recent addition of veterinary student participation in shelter health assessments has been successful in both training the students and nurturing their interest in further study in the field. Four of the five students who have served on shelter assessment teams subsequently enrolled in the Certificate in Shelter Medicine.*

*To date, our team has performed seven comprehensive shelter assessments and conducted follow-up consults with three of these to review progress in implementation of recommendations. The assessments have included both adoption guarantee agencies and open admission shelters throughout Florida and as far away as Illinois and Wisconsin. Collectively, these shelters care for more than 77,600 cats and dogs annually.*



*On-site observations are a vital part of any shelter health assessment.*

### **Targeted Consultations**

When there is a specific problem to address or shelter health question to answer, targeted consultations represent an important opportunity to have a significant impact on the health and well-being of shelters' animals. Targeted consultations vary with regard to reason for the consult and total time investment.

In some cases, our program's experts are called upon to assist with infectious disease outbreaks resulting in significant morbidity and mortality, which strike in both animal control and adoption guarantee agencies. Diagnostic testing and population/housing analyses are conducted by our faculty and residents to determine the disease agents and formulate intervention strategies. The disease agents commonly encountered include canine distemper virus, canine and feline parvovirus, canine influenza, canine respiratory coronavirus, feline respiratory pathogens, and pathogenic streptococcal bacteria. Other consultations have involved recommendations for treatment, control, and prevention of feline respiratory and enteric pathogens based on surveillance diagnostic testing conducted by Shelter Medicine residents as part of their in-shelter research.

Trends and events in animal sheltering and welfare sometimes require large-scale interventions. These consultations have provided new opportunities for Maddie's® Shelter Medicine Program to provide expertise and positively impact the welfare of animals in large-scale field response situations. The 2009 investigation and closure of a cat sanctuary based on reports of compromised animal health and welfare led to our collaboration with numerous animal welfare and disaster response agencies from across the state. Maddie's® Shelter Medicine Program led the medical team, conducting physical examination and infectious disease testing of nearly 600 cats over a three day period. The fall of 2010 brought a multi-agency response to 221 imported dogs quarantined in a temporary shelter due to an outbreak of canine distemper and parvovirus. The reputation and expertise of Maddie's® Shelter Medicine Program at UF led the State Veterinarian of Florida to call on our program to oversee the care of these dogs and the more than 200 volunteers providing it. The intervention strategy designed and implemented by our team resulted in the saving of 113 dogs from these deadly and brutal diseases. Interventions such as these result in incomparable learning experiences for all involved: faculty, staff, residents, and veterinary students. Other responders increasingly appreciate the value of including trained Shelter Medicine veterinarians in large-scale cases.



*Collaboration is key for large-scale interventions.*

*Over the past three years, our faculty and Shelter Medicine residents have conducted targeted consultations for 60 animal control shelters, adoption guarantee agencies, and cat sanctuaries located in Florida, Georgia, Delaware, New York, Pennsylvania, and South Carolina. Collectively, these agencies care for more than 233,000 dogs and cats each year.*

Shelter health assessment is a powerful tool for forging a positive outcome for literally thousands of animals. Comprehensive and targeted consultations provide important opportunities to educate shelter professionals on best practices to support animal health and welfare, and ultimately, the number of lives saved. Finally, the consultations and large-scale field responses provide fertile ground for training veterinary students and Shelter Medicine residents about the challenges facing different types of sheltering operations and potential solutions for overcoming these challenges so that more animals have a comfortable and enriched life.



*Shelter health assessments focus on protecting individual animal welfare in the context of shelter operations.*

In the next years of the program, there will be continued emphasis on working with a diverse range of sheltering agencies. While we believe that every shelter, whether animal control or adoption guarantee, would greatly benefit from a health assessment, we have learned that the demand for this service far exceeds our capacity to deliver. With a limited capacity for shelter consultations in any given year, it is important to ensure that the training value of each consultation is maximized for participating Shelter

Medicine residents and veterinary students, while keeping in mind the value to our shelter partners. As we seek to understand the issues for different sheltering models, we will consult for both adoption guarantee and traditional shelters. Veterinary student involvement and training will be enhanced through the new Consultations in Shelter Animal Medicine Clerkship.

## 4 | Development of New Knowledge

### Development and dissemination of new knowledge to solve existing and emerging threats to successful sheltering programs

Research and scientific investigation is vital if we are to solve the sheltering challenges of today and tomorrow. Knowledge gained through scientific investigation and shared with the sheltering and animal welfare community via publications and presentations advances the field of Shelter Medicine. These scholarly pursuits promote recognition of Shelter Medicine as an evidence-based discipline in the veterinary culture, leading to awareness of the importance for embedding Shelter Medicine topics in veterinary school curricula and supporting the need for training specialists in the field. Most importantly, solving problems that impact shelter animal well-being via scientific investigation is vital to saving more lives.

Over the past three years, our research program has made significant contributions toward advancing the well-being of shelter animals and is recognized as one of the leaders in shelter-based research. Questions

addressed by our practical and timely projects originated from problems and controversies observed during shelter consultations and in conversations with other Shelter Medicine experts around the country. Research projects are conducted by faculty, interns and residents, graduate students, and veterinary students affiliated with Maddie's® Shelter Medicine Program. Recent projects have included national and international collaborations with other Shelter Medicine experts and scientists. In addition, research projects on Shelter Medicine topics are part of the new Certificate in Shelter Medicine.

Disseminating our newly found knowledge is a fundamental value of Maddie's® Shelter Medicine Program, including presentation of posters and abstracts at specialty meetings, seminars at Maddie's® Shelter Medicine Conference, publication in peer-reviewed journals, and inclusion in textbook chapters written by our faculty.

		
<p><b>In the shelter:</b> Fighting the ravages of infectious disease</p> <ul style="list-style-type: none"> <li>• Canine and feline infectious disease epidemiology, control, and prevention</li> <li>• Validation of diagnostic tests for shelter use</li> </ul>	<p><b>At the source:</b> Preventing population control euthanasia</p> <ul style="list-style-type: none"> <li>• High quality, high volume spay and neuter</li> <li>• Nonsurgical alternatives for sterilization of cats</li> </ul>	<p><b>In the community:</b> Taking a holistic approach to shelter live release</p> <ul style="list-style-type: none"> <li>• Importance of animal identification for reuniting lost pets</li> <li>• Community cat management programs</li> </ul>

Shelter Medicine research studies will continue to be funded by intramural and extramural grants awarded to our faculty. These studies will involve residents, graduate students, veterinary students, and in some cases Shelter Medicine experts and scientists at other institutions. Veterinary student research will be supported by an annual Maddie's® Shelter Medicine Research Fellowship, partnered with existing veterinary student training funds from other sources.



*Maddie's® Shelter Medicine Research Fellows earned recognition for their research on shelter approaches to heartworm infection.*

*To date, seven research projects have been conducted by residents, interns, and graduate students affiliated with our program and eight veterinary students have conducted Shelter Medicine research projects under the supervision of program faculty. Faculty and trainees have authored more than two dozen book chapters and peer-reviewed scientific publications.*

## NEW DIRECTIONS: DISTANCE EDUCATION

The first three years of Maddie's® Shelter Medicine Program at the University of Florida have been devoted to new initiatives, program development, and collaboration. We have adopted an ambitious agenda of curriculum development that touches all four years of the veterinary training program and has created clinical Shelter Medicine support services for local adoption-guarantee groups and the county shelter.



*Like the shelters we advise, we must look to the future, identify needs, and devise effective solutions.*

A combination of coursework, clinical clerkships, research, and practical experience provide students with skills ranging from the care of sheltered pets, to protecting the victims of disasters and cruelty, to solving the problems that impede progress toward saving all healthy and treatable animals in shelters. Virtually every student at the College of Veterinary Medicine now gains real-life experiences in animal shelters. They graduate with a strong sense of altruism and an understanding of how veterinarians are uniquely positioned to use their skills to enhance the well-being

of sheltered animals. The Certificate in Shelter Medicine identifies students that have achieved a special level of competency through intensive study in Shelter Medicine.

The residency training program is a demanding and comprehensive course of instruction that blends didactic coursework, in-shelter experience, shelter consultation, and research to achieve the highest level of expertise possible. Veterinarians who complete this training will be prepared to assume positions of leadership, mentorship, and advocacy toward elevating the care and outcome for animals in shelters. These experts will provide the foundation for our emerging specialty for years to come.

The future is bright for Shelter Medicine, and we are grateful to Maddie's Fund® for having confidence in our ability to contribute to it. It is apparent, however, that the need for veterinarians to staff high-quality medical programs in shelters and to provide consultations to animal shelters cannot be met by the current supply or even by those who will complete their training via existing academic programs in the near future. One in three veterinary schools in the U.S. still offer no formal training option for sheltering-minded students. International training programs in Shelter Medicine are also lacking. There is a critical gap and a need to reach veterinary students and practicing veterinarians, cultivate their interest, and provide them with a solid footing for practicing medicine in the shelter environment. It is crucial to develop a more effective means of building the corps of experts needed to populate shelters with skilled practitioners.

*It is crucial to develop a more effective means of building the corps of experts needed to populate shelters with skilled practitioners.*

We have been fortunate to make great strides during the first three years of our program, developing a program with significant breadth and depth in Shelter Medicine. As such, we have an opportunity to leverage the strength of this program to expand our reach beyond our institution's walls. Through facilitated strategic planning and a survey of the current environment, we came to recognize an imperative to increase Maddie's® Shelter Medicine Program's capacity and efficiency in the delivery of Shelter Medicine training.

Distance education is an emerging field of education in which instructors and students are separated by time and space but connected by technology. An entire educational specialty has developed devoted to the art and science of utilizing technology to increase the geographical reach of training programs as well as to attract nontraditional students, often working professionals, who are unable to attend traditional onsite educational programs. Distance education programs may utilize a combination of distant and onsite

educational delivery (blended programs), online delivery in which all students adhere to the same schedule of instruction (synchronous programs), or online delivery in which students access training materials at their own pace (asynchronous programs).

*The breadth and depth of the program at UF uniquely positions Maddie's® Shelter Medicine Program to be a national and global provider of Shelter Medicine training.*

We propose to develop a distance education program in which veterinary students and veterinarians world-wide can complete the Certificate in Shelter Medicine, regardless of where they live. This program will greatly increase the reach of Maddie's® Shelter Medicine Program at the University of Florida by providing advanced training in Shelter Medicine beyond the confines of the few programs currently housed in North American veterinary schools.

Content for the online certificate program will be adapted from that already under development for the veterinary students at the University of Florida and from the residency training modules. We envision that most of the courses will be offered year-round for asynchronous learning, allowing each participant to design a training program tailored to their own circumstances. In some cases, particularly for group projects and hands-on courses, synchronous and blended technology may be more effective. Laboratory courses and externship experiences will be completed at the University of Florida or via educational partners at other locations. Depending on the course, instructional technology may include traditional static content, streaming video, audio, and interactive course tools such as discussion boards and group projects to encourage collaboration. Student access to a computer and high-speed internet will be required.



Quality distance education has become a highly specialized method of education. Likewise, potential trainees through distance education have become discerning consumers with high expectations. The development of a highly regarded distance education program in Shelter Medicine will require expertise in adult learning theory, instructional design, and information technology, skills that are not currently well-honed in the current Shelter Medicine faculty. Fortunately, the University of Florida has already developed several model distance education programs such as the online MBA program, which was recognized this year as one of the top two

programs of its kind in the world. UF has identified distance education as a priority for further expansion and has a newly-created Distance Education department to facilitate growth in this area. University resources and expertise, in addition to private companies specializing in distance education, will be leveraged for the development and implementation of our new program. Considerations include managerial services for marketing, registration, retention, and IT support for students and access to instructional designers to aid faculty in the translation of traditional educational materials into engaging and effective online teaching tools.

It is expected that the students pursuing the distance Certificate in Shelter Medicine will be both veterinarians-in-training and practicing DVMs who wish to expand their knowledge and skill set in Shelter Medicine while gaining a valuable credential. Publicity efforts will initially be aimed at US-based students, with eventual expansion into international markets.

To take advantage of UF resources and collaborate with distance learning experts, the expansion of Maddie's® Shelter Medicine Program as an online distance education provider will require the addition of 1) a third faculty member to increase teaching and development capacity and 2) a staff curriculum coordinator to consolidate the daily management of course offerings to University of Florida students, collaborative residency training programs, and the new online Certificate program. It is expected that the faculty focus for Year 4 of Maddie's® Shelter Medicine Program will center on the planning of the online Certificate program and delving into instructional design for distance courses. The Certificate program is expected to be fully developed and available to veterinary students and veterinarians outside the University of Florida in Year 5.



*Veterinary students at the University of Florida have responded with enthusiasm to the Shelter Medicine curriculum and Certificate. We look forward to the opportunity to cultivate interest in Shelter Medicine at other veterinary colleges through the proposed distance Certificate Program.*

## NAMING AND RECOGNITION OF MADDIE'S FUND®

The support and commitment of Maddie's Fund® to Shelter Medicine at the University of Florida has made possible our program's achievements to date, and as we proceed to years four through six, we look forward to continued opportunities to acknowledge the vital role of Maddie's Fund® in our successes and services.

### Naming Opportunities

The program is named Maddie's® Shelter Medicine Program at the University of Florida for as long as the program is sponsored by Maddie's Fund®.

Each of the academic positions and staff funded by the program are named for Maddie's Fund®:

- Maddie's® Professor of Shelter Medicine
- Maddie's® Clinical Associate Professor of Shelter Medicine
- Maddie's® Clinical Assistant Professor of Shelter Medicine
- Maddie's® Shelter Medicine Resident
- Maddie's® Shelter Medicine Program Coordinator
- Maddie's® Shelter Medicine Intern (*proposed for years 4 to 6*)
- Maddie's® Shelter Medicine Curriculum Coordinator (*proposed for years 4 to 6*)

Training programs and services are named for Maddie's Fund®:

- Maddie's® Shelter Medicine Externship
- Maddie's® Shelter Medicine Research Program
- Maddie's® Shelter Medicine Conference
- Maddie's® Veterinary Forensics Conference

Courses and the Certificate Program, while not permitted to be formally named for Maddie's Fund®, will be referenced in materials and the website as Maddie's® courses and Maddie's® Certificate in Shelter Medicine.

### Other Recognition

All reports, presentations, and materials (print and electronic) created by faculty, residents, interns, students, and staff will continue to acknowledge the support of Maddie's Fund®. The Pet Rescue Foundation is underwriting Maddie's® Shelter Medicine Program at the University of Florida. Materials will feature both the Maddie's Fund® logo and the University of Florida logo.

All publications describe author affiliations as Maddie's® Shelter Medicine Program at the University of Florida in place of an academic department.

Whenever possible, press coverage is sought for important events and discoveries made by the program. These media opportunities will include a description of Maddie's Fund®'s role in the project. Press releases will include a paragraph, "About Maddie's Fund" designated by Maddie's Fund®.

## Ongoing Recognition of the Maddie's Fund® role in UF Shelter Medicine

We will recognize the development and continued support of this Program by Maddie's Fund® through creation of a wooden and bronze plaque that will be conspicuously displayed in the Dean's reception suite where dignitaries, civic leaders, veterinary medicine educational leaders, alumni, and prospective donors gather for meetings. In addition to the recognition plaque in the Dean's area, a similar plaque will be displayed in the Shelter Medicine office and a virtual plaque will be posted on the UFShelterMedicine.com website. The plaques will contain the logo of Maddie's Fund®, The Pet Rescue Foundation and the following suggested wording:



*The Pet Rescue Foundation*

*With gratitude to*

*Maddie's Fund®, the Pet Rescue Foundation*

*for the establishment of the Shelter Medicine Program at the*

*University of Florida College of Veterinary Medicine*

*to enhance the health and welfare of homeless animals through education, innovation,  
and advancement of the life-saving goals of sheltering programs.*

*A bright future for sheltered animals depends on new generations of veterinarians  
with specialized knowledge and skills to keep shelter pets healthy and treat those  
who are sick and injured. Maddie's Fund® is building a future where all healthy  
and treatable shelter dogs and cats are guaranteed a loving home.*

## PROGRAM SUSTAINABILITY

As we progress from a focus on program development to one of integration into the culture of the College of Veterinary Medicine, we must turn our attention to sustainability for the very special program that has been made possible by Maddie's Fund®. By the time our distance learning curriculum is fully executed, Maddie's® Shelter Medicine Program at the University of Florida will have operating costs of approximately \$1 million per year. Approximately three-quarters of this cost is for personnel.

The economic downturn has rippled through charitable giving, and UF has not been immune to decreased gifts from foundations, individuals, and industry. The economic condition is particularly dire in Florida, impacting our ability to garner support in our home state. With this in mind, we have begun to explore plans to develop a sustainable future for Shelter Medicine at UF. Our objective would be to maintain our programs at the level achieved as a result of the Maddie's Fund® investment.

### Donor development and faculty endowment

To sustain the momentum created by the Maddie's Fund® investment in the Maddie's® Shelter Medicine Program at the UF, a strategic fundraising plan led by the College's Development Office is underway. While we will work to expand the support currently provided to affiliated Shelter Medicine personnel, the most effective means to secure perpetual funding for personnel is via endowed positions. These large contributions support their positions through investment income. Several endowed positions already support Shelter Medicine or animal welfare faculty and residents at Mississippi State, University of Pennsylvania, Cornell University, and North Carolina State. We have identified 10 prospective donors with special interests in animal welfare and who have connections to our program. One of these is considering a major gift to support the program Director's position. The Dean of the UF CVM has identified support of this faculty position as the top priority of our College's endowment recruitment.



*The UF CVM recognizes the importance of Shelter Medicine and has made recruitment of endowment support a top priority.*

### Service fees

With an eye on leveraging service income to support operating costs for consultation and diagnostic services, we have increased our shelter health assessment fees to reflect the true value of this service. The revenue will be used to sustain this service, which is essential for fulfillment of residency training requirements and enhancing life-saving opportunities for shelters. A possible negative consequence of implementing fee-for-service is that some shelters may not have the resources to participate. It is likely that we will continue to offer pro bono or steeply discounted services in some situations, which will reduce the income-earning potential of the consultation services.

While we are very excited about the unique role of the distance education program in expanding opportunities for shelter medicine exposure and training, we are aware that this vital program may not be self-funding. Our primary target audience, veterinary students, pays block tuition at their home institutions and is unlikely to be able to pay additional graduate level tuition at UF. Our secondary target audience, shelter veterinarians, may in some cases be capable of paying full tuition for the distance learning program. However, as in the provision of consultation services, it is likely that some individuals that need this the most will be incapable of paying the listed prices. We view our education program as mission-driven, and would be disappointed if financial ability ultimately becomes a limiting factor in whom we can serve. Thus, we will

need to identify other subsidies or sponsors to underwrite the costs and fees for this program to ensure its accessibility.



*Industry support of Shelter Medicine research and continuing education will continue to be vital components of a sustainable Shelter Medicine program at UF.*

### **Self-sustaining conferences**

The Shelter Medicine Conference Series, including symposia in Shelter Medicine, veterinary forensics, and animal disaster response is well-supported through registration fees, vendor exhibits, and grants from animal welfare foundations. It is our goal to contain costs so that the Shelter Medicine Conference Series becomes revenue-neutral and self-sustaining.

### **College support and industry partnership**

The Shelter Medicine research program is currently the most secure component of Maddie's® Shelter Medicine Program. The college provides a full-time research technician devoted solely to Shelter Medicine. Research operating costs are largely supported by collaboration with industry partners via grants or contribution of materials and by grants from animal health foundations. These partnerships will continue in the future, and new partnerships will be forged with other corporations that have recently expressed interest in Shelter Medicine needs. In addition, royalties from the UF canine influenza virus patent will be used to support veterinary student and resident research projects.

## PROGRAM PERSONNEL

The following positions are proposed for funding by Maddie's® Shelter Medicine Program at the University of Florida. Although we have proposed named individuals to fill some of the positions, it is possible that personal situations or new opportunities could arise in which alternate appointments could be made to the named positions.

### **Maddie's® Professor of Shelter Medicine, Program Director**

Julie Levy, DVM, PhD, DACVIM

Program Director duties include supervision of the residencies, externships, and personnel; overseeing the behavior, community cat, forensics, and special projects courses; creation and supervision of the clerkship in shelter consultation practice; teaching veterinary students in the introductory course and the Shelter Medicine clerkship, performing research, and delivering continuing education to veterinarians.

*Dr. Levy's research and clinical interests center on the health and welfare of animals in shelters, feline infectious diseases, humane alternatives for cat population control, and contraceptive vaccines for cats. She is the founder of Operation Catnip, which has helped veterinary students understand the complexities of the homeless cat issue while neutering more than 45,000 cats since 1994. Dr. Levy has published more than 100 journal articles and textbook chapters. She is the recipient of the Carl J. Norden-Pfizer Distinguished Teacher Award, Outstanding Woman Veterinarian of the Year, and the European Society of Feline Medicine Award for Outstanding Contributions in the Field of Feline Medicine.*

### **Maddie's® Clinical Assistant Professor of Shelter Medicine**

Cynda Crawford, DVM, PhD

Clinical Assistant Professor duties include direction of the shelter consultation program, including disease management and shelter health assessments; coordinating the Shelter Medicine research program; course coordinator for the disaster medicine course; teaching veterinary students in the introductory course and the Shelter Medicine clerkship; residency training; supervising Certificate students; and delivering continuing education.

*Dr. Crawford's interests include diagnosis, treatment, management, and prevention of infectious diseases in dogs and cats in sheltering facilities. Her current focus is the diagnosis of viruses and bacteria that cause acute respiratory infections in dogs in shelters. Dr. Crawford's accomplishments include discovery of canine influenza virus and evaluation of diagnostic assays for feline immunodeficiency virus. Dr. Crawford has published more than 50 journal articles and textbook chapters. She is the recipient of the Florida Association of Kennel Clubs Award for Outstanding Clinical Investigation and the Pfizer Award for Research Excellence.*

### **New Addition: Maddie's® Clinical Assistant Professor of Shelter Medicine**

To be announced.

To expand the Certificate in Shelter Medicine to an online format, it will be vital to increase teaching and development capacity through an additional faculty member. This expansion will make the UF program available to veterinarians and veterinary students throughout the country and internationally. The new faculty member will participate in all aspects of student and residency training in addition to creating new instructional materials for the online Certificate program.

### **Maddie's® Shelter Medicine Program Coordinator**

Rachel Michaud, Certified Animal Welfare Administrator

Program Coordinator duties include managing the business and outreach components of Maddie's® Shelter Medicine Program (including fiscal administration, course and consultation logistics, electronic newsletters, website development, and coordination of special events) and contributing to the program's shelter consultations and research projects. The Coordinator organizes conferences and continuing education programs, strategic planning, and creation of instructional materials and program reports.

*Having worked with or in animal shelters for more than ten years, Ms. Michaud's background includes nonprofit shelter operations, management, and administration. She is committed to mission-based management and has directed the development of shelter programs including adoption, foster care, volunteer services, and low-cost spay and neuter. She is particularly interested in progressive management strategies in animal welfare agencies and innovative, replicable lifesaving programs.*

### **New Addition: Maddie's® Shelter Medicine Curriculum Coordinator**

To be announced.

This is a new position designed to support the growing number of courses and students in the Shelter Medicine Program. With more than a dozen courses and hundreds of UF students enrolled in the program, recruitment for courses, coordinating faculty and student schedules, developing course syllabi, and arranging student visits to local animal shelters has become a monumental task. The planned expansion to make the Certificate program available online will require even more support to free up faculty time for course development and to coordinate activities with the distance learning technology providers. In addition, the curriculum coordinator will assist faculty in gaining expertise in this new teaching medium. A key reason for the popularity of the student Shelter Medicine program at UF is the enthusiasm and accessibility of the faculty. Continued one-on-one communication between students and faculty can only flourish if faculty time is protected by collaboration with skilled support staff.

### **Maddie's® Administrative Assistant**

Jennifer Atkins

The current part-time administrative assistant position will be increased to full time. The assistant is responsible for supporting the activities of the program coordinator and curriculum coordinator by logging student accomplishments in the Certificate program and individual courses, keeping the shelter directory updated, managing fiscal transactions, making travel arrangements, distributing teaching materials, scheduling classrooms, and providing receptionist services for the entire Maddie's® Shelter Medicine Program team.

### **Maddie's® Residents in Shelter Medicine**

Laura A. Andersen, DVM

Catherine McManus, VMD, MPH, DACVPM

*Dr. Andersen is a second-year resident in Shelter Medicine at UF. In addition to the residency, Dr. Andersen is currently pursuing a Master of Public Health from the University of Minnesota. She graduated with great distinction from Iowa State University having earned a BS in Microbiology with a minor in Food Science before attending ISU's College of Veterinary Medicine. While working toward her DVM degree, she developed a special interest in Shelter Medicine. She helped co-found the college's Association of Shelter Veterinarians' Student Chapter. During her senior year, she gained experience at five different shelters as part of an externship through the UC Davis Koret Shelter Medicine Program*

*which cemented her desire to pursue a career in Shelter Medicine. After graduation, she worked in private practice and shelters in western North Carolina. Dr. Andersen's interests include veterinary forensics, public health, emergency response/preparedness, the "Link" between domestic violence and animal cruelty, infectious disease control and pathology.*

*Dr. McManus is a second-year resident in Shelter Medicine at UF. She is already board-certified with the American College of Veterinary Preventive Medicine and has a Master of Public Health. Prior to becoming a Shelter Medicine resident, Dr. McManus was a veterinary epidemiologist with the Virginia Department of Health and a Veterinary Corps Officer on active duty with the US Army. Her interests include infectious disease prevention in animal shelter populations, the health and safety of animal shelter workers and volunteers, the rabies virus, and hoarding. Dr. McManus continues to serve as a veterinarian in the US Army reserves.*

## **Affiliated Personnel**

### **Merial Clinical Assistant Professor of Shelter Medicine**

Natalie Isaza, DVM

### **Clinical Assistant Professor of Shelter Medicine**

Brian DiGangi, DVM, DABVP

### **Adjunct Clinical Associate Professor of Shelter Medicine**

Brenda Griffin, DVM, MS, DACVIM

### **Shelter Medicine Research Technician**

Sylvia Tucker, BS

### **Adjunct Clinical Assistant Professor in Forensic Medicine**

Melinda Merck, DVM

### **Associate Director, William R. Maples Center for Forensic Medicine**

Jason H. Byrd, PhD, D-ABFE

### **Disaster Medicine Instructor**

John Haven, MA, CPA

Director of Medical/Health Administration, UF College of Veterinary Medicine

### **Morris Animal Foundation Fellow, PhD Candidate**

Tara C. Anderson, DVM, MPH

## APPENDICES

## Key Objectives, Program Years 4-6

	<b>Year 4 2011-2012</b>	<b>Year 5 2012-2013</b>	<b>Year 6 2013-2014</b>
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**Veterinary Student Education**

Elective Courses	Offer Community Cat Management	Continue elective offerings	Continue elective offerings
Special Projects Courses	Offer 1 Special Projects Course	Offer 1 Special Projects Course	Offer 1 Special Projects Course
Advanced Clerkship	Begin offering Advanced Clerkship	Continue to offer Advanced Clerkship	Continue to offer Advanced Clerkship
Maddie's® Externships	Enroll 8 Maddie's Externs	Enroll 8 Maddie's Externs	Enroll 8 Maddie's Externs
Certificate in Shelter Medicine Program	Continue to offer Certificate in Shelter Medicine	Continue to offer Certificate in Shelter Medicine	Continue to offer Certificate in Shelter Medicine
Distance Certificate in Shelter Medicine	Offer Shelter Animal Behavior & Veterinary Disaster Response & Special Project	Offer Intro to Shelter Medicine & Community Cat Management	Offer Veterinary Forensics & Consultations in Shelter Animal Medicine

**Advanced Training of Shelter Medical Professionals**

Practitioner Training: Shelter Medicine Conference	Host conference, provide distance CE	Host conference, provide distance CE	Host conference, provide distance CE
Practitioner Training: Veterinary Forensics Conference	Host conference	Host conference	Host conference
Practitioner Training: National / International veterinary CE	Present at 3 meetings	Present at 3 meetings	Present at 3 meetings
Specialist Training: Residency in Shelter Medicine	Admit one new resident	Admit one new resident Graduate two residents (admitted program year 2)	Admit one new resident
Specialist Training: Internship in Shelter Medicine	Admit one new intern (first year may go unfilled if suitable candidate not found)	Admit one new intern Graduate one intern (if filled)	Admit one new intern Graduate one intern

**Shelter Assessment and Consultation Services**

Large-scale field response	Lead medical team (or equivalent) for one event	Lead medical team (or equivalent) for one event	Lead medical team (or equivalent) for one event
Shelter health assessment service	Continue program	Continue program	Continue program
Disease diagnostic, control, and prevention service	Continue program	Continue program	Continue program

**Research and Dissemination of New Knowledge**

Student Research	Enroll 2 student researchers	Enroll 2 student researchers	Enroll 2 student researchers
Resident and Intern Research	Continue program	Continue program	Continue program

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Examination .....

Vaccination .....

Parasite Treatment and Prophylaxis .....

Selection of Housing.....

**III. ANIMAL HUSBANDRY** .....

Summary.....

Canine Housing and Environmental Enrichment.....

Canine Cleaning and Disinfection .....

Canine Nutrition.....

Feline Housing and Environmental Enrichment.....

Feline Cleaning and Disinfection .....

Feline Nutrition.....

Special Species Housing and Environmental Enrichment .....

Special Species Cleaning and Disinfection.....

Special Species Nutrition .....

Other Cleaning and Disinfection .....

Animal Control Officer Vehicles .....

Laundry.....

Dishes, Toys and Litter Boxes .....

Lobby and Hallways.....

**IV. BEHAVIORAL WELLNESS .....**

    Summary.....

    Introduction .....

    Behavioral Evaluation and Selection .....

    Stress Recognition, Reporting and Management.....

**V. VETERINARY SERVICES .....**

    Summary.....

    Introduction .....

**VI. ANIMAL OUTCOME .....**

    Summary.....

    Adoption.....

    Returns to Owner .....

    Animal Transfer.....

    Foster Care .....

    Euthanasia.....

**VII. MANAGEMENT & PROGRAMS .....**

    Summary.....

    Introduction .....

    Animal Flow-Through .....

    Staffing Capacity.....

    Staff Comments.....

**VIII. APPENDICES.....**

## Shelter Medicine Elective Curriculum

### **VEM 5061 Introduction to Veterinary Disaster Response**

This elective course is offered each semester to all classes in the veterinary school curriculum. The course aims to introduce students to the basics of responding to disasters as a veterinary responder, and to build a base for further development in responder training. The course includes an overview of the individual veterinary clinic or shelter facility, the county, and the state level response issues and the roles each play, and how they relate to the State Agriculture Response Team (SART).

The course includes an introduction to the National Incident Management System (NIMS) and the Incident Command System (ICS), and introduces basic issues with hazardous materials (HAZMAT) that can occur during disaster response. The overall objective is to make the student compliant with the Federal Emergency Management Agency (FEMA) minimum responder credential requirements. The student will accomplish these objectives with two hours of on-site lecture and four self-paced on-line courses completed via the FEMA website. Upon completion, students will be credentialed to join the UF VETS disaster response team and to deploy to state and national declared disasters.

### **VEM 5320 Shelter Animal Behavior and Welfare**

This elective course introduces senior veterinary students to the application of veterinary behavior sciences in the environment of animal shelters. This course will teach the student about important aspects of behavior, enrichment, and welfare of pets in animal shelters and about how the behavioral health of dogs and cats in shelters is evaluated, managed, and treated. Upon successful completion of the course, the student will be able to recognize risk factors for behavioral problems and stress in cats and dogs in animal shelters. The student will be able to recognize signs of anxiety, aggression, and fear and to develop preventive behavioral health care programs and treatment plans.

### **VEM 5322 Introduction to Shelter Medicine**

This elective course is offered to junior veterinary students and introduces basic health and welfare concepts in the sheltering of dogs and cats. The course will discuss the impact of disease outbreaks, disease detection and control, preventive strategies to minimize disease, behavior problems, reduction of stress factors, animal cruelty and neglect, high-quality high-volume spay/neuter, and the role of veterinarians in protecting the health and welfare of animals in shelters.

### **VEM 5324 Veterinary Forensic Medicine**

Veterinarians are the professionals most likely to be asked to render expert opinions regarding suspected cruelty cases, and their involvement is critical to successful outcomes. The purpose of this elective course is to introduce junior veterinary students to the application of veterinary forensic sciences in crimes involving animals, including recognition of abuse, crime scene investigation, and interacting with the legal community.

Upon successful completion of the course, the student will be able to identify, collect and analyze evidence related to crimes involving animals, interpret causes of injury or death, and properly document all findings in an appropriate legal report. The student will understand how to work with investigators, prosecutors, and how to provide courtroom testimony.

### **VEM TBA Community Cat Management**

This course will use a combination of lectures, discussions, and clinical laboratories to cover the controversial topic of managing unowned free-roaming community cats during a week-long intensive elective course. Students will gain an understanding of the impacts of community cats on public health, the environment, and cat welfare. Medico-legal issues associated with community cat management in Florida will be discussed. Handling and surgical skills for both pediatric and adult cats undergoing spay and neuter surgery will be developed in a clinical environment.

Students will develop competencies in safe and humane procedures for feral cat trapping, transportation, housing, feral cat anesthesia and monitoring, surgical site preparation, administration of injectable and topical medications, and high-quality high-volume feline castration and ovariectomy.

### **VEM 5891 Shelter Animal Medicine Clerkship**

This elective clerkship is offered to Junior and Senior veterinary students. Students accompany Shelter Medicine faculty and residents to the local animal shelter each week and learn how issues such as population management, housing, sanitation, stress management, and preventive Shelter Medicine affect the welfare and outcome of animals in shelters as they provide needed medical care to individual shelter pets. Students also perform spay, neuter, and other surgeries for pets belonging to local adoption-guarantee agencies and provide care for the pets of indigent pet owners.

### **VEM 5892 Veterinary Externships**

Students are encouraged to participate in elective externships during their clinical training. A special stipend (\$1500) to support experience for exceptional students in adoption-guarantee shelters has been available for four students per year through Maddie's® Externship Program. Requirements for the stipend include two weeks in an adoption-guarantee shelter and two weeks in an open-admission shelter, working under an experienced shelter veterinarian. Students are also encouraged to participate in high-quality high-volume spay-neuter externships.

### **VEM TBA Consultations in Shelter Animal Medicine Clerkship**

Students will work with Shelter Medicine faculty and residents to perform a comprehensive shelter evaluation for a client animal shelter. Students will develop the ability to work with a client animal shelter to systematically gather data, perform observations, communicate findings, and provide resources regarding management, medical and husbandry practices, and facility use at shelters as related to physical and mental animal health. Students will spend the first week of the clerkship with Shelter Medicine Clinicians to analyze the shelter's population data and protocols and the second week of the clerkship on-site during a shelter evaluation.

Upon completion of the clerkship, students will be familiar with the procedures for planning a major shelter assessment and understand issues regarding confidentiality and open records requirements for public and private agencies. Students will be able to analyze and display data retrieved from major shelter software programs and to perform a detailed population management analysis including development of statistics for intake, disposition, length of stay, and adoption-driven capacity.

Students will observe staff at work in all aspects of shelter operations including intake, vaccination, parasite control, cleaning and disinfection, nutrition and feeding, medical services, spay/neuter, stress reduction and enrichment, behavior assessment, and euthanasia and will complete checklists comparing observed practices to recommended standards. Students will participate in the development of a presentation of findings and recommendations to shelter management at the conclusion of the consultation visit.

### **VEM 5912 Supervised Research Special Project**

Each year, students will explore as a group a topic of current controversy in animal sheltering. The course is self-paced and may consist of required readings, videos, on-line research, and in-shelter experience. Students are encouraged to collaborate and discuss the material with each other. The final project is a group PowerPoint presentation by the course participants to the faculty, students, and staff of the College of Veterinary Medicine. Credit for the course is based on successful completion of all assignments and a final one-on-one discussion with one of the course faculty members.

The theme of the first course is Challenges and Controversies Facing Bully Breed Dogs in Animal Shelters and will explore the special challenges faced by animal shelters in dealing with unwanted pit bulls. Topics include breed prejudice, myths, breed characteristics, behavior evaluation, and dog fighting using a combination of directed reading, videos, webinars, web research, shelter visits, and attendance at the Blood Sports forensics conference.

### **VEM 5991 Individualized Investigation**

This elective research course is required for graduation with honors from the College of Veterinary Medicine. Students with an interest in Shelter Medicine will be recruited to complete a research project on a topic of current importance in Shelter Medicine. Under the direction of a faculty member, students will select a research topic, develop a research protocol, prepare a grant application, conduct the research, prepare a manuscript for publication, and present their findings at the college research day or at a national meeting. It is expected that an average of 2 students will be selected to complete research projects each year, generally over the summer following the freshman year.

## Resident Training Modules

Maddie's® Shelter Medicine Program at the University of Florida has developed two intensive residency training modules that are offered to Shelter Medicine residents, interns, and fellows at all training programs across the country in addition to those at UF.

### **Introduction to Shelter Medicine for Veterinarians**

This overview of Shelter Medicine topics is designed to introduce first-year trainees to the concepts of physical wellness, vaccination, parasite control, spay/neuter, identification, nutrition, exercise, population management, sanitation, and record keeping. This module is provided over two weeks in a distance education format with a combination of live interactive webinars, independent reading, and problem assignments.

### **Behavioral Wellness for Sheltered Animals**

This module addresses behavioral wellness in the animal shelter, including principles of animal behavior and training, stress management, enrichment, and behavior assessment. The first week of the module is conducted via webinars and the second week, hosted by Maddie's® Shelter Medicine Program in Gainesville, consists of a series of hands-on wet-lab training on animal handling equipment, shelter enrichment, behavior assessment, and training.

### **Shelter Consultation Institute**

This module is being developed jointly by UF and UC Davis for fall 2011. It is a month-long training institute for shelter evaluations. The first two weeks will be conducted by webinar and will include topics such as consultation planning, confidentiality, budgeting, population analysis, metrics, and on-site evaluations of shelter management, medical care, and husbandry. The third week will encompass an on-site shelter assessment, and the fourth week will focus on mentored report writing.