

## ***22.01 “Introduction to Ionizing Radiation”***

### ***Term Paper Instructions***

#### **Goal**

The goal of this exercise is to make this paper more than a report on a topic. The objective is to apply your skills in critical analysis to a claim or a controversy in the popular press, web sites, scientific literature, etc. about some aspect of ionizing radiation.

#### **Project**

- (1) Try to find some controversial aspect of ionizing radiation: its use, effect, perceived danger, etc., in the lay press, on the web or in the scientific literature.
- (2) Proceed to the scientific/medical literature (e.g., PubMed) to evaluate the extent to which the claims made about the particular aspect of ionizing radiation have been studied.
- (3) By October 12, present the topic to Prof. Coderre by email with several sentences of description. The topic will be approved or suggestions will be made for modifying or changing the topic.
- (4) By November 16, submit a one paragraph abstract of the topic and a list of about five citations from the primary scientific literature.
- (5) By December 7, prepare a ten page (double-spaced) paper in the following format:
  - a) Title page containing project title, and a 100 word abstract.
  - b) One page background section describing the topic and the controversy.
  - c) A 6-8 page section discussing the claims from both sides and the scientific/mechanistic basis for the claimed effect. This section should summarize the evidence, e.g., from *in vitro* studies, studies in animals, or any available human data. The major emphasis here should be on critical evaluation of the competing claims and the literature studies.
  - d) A 1-2 page discussion and statement of your conclusions. Do you agree with the claims made for or about ionizing radiation? Explain. Critically evaluate the claim and evidence in the literature to support or refute the claim.
  - e) Reference list complete with title of the article, authors, publication year, journal name, volume and page numbers.

#### **Deadlines**

October 12	Topic selection due
November 16	Abstract with reference list due
December 7	Final paper due