



Calling to Be Your Best: Your Calling to Science

Young aspiring scientists face a serious question: Where will my education lead me? Who will I be ten years from now?

It seems that finding a satisfactory answer nowadays is much harder than, say, a few decades ago. Besides targeting a Research Scientist or a Professor position at a good institution, which may have been the dream of the past generation, many are deciding nowadays to leave the field of Science altogether. Talking particularly to those, who are currently making career decisions, I offer here some of my personal views and reasons that made me stay in Science.

Let me start with an experience I hope to share with almost everyone: reaching the peak of a high (or not even so high) mountain after a strenuous trek. Can you recall getting to the top, catching the fresh air and a wonderful view? You might have been tempted to turn around on the way when the going got hard, but you persevered, because you felt and followed an inner voice. This was your personal victory over the easy alternative not to even try, and it made it worth the trouble to get there. Even in a small way, you became a fuller person. Others will benefit not only from looking at the pictures you took at the top, but also from hearing about your struggles on the way.

To me, being a Scientist is quite similar to climbing mountains. One inner voice pulls me to the top and tells me that the hardships along the way are worth the effort not only for me, but also for others, who will follow. A different voice tells me that an easy life, fame and wealth can be achieved in a much more comfortable way. The choice is mine to make. So, why did I decide to climb the mountain and stay in Science? And . . . should you?

Let me note at this place my deep belief that each human has a unique set of talents. Only a few are gifted with the ability to critically judge the phenomena that surround us and to combine their findings in a comprehensive set of descriptions and laws that make up Science. If you believe this describes you, read on—I want to talk to you; you are a Scientist at heart.

I know of the struggle in your mind. If you are truly interested in Science, your friends may categorize you as a “geek.” They will impress you with likely wealth that you could accumulate with little effort and with much less

education. You may also be disappointed by scientific and academic institutions that value primarily marketable scientific results and pay only lip service to their primary mission as institutions of knowledge and education. You may wonder if most positions in Science are temporary and if you ever may provide solid financial support for a family. All these voices would tell you to leave Science.

Let me tell you from my own experience and from talking to others: if you are a Scientist at heart, nothing else will truly satisfy you. Wealth and power that impress others may temporarily impress you as well, but will not bring deep satisfaction. Throughout your life, without realizing it, your subconscious will be reminding you with a soft voice that you can make an impact in Science with the unique combination of your talents if you let them develop. Since your contribution cannot be replaced by someone else, this voice will be encouraging you to try, for the benefit of others and your own.

When you will look back at your past carrier at some later point in life, I wish that you feel fulfilled, because you followed the call of your heart. I wish that you do not have to realize, when it is too late, that your decision to leave Science for a guaranteed income and luxury has left you empty-hearted. Remember that wealth can be taken away from you; education and your own achievements can not.

I wish you can spend your life for something you truly believe in. If exploring the unexplored in the Universe—at whatever scale—fascinates you, then follow your dream. Set out on the way, your way, to the top of The Mountain, your mountain. Never mind that the mountaintop may be veiled in clouds; don't delay. You will need to carry your provisions on the long journey to the mountaintop: your education, the knowledge you acquire in the introductory courses. Nothing is unimportant, because you do not know, when you will need it. Besides providing you with the necessary tools you will need as a Scientist, these courses will also train and test your perseverance, shaping you as a person.

Since all Scientists have undergone similar training, you will find that most of them have similar attitude to Life and have a weak spot for Beauty in Nature and Art. You will find them to be kindred spirits, interested in sharing what they and what you are up to. Am I exaggerating? There are

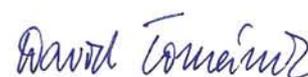
surely exceptions, but this has been my experience over and over. This is also how I feel as a Scientist and as a human.

I remember the observation of the bell boy operating the elevator at the Hilton Hotel in New York City, where the 1987 March Meeting of the American Physical Society took place. He said that we (Physicists) are strange. During other conventions, lawyers and business people talk in the elevator about their new cars, expensive houses or exotic vacations. Only we (Physicists), he remarked, talk about our research even in the elevator. He said that we must love it. And yes, we do.

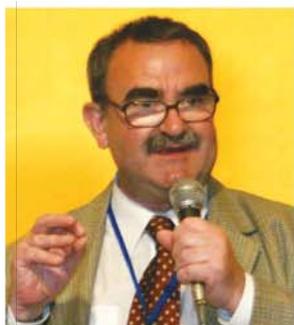
When making a career decision, I wish you may recall this bell boy's observation. I wish you decide for something you will learn to love. You will find that what eventually matters is not reaching the mountaintop, but your way up there. You will take a path that not many travel. This takes courage, because there are no guarantees. You will enjoy sharing the experience with fellow Scientists, whom you meet on your way. When encountering challenges, your integrity and honesty will be tested. Your stamina will be tested, when you cannot achieve a goal you set for yourself in spite of your best efforts. Others on the way

may disappoint you by exposing weaknesses such as dishonesty, jealousy and narrow-mindedness. Do not let this discourage you, because after all, Scientists are imperfect humans.

But all that lies in the future. Right now, clear your mind and decide if the way of Science is your way. If it is, take the right decision and get going. Your research results could bring hope to people suffering from an incurable disease or help us spend energy more efficiently. Maybe, your results will be appreciated only a generation or two from now. If you are a Scientist at heart, you will not regret choosing the less popular and harder way of Science. Whatever you will do, even if you do not notice, the good character you develop will be a shining example to others. If you are a scientist at heart, do not delay—the World needs you.



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David Tománek studied Physics in Switzerland and received his Ph.D. from the Free University in Berlin. While holding a position as Assistant Professor of Physics in Berlin, he got engaged in theoretical research in Nanostructures at the AT&T Bell Laboratories and the University of California at Berkeley. He established the field of Computational Nanotechnology at Michigan State University, where he holds a position as Full Professor of Physics. His scientific expertise lies in the development and application of numerical techniques for structural, electronic and optical properties of surfaces, low-dimensional systems and nanostructures. Since he was working on his Ph.D. Thesis, he promoted the use of computer simulations to understand atomic-level processes at surfaces and in atomic clusters. Witnessed in several hundred publications and invited talks are his results on the electronic structure, mechanical, thermal, and optical properties, as well as quantum conductance of nanostructures. His contributions to Computational Nanotechnology, in particular in the field of fullerenes and nanotubes, have been rewarded by a Fellowship of the American Physical Society, the Alexander-von-Humboldt Foundation Distinguished Senior Scientist Award and the Japan Carbon Award for Life-Time Achievement.