[Quotes and Lessons From] Letters to a Young Scientist Edward O. Wilson

[Annotation by Robert Moss]

"I urge you to stay on the path you've chosen, and to travel on it as far as you can. The world needs you—badly."

"Don't just drift through courses in science hoping that love will come to you."

(Listen to your passion and aim towards it)

"I finally got around to calculus as a thirty-two-year-old tenured professor at Harvard,... I swallowed my pride and learned calculus."

(Don't be afraid to go back to the fundamentals)

[On Newton's discovery of white light comprising of all colors]

"Scientists were later to understand, from other experiments and mathematics, that the colors are radiations differing in wavelength."

(Lead with insight, the math/theory can follow)

"Most of the stereotypical photographs of scientists studying rows of equations written on blackboards are instructors explaining discoveries already made."

(Research is often viewed in its final form—don't forget the messiness of discovery)

...a real scientist is someone who can think about a subject while talking to his or her spouse about something else."

(Step away from the computer to let your mind work in the background)

"...acquire needed collaboration ... "

(Reach out, discuss ideas, be vulnerable with your work—do not hoard ideas)

"...it is wise to look for [a problem] that is sparsely inhabited."

(Find your niche—don't simply follow the trends)

"...forty hours a week for teaching..."
"...ten hours for continued study..."
"...at least ten hours in research...[drawing] on experience from your student years..."
"...seize every opportunity to take sabbaticals...[allowing] stretches of full-time research."
—"Take weekends off for rest."—

"No vacations...[but take] temporary research fellowships in other institutions."

"...[apply] your knowledge to another discipline not yet exposed to it."

(Seek out interdisciplinary collaboration—it's a win-win)

"Quick uncontrolled experiments are very productive."

(Spend the two hours trying an idea—instead of wasting months proposing it)

"...there will be a temptation...to build a career in the new technology itself rather than to make original studies that can be performed with it."

"...use but don't love technology."

"The love of a subject...is meritorious^{*} in itself."

"Deep ignorance, when properly handled, is also superb opportunity."

(A fresh, naive perspective could be exactly what you need)

"The right question is intellectually superior to finding the right answer."

(Do not lead with the solution, understand and study the problem intently the solution (if any) may become clear; the contribution could be the study itself) "In science every answer raises more questions...in science every answer creates *many* more questions." "...in research define a problem as precisely as possible, and choose if need be the one or two partners needed to solve it."

(Be clear about your problem and be open to collaboration)

"...successful research doesn't depend on mathematical skill, or even the deep understanding of theory. It depends to a large degree on choosing an important problem and finding a way to solve it, even if imperfectly at first."

(Properly motivate your work and ask for as much feedback along the way)

"Very often ambition and entrepreneurial drive, in combination, beat brilliance."

"Honest credit carefully given matters enormously."

- Edward O. Wilson

"If you're not sure of a result, repeat the work."

(i.e., try more RNG seeds)

"...remember that you enter a career in science above all in the pursuit of truth." \Box

Edward O. Wilson, "Letters to a Young Scientist", 2013. [Annotation by Robert Moss | 2022]