

## Physics 290 – Winter 2004

### Final Paper Outline and Suggestions

The paper is due April 23, 2004

The final paper will cover a biomedical/technology subject in the spirit of the course. The paper should be a scholarly work, total 10-15 pages long, and include a bibliography of references and cited literature. Most papers include figures and equations. The average depth of the paper is at the level of a general review article such as those published as overviews in Nature and Science, though some students have based their papers on a number of current research articles, and a few have presented original work and thinking.

The following outline is an example of the structure and some details of a successful paper on **New Technologies for Breast Imaging**.

#### Outline

##### I. Introduction

- Breast cancer incidence and mortality - age groups

- Current role of breast imaging

- Limitations of current techniques

- Value of new techniques - early detection (sensitivity)/reliability (specificity)

##### II. Why current techniques are limited

- X-radiography - resolution (size of lump) what is resolution and why is it limited

- Dose

- Cost

##### III. New techniques

- Lasers - how it works/advantages/disadvantages/cost(?)

- Ultrasound - ditto

- MRI - ditto

- etc.

##### IV. Conclusion - future possibilities

##### Bibliography

Note: web sites provide a lot of useful information, but are often not useful scholarly references. For one thing, they are not “reviewed” for accuracy, and they often disappear. Many sites do provide citation instructions or refer you to actual publications. See [http://www.mla.org/publications/style/style\\_faq/style\\_faq4](http://www.mla.org/publications/style/style_faq/style_faq4) for some guidelines.