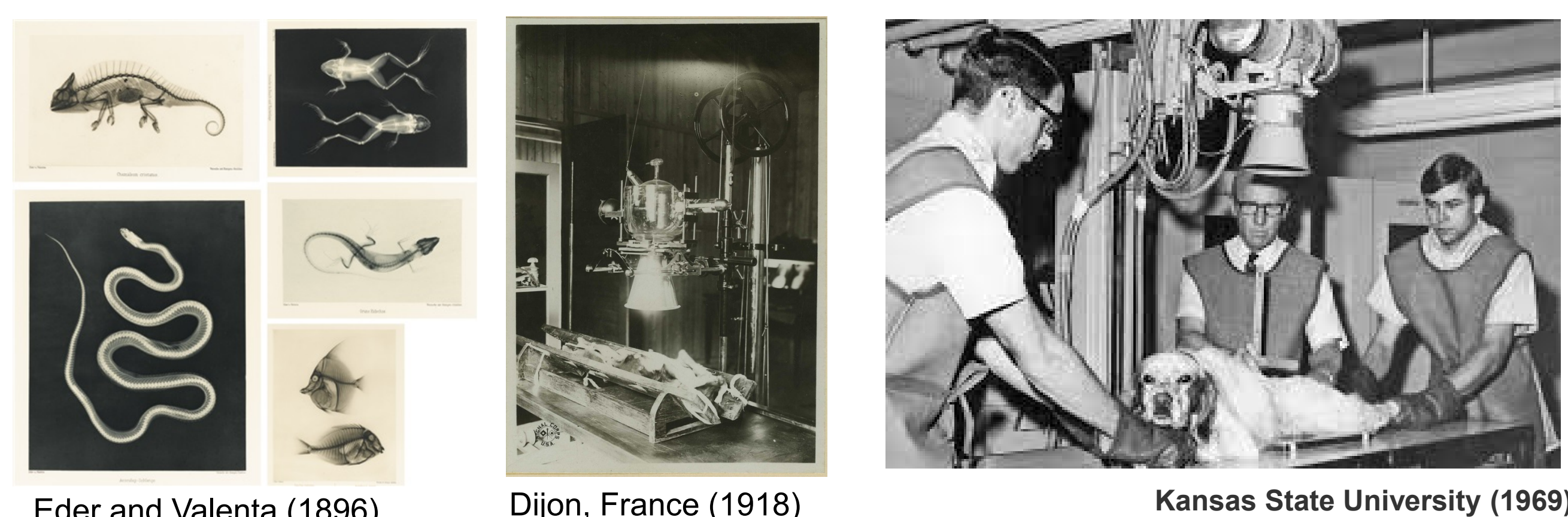


TG 110: Radiological Protection in Veterinary Practice

Mandate. The mandate of this Task Group is to advise the Main Commission on radiological protection aspects involved in the applications of ionising radiation in veterinary medicine. As such, this includes treatment of [occupational and public exposure of humans](#) as it relates to delivery of veterinary care, and [radiological protection considerations for the animals](#) receiving such care. The Task Group is to also consider the risks resulting from [contamination of the environment](#) from the applications of nuclear medicine in veterinary medicine. The TG will include the ethical considerations underlying various types of veterinary practice, and the ethics applied to protection of animals and plants in the environment. The Task Group will use the approach previously used for ICRP Publications 105 and 121 as a starting point for organization of the work and topics. It is recognized that this publication will provide initial guidance and set the stage for additional considerations that may be appropriate.

Background and Context

1. From 1896 onward there was radiology...

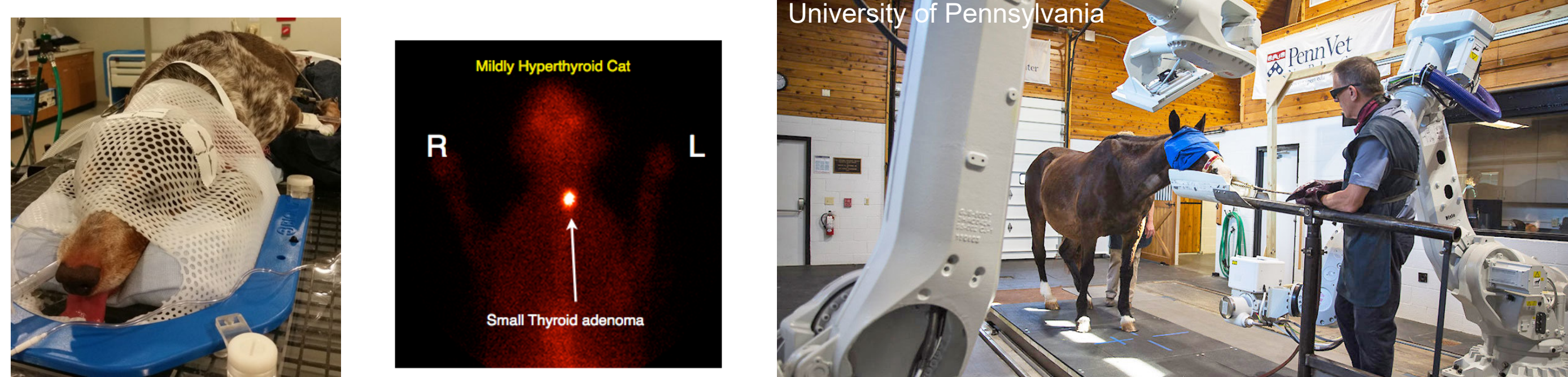


2. From a radiation protection point of view this was a rather “innocent” practice and not an RP priority

Applying a few simple rules could sufficiently limit the risks to staff, owners/handlers. Animal patients were believed not to be exposed to any real risk.

Fun Fact! Professor R. Eberlein of the Royal Veterinary Academy in Berlin was a close friend of Roentgen. He was the Chairman of the First and Second Radiological Congresses held in 1905 and 1906-the only veterinarian to have ever been so honored. (Kealy 2002)

3. Veterinary diagnostic imaging, interventional radiology and radiation therapy have seriously expanded and diversified



4. Radiation risks have increased and diversified accordingly, protection has become more complex and challenging: patients, caregivers, members of the public, environment

Lessons from human medicine tell us that deterministic effects may appear in interventional radiology and in CT, that highest doses to workers professionally exposed to radiation are from interventional radiology, and that cancer induction in exposed individuals remains the biggest concern

Main Radiation Protection Concerns

There are many unique radiation protection challenges in veterinary practice compared to human medicine. For example, many radiological procedures on large animals are performed outside of a regulated environment and new equipment may have been retrofitted in an existing building without due consideration of shielding requirements. Justification is not supported by a veterinary equivalent of the “referral guidance” or “appropriateness criteria” we know from human medicine, there are no DRL’s, there is little to no agreement on activities of radiopharmaceuticals to be administered for therapy purposes, there is no involvement of a medical physicist, and last but not least, not all practitioners performing higher dose diagnostic or even radiotherapy procedures have had specialized education and training. These challenges, along with the lessons from human medicine tell us that, in general, radiation risk awareness, knowledge, skills and protection culture need to be improved in veterinary practice.

“Diagnostic radiography is the main source of occupational exposure in veterinary practice. In general, effective doses to individuals should be low, because they arise essentially from scattered radiation. However, poor practice may result in the unnecessary exposure of extremities, if for example, assistants hold animals in position while the radiograph is being taken.” UNSCEAR 2008

Most radiologists, internal medicine clinicians, and [emergency and critical care] clinicians had a poor understanding of the amount of ionizing radiation associated with medical imaging procedures and the potential hazards to their patients.” Gregorich et al 2018 JAVMA 252:1133

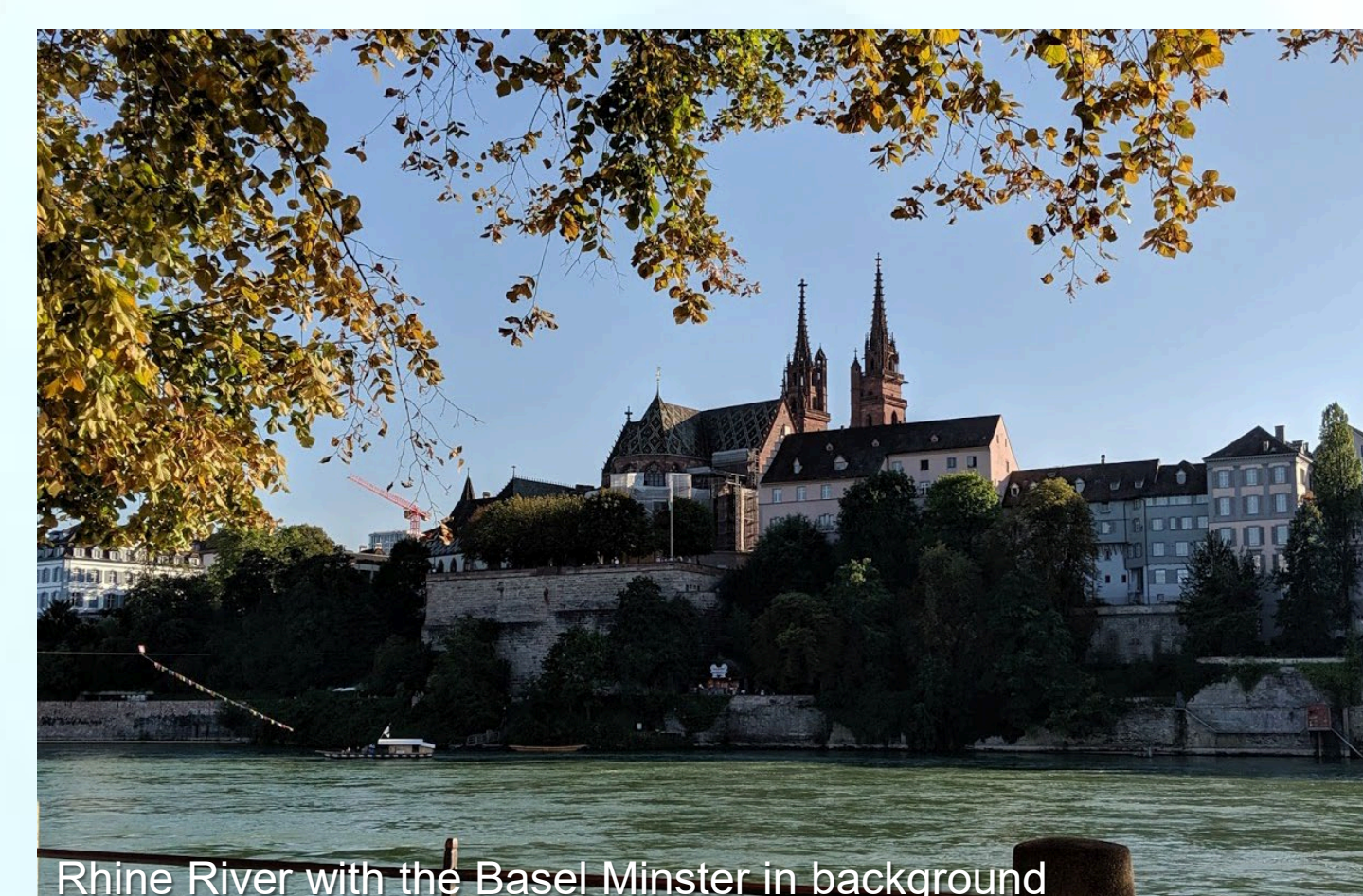
Task Group Activities and Membership



TG 110 Meeting at the Dorint An de Messe Hotel

First TG meeting held in Basel, Switzerland, August 2019

- ✓ Presentation at European Veterinary Diagnostic Imaging meeting
- ✓ Meet with leadership of European College of Veterinary Diagnostic Imaging
- ✓ Review of Terms of Reference and ICRP publications to model the report after
 - TG 110 report a primer in RP in veterinary practice
 - Novelty of TG 110 report in addressing RP of the animal patient and potential impact to environment
- ✓ Brainstorming session; development of details in the proposed table of contents
- ✓ Meet with Swiss Radiation Protection Authority
- ✓ Review of path forward; writing assignments for mid-October with potential next meeting at IRPA 2020



Rhine River with the Basel Minster in background

Membership



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MARTINEZ
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