Project Management, Part I: Goal Setting

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All of us know goal setting is important, and we're undoubtedly goal-oriented individuals. However, understanding how to set goals effectively is crucial for a number of reasons. First, personnel, money and time are finite resources. It is dangerous to squander them in projects that cannot be translated into papers or new grants, or that are inconsistent with one's career development mission or the core values of a lab. For these reasons, before identifying goals it's critical to address a more fundamental question: what is your mission? What are your values? What is most important for you to accomplish, either as a trainee or group leader? Where do you want your career or research program to go in five years or longer? Understanding these key points allows you to develop goals that are consistent with the

wider context of your scientific interests, expertise, and available resources. They also allow you to move beyond simply ‘doing more and faster’ and instead establishing clear priorities that make the best use of finite resources.

In the project management world, the acronym ‘SMART’ establishes the criteria for effective goal setting strategy, based on goals being Specific, Measurable, Attainable, Relevant and Timely. Operationally, in the business world these criteria are often addressed in a project charter that is agreed upon by the individuals performing the work, the sponsor and the project manager. In the science world, some but not all criteria are explicitly addressed in specific aims pages and timelines for grants. It’s therefore important before starting a project to explicitly address how to identify and set goals. Let’s examine what each of these attributes means:

Specific: A goal of ‘I want to be a PI someday,’ ‘I want to finish my PhD in five years’ or ‘I want to be head of a hematology division’ are certainly valid goals, but they are not particularly specific, in part because a lot of different moving parts are contained therein which are hard to address. More granularity is better: ‘My goal is to establish whether [scientific hypothesis here]’ or ‘My goal is to improve my comfort level with public speaking before I give my talk at ISEH.’ Identifiable, addressable steps can be employed to address these goals. In addition, developing specific goals helps prevent ‘scope creep’ whereby you dilute your efforts into other work that doesn’t contribute to your career objective.

Measurable: It seems obvious, but you have to have some sort of framework for measuring whether you are on your way to achieving your goal, and whether you have achieved it. For a scientific project, key means of measuring progress can be related to addressing project aims with experimental data or generating deliverables such as abstracts and manuscripts. Career goals can be measured based on acquisition of knowledge, successful coursework, and the like. In all cases, key waypoints for measuring progress should be established for your project so you know where you are at all times.

Attainable: Again it’s obvious in principle but not always in practice. A goal of publishing ten papers during a five-year postdoc is likely not attainable if the scope of work for each paper will take two years with 100% effort, while requiring a budget equivalent of two large grants. The throughput simply isn’t there to make such a goal attainable. Likewise, giving a new student a large three-aim project outside of the lab’s expertise and expecting it to be completed at the end of the student’s training may not attainable. Along these lines, grant applications are often critiqued as being ‘overambitious,’ which is another way of saying that the project goals are unlikely to be achieved within the constraints of time, budget and available personnel effort. When developing a research program or large grant, it becomes critical to parse it out into manageable pieces. Some projects or aims will be ‘long’ or ‘short,’

some ‘cheap’ or ‘expensive’ in terms of personnel effort or cost. Understanding and identifying the key elements for each project, and how much cost and effort is required to achieve them allows goals to be set accordingly and expectations to be managed properly.

Relevant: A goal of ‘I want to eat eighty kilograms of cookies before the end of my PhD’ is a goal, but it is entirely irrelevant to your mission of career success or addressing a particular scientific problem unless you’re studying the impact of high-fat diet on hematopoiesis (even then it’s probably not worth it). Certain goals may actually represent an inappropriate expansion of project scope that could dilute effort or lead a project astray from what a sponsoring agency, mentor or academic organization expects to be done. It is critical to continually re-evaluate whether new ideas or scientific directions are consistent with your mission, expertise and resources. If not, the goal may be better suited for a different project or filed away until it becomes relevant based on a change in mission or project scope. In other words, don’t get overly distracted with shiny things. Make sure focus is maintained, and manage the scope of your work by regularly re-assessing whether your goal is relevant to your mission, values and career arc.

Timely: This is a particularly crucial aspect of goal setting given the finite nature of money, personnel and time. A goal needs to be realistically bound to a timeline for completion. Deadlines need to be established and importantly, agreed upon by the individuals working on the project. They should not be overly generous, but they also shouldn’t be unrealistically short. Parsing goals into monthly, quarterly, and yearly waypoints is a good way to achieve a granular ability to measure progress, assess shortcomings and reassign resources as needed. Many grant funding agencies require a timeline; these shouldn’t be simply an afterthought. Instead, they should be carefully considered and used as an opportunity to realistically assess whether a project can be completed on time, and at what intervals to measure progress and assess needs.

In the next post, we’ll explore how to develop project timelines and priorities based on your goal-setting strategy.

Eric M. Pietras, PhD
Assistant Professor, Division of Hematology
University of Colorado Anschutz Medical Campus
Aurora, CO