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**University of Pennsylvania School of Medicine**

**Department of Medicine**

**Division of Endocrinology, Diabetes and  
Metabolism**

# Did the training work for you?

## MY GOALS

- **Physician-scientist**
- **Career in medical research, patient care and teaching**

## MY TRAINING

- **Basic Medical Science: Univ of London, The Midd'x Hosp Med Sch**
- **Intercalated Science- Endocrinology and Developmental Biology**
- **Mentors: R.P. Gould and P.N. Campbell**
- **Principles of scientific investigation; ? Idea; ? Questions; ? Approach; ? Innovation**
- **Dissertation: “Development of mouse adrenal cortex”**
- **Steroid biochemistry; light and electron microscopy; mouse physiology and genetics**
  
- **Clinical Clerkships (University of Ghana)**
- **Housestaff training in Medicine (University of Ghana)**

- **PhD- Neuroscience; Tulane University; Richard Harlan**
  - **“Corticosteroid action in the brain”**
  - **Neuroanatomy; neurochemistry; steroid chemistry; behavior; rat**
- **Internship & Residency in Medicine; Albert Einstein, NY**
- **Research and Clinical Fellowship in Endocrinology, Diabetes & Metabolism; Beth Israel Deaconess Medical Center, Harvard-Longwood Program**
  - **Mentor: Jeffrey S. Flier**
  - **“Neuroendocrine regulation of weight and metabolism”**
  - **Adipocyte hormones; neurochemistry; mouse genetics and physiology**
- **Instructor in Medicine, Harvard Med Sch; BIDMC**
  - **Leptin, synaptic plasticity and obesity**
  - **Supported by Pfizer Inc**

# Career development in a clinical department?

- **Clinical department is a logical home for physician-scientist, in regards to medical investigation, clinical care and teaching**

## **Impediments:**

- **Confusion about triple role of physician-scientist**
- **Lack of department and institutional commitment and dedicated resources**
- **Hiring and promotion of physician-scientist does not reward years in training, knowledge and potential for development into independent researcher**
- **Academic institutions are still focused on the “lone investigator”, and have less regard for collaborative qualities inherent and necessary for successful physician-scientist career**

# My Duties at Penn

- **Laboratory research (90%)**
- **Clinical: Endocrinology attending; Obesity clinic**
- **Research administration: Director of Penn Diabetes Center Mouse Metabolic Phenotyping Core (10%)**
- **Graduate Programs in Cell Biology & Physiology, Pharmacology, and Neuroscience**
- **Administration: Committees; co-director of Obesity Unit of the Institute for Diabetes, Obesity and Metabolism**

# How I would restructure MD/PhD program

- **Candidates with strong science and math background and pre-med laboratory skills to be selected after 2nd year of medical school. Provides basic science framework for disease definition, pathophysiology and therapy**
- **One year research focused on lectures specific to research area, laboratory skills and research principles**
- **MD/PhD selection to be based on knowledge of basic research area, concepts, maturity, innovation and technical and overall research skills**
- **Cap duration of research training: preferably 3 years; maximum of 4 years!**
- **Research thesis: emphasize novel ideas, focused questions, feasibility of methods, and peer-review of research**
- **MD/PhD degree should be truly a combined degree administered and awarded by the School of Medicine (not Graduate School)**
- **Only faculty who agree with philosophy and time table of a combined MD/PhD degree would participate**