

The career of a physician-scientist – why you should go for it!

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Research

Clinical Care

Education


Disclaimer

- The opinions expressed in the presentation are solely my own



- **The vanishing clinician scientist**
- **The young aspiring clinician scientist**
 - Pitfalls to avoid
 - Suggestions



- **Physician scientists are first of all doctors seeing patients.....**
 - **Why?**
 - **They approach a problem from the perspective of the patient**
 - **Not all physicians are cut out to be researchers**
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Examples of prominent clinician-scientists



Judah Folkman



Alexander Fleming



Thomas J Fogarty



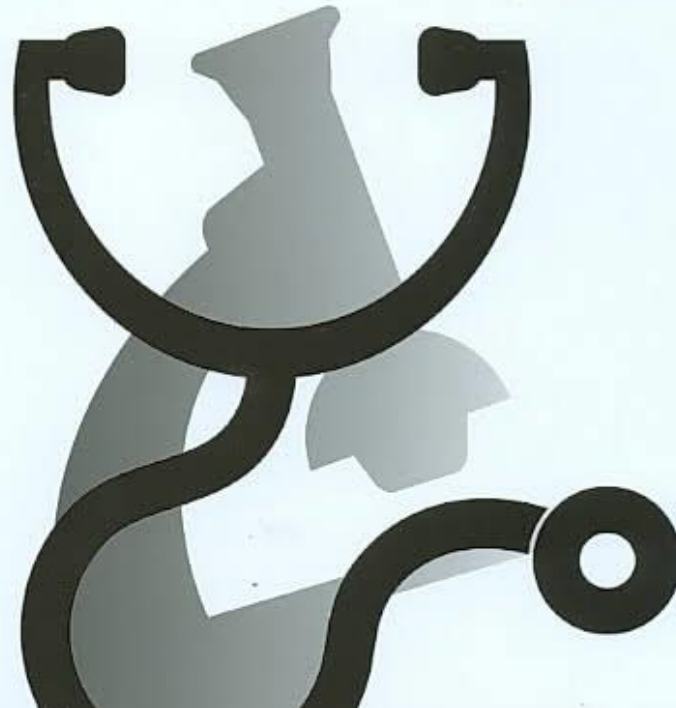
Otto Warburg

As for Fogarty's educational background, he was not a top-notch student, and his original career goal was to be a boxer. "I wasn't a very good kid. They sent me to a camp to keep me out of trouble. One of the routine activities was boxing


The Vanishing Physician- Scientist?

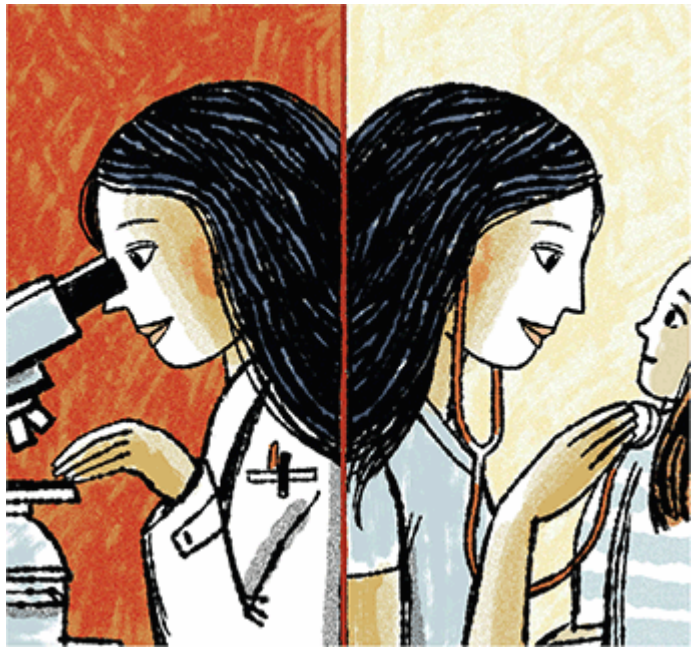
Edited by

ANDREW I. SCHAFER, MD



Why?

- **Different training skillsets**
 - **Knowledge accumulating in both fields at astonishing rate**
 - **Competing interests in career development**
 - **Economical/family considerations**
 - **Limited grant funding**
 - **Discouragement from healthcare leadership**
- 



No one had mentioned that I would feel that my clinical and scientific lives were constantly dueling for my time. Working in the lab after leaving the hospital meant less time to prepare for medical rounds and shelf exams, yet preparing more for rounds meant not completing the experiments I needed to earn my Ph.D.—not to mention finding time to relax, sleep, and catch up with family and friends.

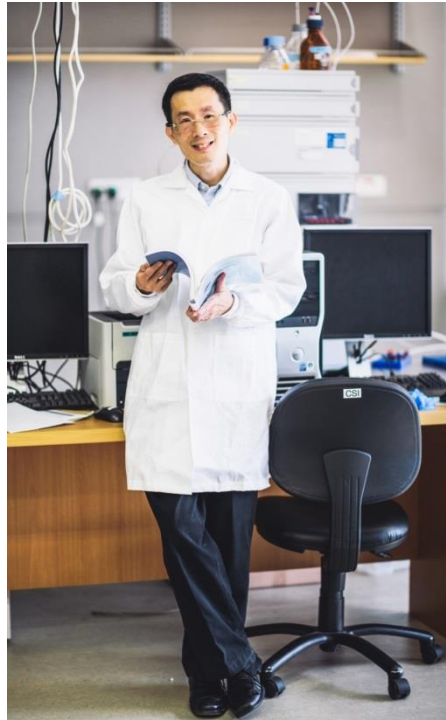
Jessica Tsai The MD PhD double agent
Science Vol. 350, Issue 6266, pp. 1434

Multiple competing roles

Medical Oncologist

Head and neck
Lung cancer

Experimental
Therapeutics lab at CSI



PI and co-I of phase I/II
cancer clinical trials

Core Laboratory of drug analysis/
Pharmacokinetics/
pharmacogenomics

Deputy director of CSI
NUHS IMU director

Head of department of Hematology-Oncology

**Department of Hematology-Oncology
National University Cancer Institute, Singapore**

STAR



TA



Senior CSAs



A dramatic, low-key photograph of a dirt road stretching into the distance at night. The road is illuminated by a single, bright lightning bolt striking the sky directly above it. The surrounding landscape is dark and appears to be a field of tall grass or crops. The overall mood is ominous and unpredictable.

CS route is too tough and unpredictable



**“Difficult roads
often lead to
beautiful
destinations.”**

Find good mentors



John EL Wong
Isabel Chan professor
In Medical sciences
CE, NUHS



Mark J Ratain
Leon Jacobson
Professor of
Medicine
University of
Chicago
Director, Center for
Personalized
Therapeutics
Associate Director
for Clinical Sciences,
Comprehensive
Cancer Center

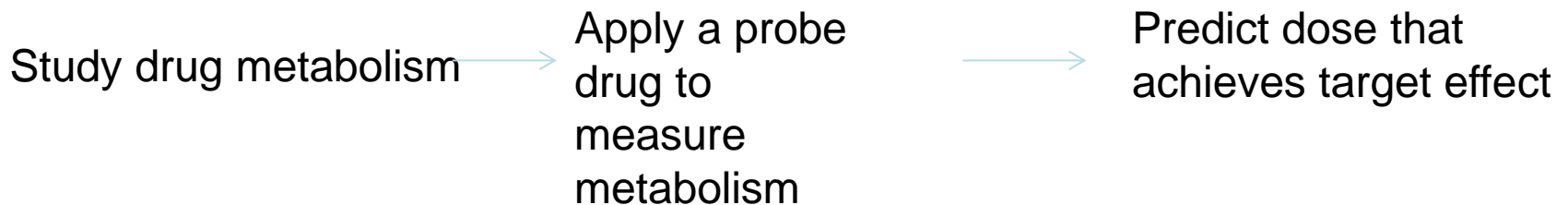


Everett Vokes
John Ulmann Professor of
Medicine
Physician-in-Chief,
University of Chicago
Medicine and Biological Sciences
Chair, Department of Medicine

Be observant and persistent

Geographical and interethnic difference in drug effect

- Docetaxel is more toxic but yet more effective in East Asians
- East Asians are more sensitive to warfarin
- Doxorubicin seems more toxic to East Asians



Explaining Interindividual Variability of Docetaxel Pharmacokinetics and Pharmacodynamics in Asians Through Phenotyping and Genotyping Strategies

By Boon-Cher Goh, Soo-Chin Lee, Ling-Zhi Wang, Lu Fan, Jia-Yi Guo, Jatinder Lamba, Erin Schuetz, Robert Lim, Hong-Liang Lim, Ai-Bee Ong, and How-Sung Lee

Accept rejection as the norm



NAH, THEY DON'T BOTHER ME.
I HAVE VERY THICK SKIN.

© Rodney Hudson 2002


**THERE ARE OVER
7 BILLION PEOPLE ON EARTH**




**AND YOU'RE GOING TO LET
1 PERSON RUIN YOUR DAY?**

DON'T.

Be adaptive and nimble but stay focused

- **In research, interests may rapidly change**
 - **Be ready to use your skills from a different angle**
 - **Think outside your comfort zone**
 - **Leverage on others with unique skills and technology**
- 

My M.D.-Ph.D. training was incredibly grueling, extremely humbling, and so very rewarding. The best part is that so much more learning lies ahead. The tools and training I gleaned from earning a Ph.D. have allowed me to think critically; to question everything; and to be industrious, innovative, and flexible. Medical training has equipped me with the capacity to make astute medical decisions, emphasizing the importance of teamwork, empathy, and humanism. And now, I have found peace with this duality. The patients and families I take care of motivate and inspire me. They remind me every day why we need more physician-scientists who can identify important and frustrating clinical questions, find creative solutions in the laboratory, and ultimately improve patient care by bridging science and medicine.



Jessica Tsai MD-PhD double agent

When?



You don't have to be in a formal research program to engage in research

