10 Things That I Learned to be a Successful Researcher

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From Bench to Bedside: Research Training Course
Johns Hopkins University School of Medicine

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Outline

1. Know your strengths
2. Be original
3. Pick the right project
4. Be persistent
5. Learn from others
6. Do what you love
7. Don’t pick your job for money
8. Write, write and write
9. Ask NOT for advice
10. Be optimistic
1. Know Your Strengths
What Are My Strengths?

- You may think you know what you are good at, but you are usually wrong.
- You can perform only from strengths.
- You cannot build performance on weaknesses, let alone on something you cannot do at all.

Peter F. Drucker
1909-2005
How to Discover Your Strengths

FEEDBACK ANALYSIS

Whenever you make a key decision or take a key action, write down what you expect will happen

9-12 months later, compare the actual results with your expectations

Drucker PF. Managing Oneself
I Know My Strengths, Now what?

- Improve your strengths
  - Identify and eliminate bad habits that hinder the full development of your strengths
  - Figure out what you should do and do it
  - Finally, decide what you should NOT do

- Don't waste your time trying to improve your weaknesses!
  - It will take you far more energy to improve from incompetence to mediocrity than to improve from first-rate performance to excellence
2. Be Original
Originality = Courage

- If people don’t think you are crazy, you’re not trying hard enough.
- Don’t do what someone else is doing. Do what no one is doing.
- Innovation is a new solution to an old problem.
- Innovation occasionally results from connecting and combining non-obvious ideas from different fields.
3. Pick the Right Project
There is always something for everyone in medicine

- Follow your heart - Pick a project for fun
- A good question is difficult to answer
- However, a question that is difficult to answer is not always a good question
- “It has never been done before” - not necessarily a good problem
4. Be Persistent
Failure is Part of Life

- I have not failed. I’ve just found 10,000 ways that won’t work. (Thomas Edison)

- If you’re not occasionally failing, you are not aiming high enough (Clayton M. Christensen)
TERMINATION OF MALIGNANT VENTRICULAR ARRHYTHMIAS WITH AN IMPLANTED AUTOMATIC DEFIBRILLATOR IN HUMAN BEINGS


Mirowski et al, NEJM 1980

- The bumps in the road are not bumps, they are the road
- Do not give up, do not give in, and beat the bastards

Michel Mirowski 1924-1990
5. Learn From Others
Nothing Comes Out of a Vacuum

- Surround yourself with people smarter than you are.
- If you are the smartest person in your group, you will never grow smarter.
- Discuss your ideas with everyone in your group and get feedback.
- If everyone in your group thinks the same way, it's time to move on.
6. Do What You Love
If you want to be happy, you must have a dream

- If you don't have a dream, you don't have a goal
- If you don't have a goal, you don't have a plan
- If you don't have a plan, you don't execute
- If you don't execute, you don't have outcomes
- If you don't have outcomes, you don't have joy
- If you don't have joy, you are not happy
That’s just the easy part!

- Goals are very important, but...
  - The process is as important as the goal itself
  - If you don’t enjoy the process, you will feel miserable ALL THE TIME

- Examples:
  - If you don’t love your boyfriend/girlfriend, don’t get married
  - Research is not a means to an end, but an end by itself
Who are Physician-“Scientists” Anyway?

- Physician-Epidemiologist
- Physician-Engineer
- Physician-Biologist
- Physician-Chemist
- Physician-Physicist
- Physician-Mathematician

Majority

Translational Science

Minority

Pure Science

Clinical Science

Basic Science
FIELDS ARRANGED BY PURITY

MORE PURE

SOCIOLOGY IS JUST APPLIED PSYCHOLOGY
PSYCHOLOGY IS JUST APPLIED BIOLOGY.
BIOLOGY IS JUST APPLIED CHEMISTRY
WHICH IS JUST APPLIED PHYSICS.
IT'S NICE TO BE ON TOP.
OH, HEY, I DIDN'T SEE YOU GUYS ALL THE WAY OVER THERE.

SOCIOLIGISTS  PSYCHOLOGISTS  BIOLOGISTS  CHEMISTS  PHYSICISTS  MATHEMATICIANS

http://xkcd.com/
What is \( \pi \)?

- Mathematician
  “It’s the circumference of a circle divided by its diameter”

- Physicist
  “It’s 3.1415927 ± 0.000000005”

- Engineer
  “It’s about 3”

- Biologist
  “What’s \( \pi \)?”
7. Don't Pick Your Job For Money
Money is important, but…

Salary

Resident Fellow Assistant Professor Associate Professor Professor

Modified with permission from Elliot McVeigh, PhD
You may not be as poor as you think.

Salary/
# of Dependents

Resident  Fellow  Assistant Professor  Associate Professor  Professor

Modified with permission from Elliot McVeigh, PhD
8. Write, Write and Write
What’s not written doesn’t exist

- Publish or Perish
- You must write your way though academia
- If you don’t enjoy writing, you may not like academia
9. Ask NOT for Advice
Talk is cheap, I mean, really cheap

- No one is free from personal bias
- Don’t expect to get the right advice from anyone for your specific problem
- Ask NOT for advice, but ask how they ended up where they are now
10. Be Optimistic
Don’t Worry, be Happy

- 90% of your worries will actually NOT happen

- Your fatigue is often caused not by work, but worry, frustration and resentment (Dale Carnegie)

- All we have to decide is what to do with the time that is given to us (J.R.R. Tolkien)
Summary

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Thank you!

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