EE145B Discussion Section 2/22/02

1. What is nuclear medicine? How is it performed (very generally)?

2. What is nuclear medicine actually imaging? How do the isotopes know where to go?

3. How does the particle emission method differ between PET and SPECT?

4. Explain collimation in SPECT and PET.

5. Explain scattering issues with respect to PET and SPECT. How do they show up? Can we deal with them?

6. Explain differences in how attenuation is handled in PET and SPECT.

7. What is the idea behind Chang's method?

8. How does the energy of the photons in PET and SPECT compare, and how does that affect the imaging?

9. Which is more sensitive, PET or SPECT? Give a few reasons why.

10. How do the half-lives of typical isotopes in PET and SPECT differ, and how does that affect imaging?

11. Discuss the issue of dosimetry.

12. If PET is has such better resolution, why do they still do SPECT scans?

13. What is a projection? Draw an object and its projections.

14. Describe the filter used in filtered backprojection and qualitatively why is it that shape?