

Learning to Love Leading Your Lab

By Karen Elkins

One day, you're a postdoc, minding your own business, responsible only for making progress on your projects. The next day, you're the PI, and there are 3 people at your door with evidence of failed experiments and discarded hypotheses in hand. They all have the same question: "now what do we do?" Or, you're about to start your first lab meeting. It seemed so simple when your old boss ran it, but now the gang has gathered and fallen respectfully silent, and their trusting faces are looking expectantly at you for words of wisdom. Feeling caught in the headlights, maybe?

Your lab members are, of course, asking for leadership. That elusive quality wasn't part of the screening for aptitude in science, nor was training on the topic anywhere to be found in the graduate school curriculum. But it's so important that Thomas Cech, professor of chemistry at the University of Colorado, former president of the Howard Hughes Medical Institute (HHMI), and Nobel Laureate has said, "If I had one piece of advice to give it's that although you've been hired for your scientific skills and research potential, your eventual success will depend heavily on your ability to guide, lead, and empower others to do their best work" (1).

Defining Leadership

The question arises immediately as to what really defines leadership. There is a something of a "you know it when you see it" aspect to it, and seemingly as many definitions as there are writers of books about business practices. Wikipedia's version, citing M. Chemers, defines leadership as "the process of social influence in which one person can enlist the aid and support of others in the accomplishment of a common task" (2). That complements the HHMI formula, which considers requirements for leadership to be creating a vision, then building relationships to accomplish tasks that in turn fulfill the vision (1).

It's also useful to consider what leadership is not. Mentoring, obviously a very important responsibility of PIs, is generally individual, while leadership is more often collective and communal. Wielding raw power, whether derived from your appointment as the boss or from recognition of your authority as an accomplished scientist, is a distinct (and thorny) concept as well. Constructive leadership does not result from the destructive tendencies that are the stuff of Dilbert columns ("mushroom managers" keep everyone in the dark while heaping manure on them; "seagulls" fly in, poop everywhere, and then fly off without cleaning up). Moreover, while you're the boss and responsible for attending to the bureaucratic details of operating the unit, true leadership obviously goes well beyond mere management. Indeed, in the wonderful Nature essay on the philosophy of science exemplified by Vincent Wigglesworth, Lawrence and Locke note that Wigglesworth considered "administration...im-

measurably easier than research;" they themselves disdain the "new cult of management which puts administrators at the top of a hierarchy, confusing management with leadership" (3).

Learning to Lead

"Leaders are born, not made." We've all heard that platitude. However, abundant evidence indicates that it is a myth. Originally, theories of leadership revolved around the idea that leaders share common, innate character and personality traits. This simplistic idea has long since been replaced by a wide variety of leadership theories that are informed by hard data. Most of these systems focus on a leader's behavior, not personal charisma (although a dynamic personality can help).

Correspondingly, it is well accepted that quite a few different kinds of behavior (i.e., leadership styles) can be equally effective. In fact, it appears desirable for leaders to adopt different styles for different circumstances or for different subordinates. That said, it's also worth noting that many, particularly the business and leadership writer Warren Bennis, have identified certain common traits such as integrity, dedication, magnanimity, humility, openness, and creativity (4). Notably, while tendencies toward each of these traits might be innate (humility, creativity), each is really a behavior that can be nurtured.

Over fifty years ago, Kurt Lewin performed classic work that defined three main types of leaders based mostly on decision-making approaches: autocrats, who make decisions without regard to team input (helpful in emergencies, such as battles or when the building is on fire); democrats, who seek subordinates' input but make the final call, usually trying to accommodate at least the majority if not forge consensus (useful when team members need context and motivation for their role in the team); and laissez-faire leaders, who essentially delegate most decisions to the team members themselves (appropriate when team members have specialized expertise that the leader lacks. A quick quiz to help identify your approach can be found at <http://psychology.about.com/library/quiz/bl-leadershipquiz.htm>. Notably, each style has strengths and weaknesses, but none is considered better than the other; instead, moving between styles according to circumstances may be ideal.

Another quite distinct and well known leadership theory is described by the Blake-Mouton Managerial Grid, which rates potential leaders from low to high on the basis of their concern for production (e.g., data, publications, and knowledge), as well as on the basis of their concern for people (e.g., training, mentoring, and empowering those in the lab; see <http://www.nwlink.com/~donclark/leader/matrix.html> to try rating yourself). The two resulting ratings divide leaders into four types with catchy descriptors: the impoverished leader (low on both production

and people), the “country club” or “socialite” leader (low on production, but high on people), the “produce or perish” leader (those low on people and high on production), and the Team Leader (aha! high on both production and people). As you’ll no doubt gather by the verbiage, this theory considers the latter to be the style to shoot for.

I mention the examples above, out of seemingly millions of such theories, in part because they’re commonly known, have stood the test of time, and have some support for validity from actual data. More importantly, these have fairly obvious applicability to traits and styles. These may be useful to consider as you develop your skill in directing a scientific research group. Importantly, each points to behaviors that can be learned and developed. There are a wealth of sources for learning and stimulating the thought processes, including the references cited below.

Leadership, Gender, and Loving the Process

Much has also been made about potential differences between women and men as leaders, and I won’t presume to step into the noisy debate as to whether one gender or the other makes “better” leaders. On the latter topic, a fascinating 2005 study by Caliper, a management consulting firm, has received considerable attention and may be particularly informative for scientists. The study used standardized personality assessments to compare about 60 successful male and female leaders of major U.S. and U.K. businesses. Their analyses found four attributes that distinguished successful women leaders (5):

- Women leaders are more persuasive than their male counterparts.
- When feeling the sting of rejection, women leaders learn from adversity and carry on with an “I’ll show you” attitude.
- Women leaders exhibit an inclusive, team-building leadership style of problem solving and decision-making.
- Women leaders are more likely to ignore rules and take risks.

All of these concepts are worthy of highlighting for scientists (of any gender) whose goal is to direct a team toward creative, productive scientific discovery. Better yet, all underscore how one can find enjoyment and satisfaction from learning to direct successful outcomes. The broader point is that is no matter what your personality inclinations, you can (and should) work at developing useful traits, and learning effective strategies to lead. A little bit of effort to educate yourself on this fascinating subject will go a long way. Armed with fresh ideas, you can then think critically about how to maximize your strengths and minimize your weaknesses, and become the leader that, deep down, you always knew you could be. ■



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References

- Howard Hughes Medical Institute/Burroughs Wellcome Fund. (2006). *Making the right moves: a practical guide to scientific management for postdocs and new faculty*, 2nd edition.
- Chevy Chase, MD: BWF-HHMI.
- <http://en.wikipedia.org/wiki/Leadership>.
- Lawrence, P. A., & Locke, M. (1997). *A man for our season*. *Nature*, 386, 757 – 758.
- Bennis, Warren. (2003). *On becoming a leader*. New York, NY: Perseus Books.
- Caliper Corporation. *Qualities that distinguish women leaders*. (2005). <http://www.calipercorp.com/brochures/Women-LeaderWhitePaper.pdf>.

Putting it all together: three simple strategies for leading your lab

Lead by example and expectations

Set the expectations and standards of your lab more through your own behavior than by edict. Illustrate rigor in experimental design and analyses in the projects you take on personally; demonstrate impeccable ethics in all interactions and activities; continue your education vigorously, including reading the literature voraciously; reward honesty over sheer results; value time spent teaching and helping others as much as time spent at the bench; put in the hours necessary to really be productive; take the same risks, intellectual and physical, that you ask those in the lab to assume.

Lead with empathy

Remember the Golden Rule: celebrate accomplishments, professional and personal; commiserate with setbacks and outright failures; watch carefully for informative changes, positive and negative, in work habits, behavior, and mood; ask discretely about thoughts and feelings, but ask nonetheless; listen before talking.

Lead through enthusiasm

Start the day cheerfully; project an optimistic outlook; react to new data, new insights, and new ideas with joy and applause; diffuse conflict quickly, with tact and humor; lighten up, and laugh out loud; be quick to praise in public as well as in private, and very slow to blame (only in private); challenge instead of criticize; cheerlead unceasingly.

munity to pathogenic intracellular bacteria, and reviews Investigational New Drug applications for bacterial vaccines. For some reason she hasn’t quite figured out, in her lab, women tend to outnumber the men (probably to the dismay of the latter). When not obsessing about something related to work she enjoys classical music, margaritas, and trying to keep two stubborn Welsh corgis under control.