



... the simple mental and physical rest of even brief forays away from science can recharge your professional batteries ...

Take the Time to Smell the Roses?

Her grandmother had died. She would have to travel abroad for the funeral, missing nearly a week of lab in the middle of her second year of graduate school. When asked, her very accomplished (and not very sympathetic) thesis advisor emphasized that she would need to get serious about science if she ever intended to complete her degree, let alone build a career.

She went to the funeral. She switched laboratories. She completed her Ph.D. and started her own career. However, she still wonders if scientists really lack seriousness about science when they take time to love, to grieve, to enjoy interests outside science, to share life with others ... to smell the roses.

What Roses, Exactly?

As a cell biologist you are intent on building a full-time professional career using your science.^{1,2} But maybe...

- You want to have a child, or maybe three.
- Your family needs you right now to be a caregiver, just at the time when you need to focus on getting tenure (or establishing yourself as a team leader in industry).
- You feel like you need time for playing your violin, or writing poetry.
- You need time to read and reflect, or to climb Mount Everest, or to give back to those who helped you make it this far.
- Or...

Taking the Time

Maybe you think you have no time for roses. Yet, the simple mental and physical rest of even brief forays away from science can recharge your professional batteries; renewed energies allow more efficient efforts.

All work and no play make Jack a dull boy. The same is true for Jill. You know it's important to feel like a whole person, and you will probably be more effective in all you do if you are not too narrow in your perspective.

I think that taking the time to relax and to recreate always pays off in science.

We are too competitive, and we tend to measure accomplishments with the length of our CVs and the size of our labs (sound familiar?). Instead we should measure success by creative contributions, and I don't think we can be creative or take risks if we are stressed or playing the numbers game.

We need to take time for ourselves, time to think, time for recreation.³

Smell-the-Roses Outcomes

But you too may wonder, Will my institution and other scientists really take me seriously if I incorporate time to smell the roses?⁴ Yes, especially when you bring "smell-the-roses" outcomes to your science!

• **The intangible insight:** These often come when you're focused upon something other than science. Remember, Archimedes was in his bathtub when he suddenly had his insight explaining the physics of water displacement. (See Bowden et al., 2005, *Trends in Cognitive Science* 9, 322–328, about the "aha" effect.)

One colleague, a dedicated runner, explains that, while running several years ago, she suddenly had an insight about how the many pieces of her confusing data fit together to explain transcription promoter escape. She ran home fast to write it down before losing the unexpected vision! She has been testing that model and has included many correct features of it in her recent papers.⁵

• **Management and teamwork skills:** *My interest in theater pays off when I lecture.*⁶ You can oftentimes enrich your research efficiency by improving how you work with others. One venue is in activities outside science. And by sharing your professional interests with your non-science comrades, you can improve your communication skills about your science too!

• **Risk taking:** One author of this article (CK) remembers how she learned to take scientific risks from white water boating experiences: Frightened in the turbulent waters but confident in her skills to survive, she realized that pushing the envelope in hypothesis testing was not only acceptable and exhilarating, it was essential to making new discoveries.

• **Coordination, concentration:** *I believe the high level of coordination required for playing musical instruments [viola and piano] helped me master microinjection of cells. In addition, you have to concentrate really hard when practicing—which is really important for science (listening, writing, doing experiments). Also, bringing up children teaches you to multi-task—very important as a group leader.⁷*

Smelling the Roses

What “roses” do active successful scientists “smell?” A wide variety. With enthusiasm! They make time for these roses:

- **Family:** *I have a family and two small children—twin boys, 5-1/2-year-olds. I take time to “raise them”—I mean, play with them, read to them, teach them, cook with them, go to their school, and read stories or do experiments with them.*⁸
- **Travel:** whether for a daytrip or an extended vacation planned months ahead of time
- **Sing**
- **Ride motorcycles:** *It's the only thing I do where all other thoughts are displaced and I focus on the ride.*⁹
- **Ride horses:** *Show my horse in dressage.*¹⁰
- **Play golf**
- **Meditate**
- **Fly**
- **Volunteer:** *Work with the American Indian community.*¹¹
- **Read**
- **Write**
- **Attend the theater, concerts**
- **Garden**

We take the scientists interviewed very seriously. They take their roses seriously. So work hard, play hard. And in the meantime, put roses in your office and take the time to smell them.¹² ■

—Caroline Kane and Sue Shafer

References

- ¹Academia, industry, federal lab, intellectual property lawyer, YOU name it!
- ²Equally desirable, but sufficiently different to be the subject of a separate discussion is the cell biologist who chooses to defer her (or his) career progression to devote all, or a substantial portion of, her (or his) time to a different cause.
- ³Sandra Schmid, Scripps Research Institute, WICB member, and Editor in Chief, *Molecular Biology of the Cell*
- ⁴Insert your own favorite smell-the-roses vision when working on this question.
- ⁵Lilian Hsu, Mt. Holyoke College
- ⁶Susan Forsburg, University of Southern California, and WICB member
- ⁷Anne Ridley, Ludwig Institute for Cancer Research, London, and ASCB Council member
- ⁸Cory Abate-Shen, University of Medicine & Dentistry of New Jersey—Robert Wood Johnson Medical School, and WICB Junior Award Winner
- ⁹Kerry Bloom, University of North Carolina at Chapel Hill, and ASCB Council member
- ¹⁰Pat Leake, University of California, San Francisco
- ¹¹David Burgess, Boston University, and ASCB Council member
- ¹²The authors would like to thank the many ASCB members who responded to questions for this article and Richard L. Shafer for valuable comments and editorial assistance.

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