Post-Lecture #12: Nuclear Imaging I

1. You were recently hired into a nuclear medicine department, despite your therapy background. Unbeknownst to you, there is a hazing ritual in the department: you are grilled about every machine present —how convenient for me! Their first question is:

   Explain the differences between gamma cameras and SPECT machines in terms of their construction AND resultant images.

2. "Wrong! Wrong! More Wrong! Let's try an easier question: Which of the following can do functional imaging? Gamma Camera, SPECT, PET."

3. "Wow, it's not looking good! How did they hire you?! You know photons are highly penetrating, so why do we put collimators on these detectors (GC, SPECT)? Do we even use collimators? If you, for *some* reason, think we use collimators, what kind?"

4. "Alright, bucko, last question, but it's not from us!" They wheel in a small, bald child, most likely undergoing chemotherapy. The child prompts you with the following statement, and proceeds to give a Victorian-esque tiny cough after:

"Please explain to me the difference between SPECT and PET. Also, which radioactive nuclide will I most likely be injected with for either? It's ok if you do not know PET very well, you are new to this, like I am!"

After answering their questions, the child leaps out of their wheelchair and exclaims: "You fool! You fell for my dastardly trick! I am actually not sick at all! And your answers were actually good, but we wanted you to feel bad because we are evil!"

Your villain arc begins.