

Free radiology dissertation topics

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This post was contributed by Casey Roberts, who is a student and also writes for Radiology Assistant. Radiology Assistant helps students find the right radiology degree.

1. 0. Introduction to Radiology

Radiology is the branch of medicine that uses radiographs to produce images of the human body in order to diagnose and treat ailments. Although radiology exclusively meant x-ray in the past, there are now many different types of radiology imaging used in medicine. Radiology dissertation topics can discuss new areas of technology, why the old ones are still relevant, or even a pro and con list of two or more types of radiology imaging. Below, we have more topics of interest to those writing a radiology dissertation.

2. 0. Types of Radiology

2. 1X-ray

2. 1. 1 The history and evolution of the x-ray since its first inception in 1895.

2. 1. 2 To what extent are x-rays still useful today, and will there ever be a day when they are no longer needed.

2. 1. 3 Madam Curie and the x-ray. Her curiosity to see how the beams worked in conjunction with radiation led to some amazing discoveries along with her death. Is the scientific venture worth sacrificing your own life for?

2. 1. 4 Use of x-rays for diagnosing conditions in the skull.

2. 1. 5 Use of x-rays to diagnose chest illnesses such as lung cancer, heart issues, and others.

2. 1. 6 How new developments in x-ray technology could effect the future, such as x-ray use in nanospectroscopy.

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2. 1. 7 Application of x-ray technology beyond medicine, such as the use of the Chandra X-ray by NASA used to take images of space.

2. 2 Fluoroscopy and Angiography

2. 2. 1 How is the use of fluoroscopy and angiography superior/inferior to the use of x-ray?

2. 2. 2 What are the advantages and diseases that can be best treated by fluoroscopy and angiography along with their outcomes.

2. 2. 3 What are the dangers of iodine use in fluoroscopy and angiography.

2. 3 Computerized tomography (CT)

2. 3. 1 Production of human organ systems from use of computerized tomography and their applications.

2. 3. 2 Production of three dimensional maps of human organs through the use of CT scans.

2. 3. 3 Use of CT scans to discern brain patterns for analysis, such as those in the mentally ill or who have dementia.

2. 3. 4 Growth of single-photon emission computed tomography to map blood flow and its uses in various diseases and conditions.

2. 3. 5 Use of CT technology beyond medicine in areas such as the environment, veterinary health, and even the geophysical.

2. 4 Magnetic Resonance Imaging (MRI)

2. 4. 1 How the use of MRI contrast agents can be improved to better develop images.

2. 4. 2 Use of MRI to diagnose intracranial hemorrhage for better patient outcomes.

2. 4. 3 Use of MRI to map out cardio functions to better diagnose conditions and plan surgeries.

2. 4. 4 Cost vs. effectiveness of use of MRI scanning vs. a cheaper but more limited imaging such as ultrasound.

2. 4. 5 The rise of MRI guided procedures as well as the benefits and shortfalls

2. 4. 6 Size of MRI machines, why they need to be so big, how they could be reduced in size, or increased in opening to accommodate larger patients.

2. 4. 7 Claustrophobia and the MRI machine: which patients should and should not be forced into one.

2. 5 Nuclear Medicine

2. 5. 1 Use of radiopharmaceuticals in nuclear medicine and their dangers.

2. 5. 2 Analysis and comparison of agents used in nuclear medicine such as Iodine-123, Iodine-131, Gallium-67, Technetium-99m, and Thallium-201.

2. 5. 3 How nuclear medicine and CT scans can be used in tandem to produce better results.

2. 5. 4 Advantages and disadvantages of using positron emission tomography for use in detecting cancer.

2. 5. 5 Benefits and risks of nuclear medicine on items such as diagnosing, patient safety, and cost.

2. 5. 6 Disposal of nuclear medicine waste: the proper ways to be done, ways it can be recycled, and danger to the environment.

2. 5. 7 Cost of producing nuclear medicine agents and technology vs. the benefits

3. 0. Other Radiology Topics

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3. 1 Difference between careers in radiology from doctor of radiology, radiology technician, radiology assistant, nurse, etc.
3. 2 Use of radiology beyond diagnosing diseases and into items such as delivering drugs, guiding surgeries, etc.
3. 3 How radiology can be used in the diagnosis and treatment of stroke.
3. 4 Why hasn't imaging technology in radiology kept up with imaging technology in personal photography with features such as digital images instead of film, smaller machines, lower costs, better results, etc.