



Learning Protocols for Leadership

When starting a new project or applying a new method, scientists usually go to the literature to learn from experienced experts. In some cases they will attend or send their students to one of the excellent methods courses taught, for example, at Cold Spring Harbor (New York), the Marine Biological Laboratory at Woods Hole (Massachusetts), or the European Molecular Biology Laboratory in Heidelberg, Germany. This ensures that the new method is incorporated into the lab's tool chest and optimally applied as quickly as possible. Why waste time re-inventing the wheel? However, when it comes to nonscientific techniques, which are equally critical for success, including managing a laboratory, motivating others, negotiating start-up packages or manuscript revisions, "marketing" your grant applications and manuscripts, strategic planning, project planning, decision-making, etc., we tend to believe that these skills are instinctive.

It's true that most successful scientists eventually figure out how to run their labs. However, this often requires a long learning curve during which many mistakes are made. Moreover, I'm not convinced that many of these labs are run in an optimal fashion. Sadly, it's also true that many excellent young scientists have not been successful in developing sustainable research programs, despite their scientific expertise.

In 2007 I learned that the University of San Diego offered a Master's of Science in Executive Leadership (MSEL) degree program, run in partnership with the Ken Blanchard Company. This latter fact caught my attention because a cell biology department chair I know once told me that he gives every new faculty member in his department a copy of Ken Blanchard's *One Minute Manager* as a starting gift. The program, aimed at "transformational leadership," was focused on the "soft skills" essential for leading individuals, teams, and organizations.

When I mentioned my interest in the program to my colleagues, most were surprised.

What could I possibly learn that I didn't already know, having run a laboratory for almost 20 years and a department for seven? Others were even more skeptical, suggesting that labs can't be run like businesses; so what could possibly be learned from business school academics and successful business leaders? Ignoring their advice, I enrolled, and two years later received my MSEL degree.



Sandra Schmid

Were the two years of coursework, monthly homework assignments, heavy reading load, and hefty tuition fees worth it? Absolutely yes! Have they changed how I run my laboratory and made it a better, more productive, and more innovative, environment? Absolutely yes! Now, when I talk about the program, my colleagues invariably ask, what were the most important lessons you learned? Well, here are the

top three:

1) Appreciate and Leverage Our Differences

Each of us is different. We are extroverts/introverts, detail-oriented/big-picture thinkers, decisive/thoughtful, risk-takers/careful, patient/impatient, impulsive/methodical; all combinations and everything in between. I have learned not only to be aware of these differences, but also to reap the many benefits of differing personalities, approaches, and perspectives. The student or colleague who quietly listens often has an idea that's as good or better than the one dominating the discussion. Worse, because often the one dominating the discussion was me, I tended to suppress new ideas and differing opinions, reducing the chances for innovation. I've improved my ability to listen and actively provide opportunities to hear all points of view.

As individuals, we also have different goals and passions. Some want careers in academic research, others to work in biotech or pharma. Some want to teach, others to write. One of my students went to Washington, DC, to work for a senator and advocate for science. The prerequisites and training objectives for success

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in these different endeavors are not the same.

In well-run businesses (and these are no more frequent than well-run labs), the best employees are considered high performance or high potential. High-performance employees are self-motivated and self-directed. They contribute valuable, sometimes specialized, skill sets to teams. What distinguishes high-potential employees is that they aspire to be CEOs and therefore must become proficient at a broader set of skills to lead diverse teams and move up the organizational hierarchy. Academics, as have businesses, must adapt to the reality that the hierarchy is pyramidal. Thus, we must motivate our students and provide them with opportunities for success both horizontally and vertically. While every PhD student and postdoc has the ability to be a high-performer, not all need or want to be high-potential, at least with regard to academic research. Given this diversity, what are the relevant goals for individual success? Surely they are not the same for everyone.

What about the future? While individuals are contributing specific research skills to a team, can we provide these high-performance individuals with opportunities to obtain other skills needed for success in other careers? I've begun to do this in my lab, creating teams of young scientists who are highly motivated and highly productive. The individual team members are each contributing, while advancing along their chosen career paths. Once again, taking advantage of these differences allows my lab to build teams that advance our common scientific objectives more efficiently.

2) Apply Different Leadership Styles to Different Situations

Not only is every trainee different, but trainee competencies and confidence levels, which determine levels of motivation and independence, also vary depending on the task at hand. "Situational Leadership®" is a method developed by the Blanchard Company. It assumes that we invariably pass through four levels of development, albeit at different rates, when

approaching a new task. One of four different leadership styles, which vary in their degree of directive vs. supportive behaviors, is best suited to each development level. Briefly, trainees new to a task (Level 1) are typically enthusiastic and thus don't need encouragement, but they are unskilled. They need a more directive leadership style. The best way to demotivate a young graduate student, or even a new postdoc, is to discuss his or her project in broad strokes and then send the individual on his or her way with no specific instructions (i.e., now is not the time to delegate!). One needs to meet with new lab members frequently (daily) to discuss experimental details and give specific directions and/or to partner them with more senior lab members.

At intermediate stages of development, when young researchers invariably encounter unexpected problems, they will need lab heads to be more supportive and encouraging. Successful leaders (e.g., lab heads, teachers, managers) need to listen more to concerns. It's at this stage that lab heads and professors can begin to learn from students what their career goals and objectives are, and then to tailor their projects, contributions, and team membership to these specific goals. Young researchers still need lab heads to go over details and to give specific suggestions. However, this should now involve more of a dialogue than a monologue; you're their coach. Independence is often granted too early and is therefore demotivating. It's a myth that scientists need to struggle on their own to be successful. Once true competence is acquired, it's time to challenge that senior student or postdoc with new tasks, like training new lab members and heading teams: now you can delegate writing papers and grants. Importantly, when it comes to writing papers and grants, students and postdocs will again need specific instructions (for example, help in developing an outline) as these are new tasks and they're back at Level 1.

3) Sharing Protocols for Success

As stated above, most successful scientists eventually figure out how to run their labs. It

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then becomes instinctive. However, just like riding a bike, while it might become instinctive, you had to learn how to do it, and you probably crashed several times along the way. Not once in my training period did my graduate or postdoctoral advisors explain to me the thought processes they went through to make decisions about which results to pursue, which paths to abandon. We never talked about the strategy behind when and how to assemble a paper, or deciding where to submit. We never discussed innovation or where good ideas come from. While I enjoyed being part of research teams, both as a graduate student and a postdoc, we never talked about shared credit and responsibility, the added value and benefits of teamwork, or the rules that must

be followed to build and sustain an effective team. The protocols for all of these essential aspects of success in science are largely unspoken and unwritten. The ASCB is helping to overcome this shortfall with its Women in Cell Biology Career Discussion Tables and Mentoring Roundtables and with its “Discovery/Conversations” session at the Annual Meeting in December. Discovery/Conversations provides an opportunity to hear several young but well-known researchers describe exactly this learning process. Last year’s session, which can be viewed online (www.youtube.com/watch?v=KefOp3HrwHA), featured me and two Nobel laureates discussing our choices and pathways to successful careers.

In contrast, business school academics, especially those who study leadership, have analyzed and described proven methods for running successful businesses. They have created a rich literature, full of practical, applicable

information on decision-making, creating learning and innovative environments, building high-performance teams, strategic planning, negotiating, goal-setting, etc. Although the language spoken is typically aimed at the business setting, it is readily translatable to the scientific laboratory. I’ve listed three of my favorite books in this regard below. I would argue that learning these “protocols” is as important to success as any laboratory technique.

I now frequently discuss these protocols with my lab members, individually and at special group meetings on innovation, negotiation, risk assessment and decision-making, strategic planning, and deciding what to work on. I believe these discussions have equipped my lab members with the skills to enhance their success and hence my lab’s success. They certainly have been motivating and empowering.

I encourage those of you who “instinctively” run effective laboratories to think about what’s working and to pass on this experience, more explicitly, to your lab members and your junior colleagues. It’ll save some scraped knees, and everyone will get to where they are going faster. ■

Comments are welcome and should be sent to president@ascb.org.

Recommended Reading

- *The One Minute Manager* by Ken Blanchard and Spencer Johnson
- *Leadership and the One Minute Manager* by Ken Blanchard, Patricia Zigarmi, and Drea Zigarmi
- *Good to Great* by Jim Collins

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