



Michael Nolan



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Radiation Oncology

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### Comparative and Translational Oncology

#### Research emphasis:

Dr. Nolan's research program is focused on improving oncologic care for human and veterinary cancer patients. His lab is currently involved in developmental radiotherapeutics (testing and development of new cancer treatment and imaging technologies in pet animals with spontaneously arising disease), and studying the cellular and molecular mechanisms that underlie development of cancer therapy-induced severe side effects – specifically, investigating causes of peripheral nerve injury and macrovascular dysfunction in large and small animal models.

#### Application:

- Radiation-induced late pelvic injuries
- Cancer and cancer-treatment related pain
- Light-activated cancer therapy

#### Collaboration potential:

- Normal tissue radiobiology
- Naturally-occurring models of cancer in pet dogs and cats
- Clinical radiation oncology applications in dogs & cats
  - Stereotactic body radiotherapy
  - Lower urinary tract malignancies

#### Selected publications:

Nolan MW, Marolf AJ, Ehrhart EJ, Rao S, Kraft SL, Engel S, Yoshikawa H, Golden H, Wasserman TH, LaRue SM. Pudendal nerve and internal pudendal artery damage may contribute to radiation-induced erectile dysfunction. *International Journal of Radiation Oncology, Biology and Physics*, 91(4):796-806, 2015.

Yoshikawa H, Roback DM, LaRue SM, Nolan MW. Dosimetric consequences of using contrast-enhanced computed tomographic images for intensity-modulated stereotactic body radiotherapy planning. *Veterinary Radiology and Ultrasound* 56(6):687-695, 2015.

Nolan MW, Gieger TL, Vaden SL. Guest Editorial. Management of transitional cell carcinoma of the urinary bladder of dogs: important challenges to consider. *The Veterinary Journal* 205(2):126-127, 2015.

Nolan MW, Kogan L, Griffin LR, Custis JT, Biller BJ, Harmon JF, LaRue SM. Intensity-modulated and image-guided radiation therapy for treatment genitourinary carcinomas in dogs. *Journal of Veterinary Internal Medicine*, 26(4): 987-995, 2012.

<http://www.ncstatevets.org/radiationoncology>