

# The Colorado State University Center for Comparative and Integrative Pain Medicine



**Business Plan**

**January 2009**

**Questions?**

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# Executive Summary

## Why We Do What We Do

Now, more than ever before, **there is no excuse to leave an animal in unmitigated pain.** Safe and effective pain management makes its alleviation more predictable, longer lasting. Treating animal pain is, in our view, non-negotiable.<sup>1</sup> Complex pain problems demand diligently educating and building collaboration between pain medicine providers, generalists, and specialists.<sup>2</sup> However, we also recognize that the challenges of treating pain multiply when the caregiver cannot accurately determine why, when, or where a patient hurts, and further when the patients cannot verbalize their responses. Pain-related behaviors differ within and between species, across age groups and between genders, and in relation to the particular pain type experienced.<sup>3</sup>

Academic medical centers are now seeing pain practice as a serious endeavor – one in which standards of care and education urgently need to be established. The patient population at the Colorado State University Veterinary Medical Center (CSU VMC) offers a robust patient population for whom pain medicine procedures could be reviewed and optimized, including those on the orthopedics and oncology services. Pain counts as a major symptom in seventy-five percent of hospitalized human oncology patients.<sup>4</sup> We estimate that the percentage is similar in veterinary oncology patients with advanced disease. Fear of their animals experiencing pain can cause caregivers to select euthanasia over treatment. Poorly relieved pain not only afflicts cancer patients, but also adds considerable suffering to the family members who love them.

## Toward a Pain-Free Future

Through a comprehensive, interdisciplinary, and integrative approach to pain medicine, clinicians and researchers at CSU are studying novel treatment strategies and embracing humane research methods. We strive to teach and practice pain medicine in accordance with scientific principles and the strongest evidence-based research in order to give animals a better chance at living pain-free and happy lives, even in the face of serious illnesses such as cancer. Across the board, most medical and veterinary schools provide highly inadequate education on palliative care; the subject is rarely discussed even in most textbooks in medicine.<sup>5</sup> Our goal is to change that.

Our treatment plans invite client education and participation, producing an informed and involved client population who are fully prepared to engage with their clinician in a pro-active manner. Pain prevention as well as treatment share equal footing in our pain medicine strategies, backed by the latest research and guided by the highest ethical concerns. The incorporation of integrative therapies such as acupuncture, manual therapy, and massage provide safe pain management and offer both reduction in pain drug requirements and elevation of treatment satisfaction and patient comfort.<sup>6</sup>

# All Veterinary Species Deserve Pain Control

By definition, the CSU Center for Comparative and Integrative Pain Medicine considers pain problems across the board. The strides made by studying pain medicine for animals large and small, domestic and exotic, as well as translational benefits for humans transcend conventional boundaries that ordinarily confine highly specialized medical fields.

## Integrating Resources Campus-Wide and Beyond

The Center operates within a state-of-the-art veterinary medical center, utilizing both standard and complementary methods of relieving pain and maximizing quality of life. The uniquely interdisciplinary nature of the Center provides a fertile forum for in-depth discussion of pain and its causes as well as treatment, focusing especially on animals with post-surgical, arthritic, neurologic, and cancer pain. While the CSU Veterinary Medical Center houses the mainstay of the Center's clinical services and teaching, research extends across the university, to the College of Biomedical Sciences (Neurosciences Division most notably) and the College of Engineering. Active collaborations with pain medicine experts from the surrounding community, human medical institutions, and industry further expand our opportunities to upgrade the teaching and practice of pain medicine.

## Top Priorities

Overarching goals guiding Center activities involve education, research, service, and outreach.

- ❖ **Education** in multimodal analgesic approaches allows students and faculty to learn the latest methods in veterinary pain management. Modalities involving either medications or natural, non-drug methods build comprehensive pain control approaches and improve animals' quality of life.
- ❖ **Research** into the mechanisms and outcomes of pain control measures allow us to contribute to the advancement of the field.
- ❖ **Clinical services** in integrative pain management have existed for over a decade, now encompassing pharmacologic approaches, interventional measures, acupuncture, low level laser therapy, phytomedicinals, nutraceuticals, and massage. A new dimension in what we offer may soon include canine rehabilitation. **Consultation services** for clinicians outside of CSU allow us to widen our impact to influence practitioners in private practice and at other institutions.
- ❖ **Outreach** efforts include the Medical Acupuncture for Veterinarians program, the Medical Massage for Animals Canine Program, various local and national presentations and interviews, and collaboration with the International Veterinary Academy of Pain Management (IVAPM).

# Center Overview

Drs. Peter Hellyer and William Horne founded the CSU Center for Comparative Pain Medicine in 2002. They also developed the first course in pain medicine at CSU and participated in the creation of the International Veterinary Academy of Pain Medicine (IVAPM), located within the CSU College of Veterinary Medicine and Biomedical Sciences and serving the veterinary community at large. CSU and the IVAPM share common goals of defining standards of expertise in pain medicine and pushing quality of care and pain relief for animals to new levels.

Faculty involved with establishing the vision and carrying on the mission of the CSU Center for Comparative Pain Medicine collectively agreed to rename the Center in 2007 in order to better reflect the inclusion of a variety of well-established, non-pharmacologic treatment strategies in the daily operation and study of pain medicine in animals. Thus, the new name, the **CSU Center for Comparative and Integrative Pain Medicine** was accepted by the faculty council in July 2007.

## Mission Statement:

We at the Center for Comparative and Integrative Pain Medicine seek to:

- Provide compassionate, high-quality patient care, putting patients' interests first.
- Promote evidence-based education to veterinarians-in-training as well as clinicians in the pathogenesis, pathophysiology, and effective treatment of pain from a comparative and integrative perspective.
- Develop post-graduate learning programs for veterinarians to gain technical skill and confidence in the latest pain alleviation techniques.
- Encourage humane, scientific study into the biology of animal pain and the comparative effectiveness of analgesic regimens.

## Goals:

- The Center will meet its goals through didactic lectures, clinical service, procedural intervention training, and encouraging student and clinician interaction in multidisciplinary rounds and ongoing research.
  - Make pain medicine education more available to CSU-CVMBS students by offering the graduate pain medicine courses, **VS 680 and VS 681**, every year instead of every other year.

- Continue to grow the **clinical service** to be able to meet the needs of our patients as word spreads about what we provide. In 2008, Dr. Bonnie Wright joined the outpatient pain service. In 2009, we seek to add another pain medicine practitioner as the service grows, and we also have petitioned to lead the charge to develop a canine rehabilitation program. More personnel and the growth in canine rehabilitation awareness will allow us to best meet the needs of our patients; many have survived cancer or are experience spinal pain, arthritis, surgery, advancing age, or neurologic impairment and spasticity.
- **Multiply continuing education offerings** through online course development in pain and integrative approaches for veterinary patients.
- Continue **research** into non-pharmacologic pain control measures, in order to bolster the evidence-based foundations of integrative pain medicine options.
- Add post-graduate learning opportunities such as a pain medicine fellowship and internship.

## Values Statement:

At the Center for Comparative and Integrative Pain Medicine, we strive to promote advances in multimodal, interdisciplinary pain medicine and quality of life through innovative, humane, and evidence-based approaches with a research focus on naturally occurring disease.

## Vision Statement:

We are dedicated to remain at the forefront of comparative pain medicine by adopting a coordinated, interdisciplinary, multimodal approach to pain management and promoting academic achievement, strong clinical service and teaching. We strive to lead the way in humane pain medicine research, examining methods of analgesia in the clinical setting rather than inducing pain in order to study pain.

# Biographies

## Center Director

**Narda G. Robinson, DO, DVM, MS** is a Diplomate of the American Board of Medical Acupuncture, and a Fellow of the American Academy of Medical Acupuncture. She founded and directs the Medical Acupuncture for Veterinarians and Medical Massage for Animals courses. Dr. Robinson holds a master's degree in Biomedical Sciences from CSU and is continuing her research into the comparative neuroanatomic of acupuncture and interactive, virtual reality acupuncture instruction in conjunction with the Neurosciences Section and the College of

Engineering. She is vice chair of the Board of Trustees for the American Board of Medical Acupuncture (ABMA) and chair of the examination committee of the ABMA which conducts board certification examinations for physicians in this specialty. She writes a monthly column for *Veterinary Practice News* on acupuncture and other integrative medical approaches such as herbs and supplements for pain and other medical problems. Dr. Robinson coordinates the graduate course in Comparative Pain Medicine, VS 680 and VS 681; she also coordinates and teaches VM720, Critical Overview of Complementary and Alternative Medicine. She is principal investigator of the ongoing research trial testing a nutraceutical's effects on lameness from arthritis in dogs.

## Center Staff

### **Bonnie Wright, DVM, DACVA**

Dr. Wright serves as the Chairperson of the Board of Directors, of the International Veterinary Academy of Pain Management. She received her Doctorate of Veterinary Medicine from CSU-CVMBS in 1995; she completed her post-doctorate work in anesthesia at CSU in 1996, and her anesthesia and critical care residency at UC Davis in 2000. She has been a faculty member at Ross University on St. Kitts, West Indies, from 2000-2001, and served as a visiting professor until 2006. From 2001 to 2008, Dr. Wright has worked as an assistant professor in anesthesiology at CSU. Her job expanded in 2007 to include development of the Integrative Pain Medicine Service with Dr. Robinson. In 2008, Dr. Wright joined the outpatient pain medicine team and the integrative pain medicine service at CSU.

Dr. Wright became credentialed in medical acupuncture in 2007 after attending the Medical Acupuncture for Veterinarians program. She has continued her work as an emergency doctor at the Fort Collins Veterinary Emergency Hospital since 2003. Her professional interests include integrative approaches to acute and chronic pain, development of interventional regional techniques for cancer pain, teaching, and clinical research.

## Advisory Team

Our on-campus advisory team includes Drs. Peter Hellyer, Ray Whalen, and Dean Hendrickson. We feel fortunate to work with them as well as our off-site advisor, Jamie Gaynor, DVM, MS, DACVA.

## The Next Generation

As the next generation of students, interns, residents, and fellows move into private practice and academia, we look toward the day when ongoing pain assessment and management for animals is considered to be part and parcel of veterinary care.

# Five Year Plan

## Education:

### Current Activities:

- **VS 680 (fall), VS 681(spring) – Comparative and Integrative Pain Medicine graduate course;** considers basic science and clinical applications of pain and pain management techniques from a comparative and integrative perspective. 2 credits
- **VM 720 – Critical Overview of Complementary and Alternative Medicine (CAM);** includes discussion of pain management practices as they pertain to acupuncture, chiropractic, phytotherapeutics, massage, homeopathy, and more (annual). 1 credit.
- **Complementary and Alternative Medicine/Integrative Pain Management Junior Practicum –** offered three times during the spring semester.
- **Medical Acupuncture for Veterinarians –** a 140 hour continuing education program offered in conjunction with the Colorado Veterinary Medical Association.
- **Medical Massage for Animals –** Canine program. A post-graduate learning opportunity for veterinarians and veterinary technicians.
- **Evening Sessions with the Student Chapter of the American Holistic Veterinary Medical Association,** educating students on non-pharmacologic approaches to pain management, including soft tissue manual therapy and trigger point deactivation (occasional)
- **Experiential labs with the Student Chapter of the International Veterinary Academy of Pain Management,** educating students on pharmacologic and non-pharmacologic approaches to pain management, including nerve block laboratories and discussion of current literature. Previous student chapters have put on a locally attended CE program in pain management for veterinarians and technicians.
- **Independent Study Weeks** with Narda Robinson, in which students observe pain management appointments.
- **Independent Study for pre-vet students;** thesis advisor for HONR 499, Senior Honors Thesis, on neuroanatomic acupuncture practice and video-based instructional effort.
- **Mentorship of PVM student for development of pain scales for large animals** (summer, 2007)
- **Mentorship of PVM student and pre-vet student regarding acupuncture for pain management** and other conditions.
- **Mentorship of PVM students regarding neuroanatomical acupuncture and highly detailed anatomy dissections** illustrating underlying anatomy of acupuncture points.
- **Mentorship of PVM student on development of interactive learning module regarding case study of acupuncture for spinal cord injury.**
- **Supervision of the senior design project in ECE401 and ECE 402,** for electrical and computer engineering students working on SimPooch, the canine acupuncture patient simulator.
- **Bi-monthly pain medicine seminars open to the general public.**

### Five-year goals:

- **Continuing education in Pain Medicine for practitioners:** Because pain medicine for animals is a new field, most practitioners in private practice (and their patients) would benefit from intensive, hands-on instruction. Veterinarians will have the opportunity to spend a week or more on the pain

medicine service. Also, we plan to develop online courses suitable to meet the needs of the IVAPM for continuing, pain medicine based education.

## Research:

### Current Activities:

#### Research related to pain – clinical studies

- A research protocol evaluating the effects of an herbal supplement on arthritis pain in dogs.

#### Research related to pain – basic science investigation

- Investigations into the **neuroanatomic substrates of acupuncture points in the dog**. Information from this study can help formulate future interactive courses such as the virtual atlas of canine regional analgesia, now in the planning stages.

#### Research related to educating students on effective pain management approaches

- **Patient simulator development** underway as a joint project with input from faculty and students from Mechanical Engineering and Electrical and Computer Engineering at CSU. The simulator involves building a three-dimensional canine patient (starting with the head), incorporating a haptic interface, and teaching/testing students on their ability to accurately locate acupuncture points based on anatomic location. Accurate location of acupuncture points allows for optimal treatment of pain and pain-related disorders. The simulator, once perfected, will also be able to teach/test proper approaches for nerve block procedures as well as needle placement for epidural catheters.

### Five-year goals:

#### Research on acupuncture and other integrative pain medicine modalities on tumor physiology:

- Continue study the effect of acupuncture on tumor physiology and cytokine production, investigating the mechanisms of action of acupuncture on tumor blood flow, tumor oxygenation, and cancer pain, using dynamic contrast enhancement study via magnetic resonance imaging and Oxylite probes.

## Pain Medicine Service:

### Current Activities:

An active integrative pain management service already exists for in-patients and out-patients, integrating acupuncture, manual therapy, laser therapy, and more.

### Five-year goals:

Expand the pain management service to include canine rehabilitation.

Work in accordance with clinical guidelines for the treatment of pain that promote best practice and link to evidence, such as those created for acupuncture in cancer patients.<sup>7</sup>

## Outreach:

### Current Activities:

Consultation services available for veterinarians and clients who have questions concerning pain control measures, both pharmacologic and CAM-based.

In-house, client-education seminars that are raising awareness among the public and local practitioners about pain medicine and comfort care for animals.

### Five-year goals:

Expand the pain management consultation service to include online consultations and web-based information.

## References

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