HHS Public Access

Author manuscript

Circ Res. Author manuscript; available in PMC 2020 February 15.

Published in final edited form as:

Circ Res. 2019 February 15; 124(4): 484–487. doi:10.1161/CIRCRESAHA.118.314611.

Cardiovascular Leaders Are Made, Not Born

Sakthivel Sadayappan, PhD, MBA

From the Heart, Lung and Vascular Institute, Division of Cardiovascular Health and Disease, Department of Internal Medicine, University of Cincinnati, Cincinnati, OH

Abstract

This article continues my previous thread examining early career viewpoints and turns the discussion to leadership training in the academic and pharmaceutical industries. Specifically, I will examine the characteristics of good leadership and leadership training required to succeed as a cardiovascular researcher in today's competitive workplace.

Keywords

leaders; change; innovation; early career; cardiovascular research

Leadership is as much a set of personal qualities and skills as it is the act of leading a group of people or an organization. In organizational settings, leadership is often learned through systematic training or mentoring that culminates in a defined skillset honed through many years of experience. While training, hard work, and dedication are important for developing these skills, a personal proclivity toward leadership cannot be discounted. Innate qualities, such as compassion and understanding, intuition, and a forward-looking attitude, can often be the intangibles that distinguish a successful leader.

A specific type of leadership is required in academia and even more so in the field of cardiovascular sciences. Fast-paced technological advances are proving increasingly challenging and require rapid adjustments to ensure that the necessary leadership training is current and available. A leader in cardiovascular sciences must be able to bridge the many challenges involved in treating heart disease in clinical settings and translating basic science research discoveries made at the bench to effective treatments bedside.[1] Importantly, academicians who assume leadership roles must also navigate the complexities of the business world. They may find themselves in roles where they are managing finance and budgetary issues, as well as governance. Additional roles may concern aspects of policymaking and include regulatory issues and time-sensitive reporting obligations. Academic institutions, medical centers, and Big Pharma expect employees at all levels to assume leadership responsibilities to keep the organization moving forward. At the same

Correspondence to Sakthivel Sadayappan, PhD, MBA, Division of Cardiovascular Health and Disease, University of Cincinnati, 231 Albert Sabin Way, Cincinnati, OH 45267, USA. Phone: +1 513 558 7498; sadayasl@ucmail.uc.edu.

Conflict of interest

Dr. Sadayappan has provided consulting and collaborative services to AstraZeneca, Merck and Amgen unrelated to the content of this manuscript.

time, minimal formal leadership training is available for postdoctoral fellows, clinical fellows in training, and early career professionals in many settings (Figure).

I speak now to those in the early stage of their career who aspire to leadership roles. If you start preparing now, I predict that you will become a leader one day. Therefore, the critical questions you must ask yourself now concern the type of leader you want to be and how you expect to attain that goal. In today's cardiovascular field, we have all seen, heard of, or worked with true leaders who can "*make things happen*," but do so with equanimity and humility. On the other hand, everyone is also familiar with "*ephemeral leaders*" who are popular, rise rapidly within a group, become successful for a time, but then fall and disappear from sight. When I was an early-career researcher in Cincinnati, I was inspired and motivated by several key leaders in the cardiovascular field. First was Jeffery Robbins, PhD, Cincinnati Children's Hospital, who at that time was Director of the Division of Molecular Cardiovascular Biology. He founded the Heart Institute, subsequently becoming its Co-Director and Director. Today, Children's Hospital is ranked number 2 nationwide, and the Heart Institute has over 800 employees. Similar stories are true for leaders such as Litsa Kranias, PhD, University of Cincinnati (UC); John Solaro, PhD, University of Illinois at Chicago; and Richard Moss, PhD, University of Wisconsin at Madison. Each of these professionals has brought a unique set of leadership styles, skills, and attitudes to bear on the most intractable issues in cardiovascular science. All of these leaders share some common characteristics, which I will outline in the next section.

Characteristics of an Effective Leader

Set Clear Goals and Priorities, Follow Ethics and Be a Team Player:

All leaders are obligated to state and meet long-term goals. For example, Drs. Christine Edry Seidman, Leslie Anne Leinwand, and James Spudich have spent their entire lives studying the disease mechanism(s) underlying the onset of hypertrophic cardiomyopathy (HCM). These scientists, especially physician scientists like Dr. Seidman, are directly translating their basic and clinical research into therapeutics tested in clinical trials to treat patients, thus setting a model for all of us. After setting forth goals and developing an effective framework of activities designed to accomplish them, a good leader must harness human, as well as material, resources in a manner that achieves those goals. My own lab, for example, focuses on HCM. We are now engaged in determining compound genetic variants responsible for causing HCM among South Asian descendants. As PI, directing our recent American Heart Association Cardiovascular Genome-Phenome Study, I reached out to the South Asian community, explained the purpose of our research studies, recruited a cohort of subjects, set a target number of samples per month to collect, and changed the priorities of clinical and genome analyses based on the need. Finally, the cardiovascular scientific field is replete with rules and regulations. Therefore, a strong sense of work and professional ethics is essential for a leader who must navigate the field while maintaining compliance at all levels.

Attack Problems with Grit and Determination:

True leaders have the ability to find, or even imagine or intuit, solutions to the intricately complex problems that abound in the realm of cardiovascular sciences. Determination is an

essential leadership quality, and systematically ferreting out solutions is crucial to success. Determination and resilience are often predominant traits of NIH- funded researchers. Experiments frequently do not present the expected results, but confident leaders, who know themselves, will persevere, perhaps even opening up new research directions along the way.

Be Methodical and Practical:

Leaders grounded in realism can foresee and plan for future difficulties. It may be ironic, but such leaders can use constructive criticism in this process. Consider, for instance, the peer/grant review process, which frequently involves multiple rounds of revision. Leaders who take the long, practical view will also take the necessary incremental steps toward making the necessary improvements. For example, when Dr. Roberto Bolli took on the leadership of *Circulation Research* as Editor-in-Chief in 2009, his mission was to transform the journal and take it to the next level. During his ten years of leadership, he has reached his goal, producing an unprecedented improvement in the quality of the journal and raising the impact factor from 9.504 to 15.211 so far (with further likely increases). This was accomplished not by incremental refinements, but through a series of visionary changes in content, editorial operations, style, and focus that have set *Circulation Research* apart from all other cardiovascular journals.

Reward Doers and Expand Capabilities:

Leaders can guide a group toward solving a complex problem within a defined time line. Leaders establish the priorities and involve themselves in every aspect of the group effort to see that a project comes to a successful conclusion. Such success is founded on the principle of rewarding others for the good work they do and empowering others to not only exercise, but also expand, their native capabilities. Through interaction and feedback, leaders identify instances of over- or under-promising and perform the necessary course correction. Leaders take note of strengths, weaknesses, and areas that need improvement in their students and fellows. Thus acknowledging the outstanding work of others and expanding their potential can form the basis for developing independence in the research arena. During an early career session, Dr. Steven Houser at Temple University once mentioned his strategy of adding more projects after every successful outcome to determine the breadth and depth of his fellows' abilities. Using this measuring stick, he could easily identify trainees' strengths and weaknesses, while encouraging them to expand their capabilities by continuously presenting challenges tailored to stretch capabilities.

Effective Communication and Management:

Leaders often speak from experience, but they also speak their mind. Effective communication is obvious when it comes to writing papers, applying for grants or making presentations. However, the exercise of clear communication is fundamental to building trust within a group and resolving problems in a timely manner. Clear communication requires coordination and interaction with other group members. A leader must never make overstatements or understatements, but rather stay within the boundaries of civility and mutual respect. It goes without saying that attaining optimal mutual understanding requires successful teaching, mentoring, and interpreting feedback and responding accordingly. An example of an excellent communicator is Dr. Ali J. Marian, a leading clinician and

cardiovascular scientist. He would reply quickly and immediately to any correspondence no matter what time or what he was doing. This is a highly important trait, allowing progress and decisions to be made in a timely and efficient manner.

If communication skills constitute the cornerstone of leadership, then management skills provide the bedrock of leadership and are essential to motivating individuals toward achieving a common goal. Whether running a laboratory, department, or a division, leadership requires organizational skills and a willingness to defer to institutional norms. Notably, a leader is expected to accept a certain level of personal sacrifice for the good of the organization. Leaders are barraged with roadblocks and failures, including hiring dilemmas and countless administrative snafus, on a regular basis. However, during such trying times, it all comes down to self-control and making the best of the hand you are dealt. Leaders overcome challenges and setbacks, and ultimately rebound.

A Charismatic and Transformative Leader Must Be a Visionary

Often, it is not what we say, but what we do, that leaves the true mark of leadership. The heart of the matter ultimately rests on making decisions and then acting on them. Some leaders make decisions based on thoughtful analyses; others go with their “gut” feeling. For instance, Dr. Eric Olson at UT Southwestern has said that he hires postdoctoral fellows based on his gut feeling and that he has been very successful using this strategy. When decisions finally lead to substantial structural changes involving labs, departments or entire institutions, it becomes a genuine test of courage. Visionaries must sell their ideas, execute decisions to initiate or terminate programs, or turn entire research regimes toward a different direction. To institute change productively, a leader must possess a special skillset that includes analytic expertise, dynamic presentation skills, and self-control.[2] Most of us take the safer route, wait to establish consensus, but then still require additional empirical evidence to slowly introduce new directions. In contrast, visionaries make their call, jump in, and act straightaway. This approach frequently drives discoveries and can revolutionize a field of study. In the cardiovascular field, change is a constant, and it behooves leaders to adapt readily to changes, even as they advance their own ideas. Over the past 20 years, we have witnessed an evolution within the cardiovascular field as various tools have become available, including, for example, genetically engineered mouse models, iPSCs, cardiac regeneration, microRNA, CRISPR/Cas-9, exosomes, or organoids. The field has made significant progress in genetic testing ranging from techniques such as PCR to next-generation whole genome sequencing. It is an ideal time for game changing strategies and for visionary leaders to make their mark. Thus, in this environment, we can expect the next generation of early-career cardiovascular scientists to take up the reins of leadership; therefore, it is critical that leaders today pass on the qualities and characteristics of leadership discussed above. Individuals who are emerging as leaders have already navigated through different troubled waters and sought training opportunities they believed were necessary to advance their careers in the cardiovascular sciences. These emerging leaders are just as passionate as the current generation.[3] Dr. Joseph Wu, Director of the Stanford Cardiovascular Institute, has revolutionized our understanding of cardiovascular disease mechanisms and has accelerated drug discoveries using human iPSC cells by conducting “*clinical trials in a dish*.” Such pioneering methods strengthen our ability to solve clinical

problems through basic bench science, in turn hastening the development of safe and effective treatment modalities that will ultimately find their way through the drug development pipeline into practical clinical applications. Imagine for a moment that someday we may perform research virtually, in the cloud, or remotely without needing conventional bench science setups.

Opportunities for the Next Generation of Cardiovascular Leaders

Leadership training is essential for all cardiovascular leaders, whether in healthcare or academic systems.[4] However, formal leadership education for fellows and trainees is essentially absent in academic settings. Strong and effective leaders who can advance already thriving organizations to the next level are in demand. Most academic institutions now provide training in grant writing and other basic skills needed for successful research, but little, or no, training is offered for building leadership skills. Leadership and management training could easily be integrated into formal coursework offered at the graduate level. Courses offering certificates upon completion should be readily available to postdoctoral trainees, medical residents, and those in their early careers. Additional opportunities include recruiting minorities to enhance diversity within the ranks of leadership.[5] Soon, more talented individuals from underrepresented groups can be expected to assume leadership roles as opportunities become available. The AHA and ACC understand these issues and have already taken steps toward providing leadership training courses for academic postdoctoral fellows and early careerists. For example, in 2016, the AHA Research Leaders Academy started providing annual leadership training for academic faculty. Last year, this training focused on team science, research challenges, time management, media reporting and the steps toward becoming an effective leader. Informal leadership “training” could even be found through volunteer opportunities. For example, I served as Chair of the AHA Basic Cardiovascular Science (BCVS) Early Career Committee. I now serve as one of the co-chairs, having the honor of working with Dr. Loren Wold and Dr. Jil Tardiff to organize the next two BCVS Scientific Sessions in 2019 and 2020. I found that such experience serves to bolster my administrative acumen, which has proven valuable in my role as Director of the Heart Branch of the Heart, Lung and Vascular Institute and Associate Chairman for Basic Research, Internal Medicine, at UC. Similarly, the NIH Office of Intramural Training and Education provides various types of leadership training from mid-level to executive level, but also provides training in workplace dynamics, teamwork skills, and diversity. Management boot camps are available and provide training in the management of people and resources, staffing issues, interpersonal interactions and teamwork. Additional training opportunities are available at all career levels at the Association of American Medical Colleges, and part-time executive management programs are available at almost all institutions. When I was a research instructor, I took leadership courses as part of the requirements for an MBA degree at the University of Cincinnati.

Leadership skills are an inescapable and essential part of training, no matter your particular academic discipline. Therefore, I strongly recommend that graduate students, predocs, postdocs, and faculty take advantage of any additional leadership training that promises to enhance independence in the institutional environment. Pay attention to mentors and role models. In addition to discovering a research niche, it is no less important to rise to a

position of leadership in a way that will advance your own career, as well as the study of cardiovascular biology.

Acknowledgments

Disclosures

Dr. Sadayappan has received support from National Institutes of Health grants R01HL130356, R01/R56 HL139680, R01 AR067279, and R01 HL105826; the American Heart Association Cardiovascular Genome-Phenome Study (15CVGPSD27020012) and Catalyst (17CCRG33671128) awards; and AstraZeneca, Merck and Amgen.

References:

1. Freeman AM, Nelson R, Sinha SS. The essential role of leadership development. J Am Coll Cardiol 2018;72:2272–2275 [PubMed: 30360832]
2. Fry ETA, Walsh MN. Cardiovascular health system leadership: An evolving model. J Am Coll Cardiol 2018;71:575–576 [PubMed: 29406863]
3. Sadayappan S Cardiovascular early careers: Past and present. Circ Res 2017;121:100–102 [PubMed: 28684620]
4. Holmes DR, Jr, Warnes CA, O'Gara PT. Effective attributes of mentoring in the current era. Circulation 2018;138:455–457 [PubMed: 30571526]
5. Kolehmainen C, Carnes M. Who resembles a scientific leader-jack or jill? How implicit bias could influence research grant funding. Circulation 2018;137:769–770 [PubMed: 29459461]

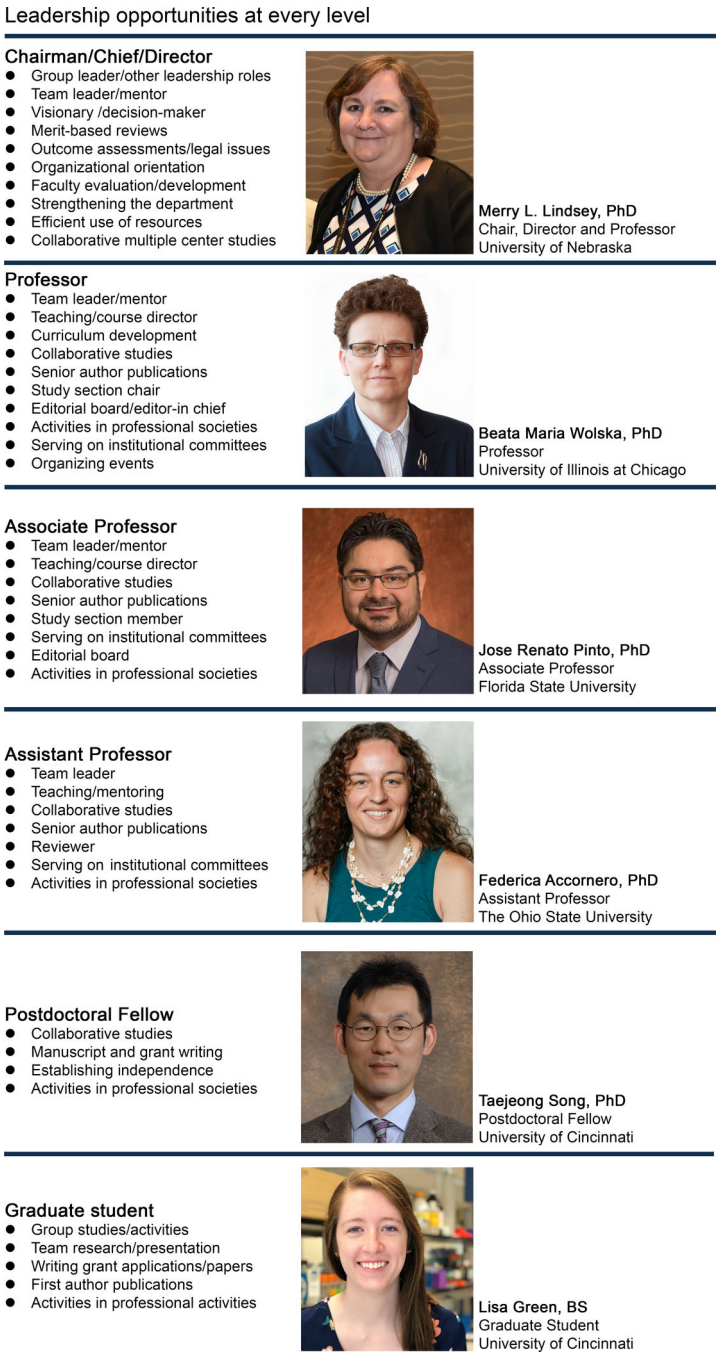

Figure.
Leadership training opportunities and active roles at various levels in academia