## 2019 Oriens Lecture: The yin and yang of life as a surgeon

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Thank you for the honor of the Oriens Lecture. I first want to congratulate Dr. Lisa Kodalek and Dr. Danby Kang as winners of the Oriens essay competition. You will hear their wonderful essays following my talk. Three powerful messages are delivered in their essays: (1) The importance of mentorship. (2) Their commitment to providing care to the underserved and the vulnerable patient. (3) Passion for what they do as surgeons. I will carry these important themes throughout my talk.

The importance of mentorship is clearly demonstrated by the three keynote lectures at our EAST meeting this year. I am so honored to give the Oriens Lecture. Dr Ochoa, who trained with me, was then my junior partner and has been a dear friend for three decades, is your Frame Lecturer. Our president, Dr Andrew Bernard, trained and worked in Dr. Ochoa's research laboratory during his tenure at the University of Kentucky. Thus, before you are three generations of academic surgeons, linked as mentors.

What we do is amazing. What we do is rewarding. What we do is difficult. The physical and emotional stress as care providers for the injured or critically ill patient is part of our lives. We then struggle to integrate these demands with those outside the hospital. This is especially challenging if we commit to partners and children. The balance required for a meaningful life is difficult for all of us. What we will discuss today: (1) The importance of passion and vision in our careers and lives. (2) Work-life balance. (3) Things that I wish I knew when I started my career 35 years ago. (4) Unanticipated rewards and challenges in what we do. (5) How to become a master surgeon.

The title of my lecture is "The Yin and Yang of Life as a Surgeon," emphasizing the need to find balance in our lives (Fig. 1). This concept of life balance to achieve harmony has been critical to the Chinese culture for millennia. Yin and yang are opposite, yet complementary energies—one cannot exist without the other—they are inseparable. Everything is interdependent and connected; a change in one component of yin or yang precipitates change within the system. When the elements of yin (work) and yang (life outside work) are in harmony, this results in contentment and health. Importantly, nothing within yin nor yang is absolute. The dots within each energy reveal that each side has an element of the other at its core. The soft curve, rather than a straight line, between yin and yang symbolizes each side pushing into the other, yielding to the other-further illustrating the interdependence upon each other. Yin (work) and yang (life) change constantly, necessitating adjustment to each other; balancing and rebalancing toward a state of harmony.<sup>1</sup> The ideal of harmony ("life balance") is a goal to which we aspire. Obligations at work may include patient care, writing grants or articles, research, teaching or administrative duties. Commitments in "life" are to our spouses/significant others, children, personal time, community, hobbies, and tasks at home. There is no correct set point for all of us to attain-it will be different for each of us. Importantly, Jack Welch stated that "There's no such thing as work-life balance. There are work-life choices, and you make them, and they have consequences."<sup>2</sup> Thus, work-life integration is the popular term currently, or work-life harmony as mentioned above and suggested by Stewart Friedman.<sup>3–6</sup> "Work-life balance is a misguided metaphor for grasping the relationship between work and the rest of life; the image of the scale forces you to think in terms of trade-offs instead of the possibilities for harmony."<sup>3</sup> The semantics are unimportant-however, the issues and concepts are vital to your happiness. You must decide which aspects of your lifeat home and at work-are your priorities. Failure to acknowledge and organize your competing work/life demands based on your critical priorities, as well as anticipating the consequences of your decisions, will result in stress, unhappiness and potentially burnout. In this context, personal time is critically important. You cannot successfully provide care over the long term for your patients at work or your loved ones at home, if you neglect yourself. We are all guilty of this, to varying degrees; poor eating habits, sleep deprivation, minimal exercise, and lack of time to think are inherent in our lives.<sup>7-10</sup> We first need to acknowledge these life habits and second, rectify them as much as we can within unavoidable constraints. Accruing a critical mass of partners is essential for this to happen. Daily personal time may be playing the guitar, running, reading, working out at the gym-whatever you do. But you must find time to protect these 30 minutes to 60 minutes (obviously not possible everyday) to clear your head, recharge your batteries, and be up for the next challenge. Play as hard as you work.

As a PGY-43, I want to share things that I wish that I knew when I started (Table 1). First, each of you will grow, transform, struggle and hopefully introspect and adapt to life's opportunities and challenges. Second, everything we "know" in medicine will change. At initial glance, this statement seems trite—let me put it in context. When I started as a resident we

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Figure 1. The yin and yang, balance in life.

did NOT have: the Internet, widely available computers, computed tomography, magnetic resonance imaging, laparoscopy in general surgery, endovascular surgery, robots, certificates in vascular surgery or surgical critical care, trauma center accreditation, or trauma systems. These changes were paradigm shifts in our practices. Similar, unpredictable, seismic changes will occur in your careers. It is vital that you are ahead of the curve and recognize and adopt these changes early—or even better, be the force driving the changes.

In 2019, the triple/quadruple threat is an urban legend. Admittedly, a few among us are exceptionally gifted and can attain this lofty goal. But these surgeons are uncommon exceptions; not mortals such as you and  $I.^{11,12}$  The quadruple threat was certainly the expectation when I began my career. The ideal surgeon was successful as (1) master surgeon; (2) educator, winning teaching awards; (3) researcher, with millions of dollars in grant support and publications in the most prestigious journals; and (4) the consummate administrator. Successful faculty members have come to me, feeling as failures because of inability to achieve all four goals. The evolving technology and tools and increasingly difficult cases in the operating room demand dedicated attention and practice. Basic science, expanding in quantity of information and complexity, now compounded by fewer research dollars available, cannot be a minor commitment. If you are extraordinary in one component of the quadruple threat, you are successful. If you excel at two components of the quadruple threat, you are an essential faculty member.

Although any one faculty member may not be a quadruple threat, your division must be. This quadruple threat team/division of the composite members, all passionate about their different roles, forms a powerful collective intelligence. Within your division must be master surgeons, well-funded researchers, master educators and outstanding administrators. To achieve this, your section chief needs to utilize the strengths and recognize the weaknesses of each individual faculty member; each faculty member's job description is different from the others. You and your chief, at least yearly, should generate and review your goals-which must support your strengths and passion. Make sure that you both agree to your job expectations and benchmarks. Your chief should also develop opportunities for the faculty members that may not be available elsewhere—in research, clinical care, international efforts, etc. As a chief, retention is more difficult than recruitment. These unique opportunities will help retain happy faculty. Along the same lines, if each faculty member plans to become your trauma medical director, you have a group of unhappy faculty, competing with each other (maybe not in a healthy, productive fashion). My faculty differ in vision, goals, career path and strengths-diversity is good. However, we share common core values-the importance of family, commitment to our patients and to each other, desire to serve the vulnerable and to make a difference in the world. Lastly, although we make great effort to care for each faculty member, we understand that the needs of the section supersede those of any individual-emphasizing the importance of recruiting faculty who fit well into our culture.

We have three families in our careers. The first family is obviously my spouse, children and extended family. I understood the importance of family from the moment I married and we added our children to our home. I anticipated that I would be close to my surgical partners, especially with so much time spent together. But I did not comprehend that I would be so close to this second family. I love my partners as brothers and sisters-working with them every day is a joy. Finally, I had no concept of a third family in my career. Friends become your patients and your patients become your friends. This has been an extraordinary reward which was totally unanticipated. We follow patients for decades after operations for colon cancer, breast cancer, or major injuries. Consider the enormous impact that we have on their lives and families. They will never forget younor will you forget them. You will attend weddings, funerals and other major milestones in the lives of your patients. In addition, the major victories and major defeats in your patient care are with you forever.

**Research is a team sport**. When I began my career, I attempted to start my independent basic science laboratory within a department without organized research infrastructure or research collaborators. When Dr Richard L Simmons became our chairman in 1987, he taught us that research was a team effort. He initiated research meetings 2 days a week, garnered center grants which involved researchers from all departments in the

## TABLE 1. What I Wish I Knew in 1984

- · Everything we know in medicine will change
- You need to play as hard as you work
- The quadruple threat is an urban legend
- · Research is a team sport
- We have three families (an unexpected reward)
- · The wisdom of the serenity prayer
- You need personal time (probably not golfing)
- · Major opportunities present from unexpected places
- · Medical care has become a big business

medical school and university, obtained funding to support research years for all surgical residents, and expanded laboratory space which was shared to maximize efficiency. The synergy of the sum of a research team is much greater than the total of individuals. As surgical care has become super-specialized, the available technology and rapidly expanding basic science knowledge, and grant dollars less available, this *team science* approach to research has been widely recognized.<sup>13–17</sup> These interdisciplinary teams are more likely to have a faster and greater impact than an independent researcher.<sup>13</sup> In addition, "Successful applications for NIH grants are highly likely to call upon the skills and insight of a team of researchers, and may include investigators at various stages of their career trajectories."<sup>14</sup>

Learn when to stand and fight and when to walk away. Never fight for turf, simply to obtain the turf. Always fight for better patient care. Learn that 90% of the "battles" at work are unimportant—do not engage. Discern the 10% of the "battles" that are important and challenge fully. This approach accomplishes two things. First, others at work will recognize that when you speak, the issue is important and they will listen. Secondly, you will be a much happier person. As the serenity prayer states, "God grant me the serenity to accept the things that I cannot change, the courage to change the things I can and the wisdom to know the difference" (attributed to Reinhold Niebuhr, 1932).

The imposter syndrome. "Never depend on the admiration of others. There is no strength in it ... Create your own merit." (Epictetus) Who has ever thought, "I must not fail," "I feel like a fake," "I am not good or smart enough to be in this program?" Have you ever set such high expectations that even when you met 99% of your goals, you felt like a failure? Have you hesitated to speak up or ask a question because you were afraid of looking stupid? Do you feel compelled to perform all tasks by yourself, convinced that asking for help is a sign of weakness? Do you attempt to outwork those around you to prove that you belong? I am certain that everyone in the audience has experienced these feelings at some point in their careers. This is the imposter syndrome.<sup>8,17-21</sup> It is a feeling of self-doubt and insecurity despite often overwhelming evidence to the contrary. Imposterism tends to strike smart, successful individuals (us), often after a major award or accomplishment. Imposterism, with the individual focusing on failing self-confidence and overemphasis of mistakes, produces psychological stress and anxiety.9,10 These recurrent feelings of inadequacy may lead to burnout.9,10,20 Be assured that episodes of self-doubt and insecurity are normal. How you resolve the incident is vital. Remind yourself of what you have accomplished, seek out a mentor. Sometimes it is okay to be unsure of what you are doing-ask for help. As mentioned earlier, mentors are critically important in our careers. You must actively seek your mentors. Do so, realizing that one mentor is unlikely to provide all the guidance that you desire. You may need advice with your career, clinical care, work-life choices, raising children, research, or writing. Find the mentors you require for help in each of these areas.<sup>22–26</sup>

"The two most important days in your life are the day you were born and the day you find out why." (Mark Twain)<sup>27</sup> I hope that you have had the epiphany of that second day when you see your path ahead. This choice must be based on what you will be passionate about for your entire career. I love what I do everyday, now 35 years later, as much as the first day of my career. "If you

do what you love, you will never work a day in your life." (attributed to Confucius) I enjoy coming to the hospital, providing patient care, writing, teaching, working with my partners—it has never felt like a "job."

**Passion.** Our Oriens essayists wrote about passion in their work. President Bernard spoke of legacy in his presidential address yesterday: "IDEA+PASSION = LEGACY. Embrace your passion—pursue your vision. Talent is an asset as you aspire to achieve your vision. On the other hand, equally important in successful pursuit of your vision is *grit*, a concept introduced recently in the psychology literature.<sup>28,29</sup> Grit has two fundamental components—passion and perseverance—over the long term. This persistence over the long term, not losing site of the ultimate goal, not quitting because of setbacks, is critical. Have faith in your skills. "Doubt kills more dreams than failure ever will."<sup>30</sup> Successful pursuit of a grand vision requires grit, often for many years. The road to fulfillment of your vision is a marathon, not a sprint.

It is important to clearly codify your vision, mission, and goals when starting your career (Table 2). I began in 1983 with a bold and naïve vision. My vision was to improve trauma care. This was obviously based on my observations of less than optimal trauma care in our region and knowing that we could do better. My mission was twofold. First, to build an outstanding trauma care system in our tristate area (Western Pennsylvania, eastern Ohio, and northern West Virginia). To clarify, the mission was not simply to develop a trauma service or trauma center, but to develop an integrated trauma system. Second, I wanted our division to do research that would change trauma care in the future. We can debate whether we came close to either goal, but the vision and mission were clear. In addition, it is important to spend the time and effort to scribe your goals for the first 5 years to 10 years of your career; this generates your action plan. This again must reflect your vision and mission. Review this list periodically, discuss it with your chief, be steady in pursuit of your vision and mission. Obviously, as opportunities arise, this list will need to be modified.

**Metamorphosis.** If your job is unchanged 20 years or 30 years into your career, you are likely to be stale in what you do, missed opportunities along the way, or are dissatisfied with your career. It is important to undergo a metamorphosis every 10 years. This is neither planned nor premediated. This metamorphosis occurs because you have recognized and taken an opportunity to expand to something new and different. Do you decide to maintain the cocoon or to branch out, taking on new challenges?<sup>31,32</sup> Examples include becoming the trauma medical director, residency program director, chief of surgery, research collaborations, or duties within hospital administration. For me, a chance introduction to a Colombian trauma surgeon at a meeting of the American College of Surgeons in the early 1990s led to 25 years of deep involvement in the Panamerican Trauma Society (an unanticipated reward). This endeavor

TABLE 2. Essential Steps in Achieving your Goals

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Mission

Vision

Goals

Action plan

changed my view of the world and life, as well as an appreciation for surgery globally. However, when assessing a potential opportunity, it can be difficult to differentiate a wise endeavor from a rabbit hole.

Unanticipated rewards in my career. The satisfaction of watching a resident mature from a PGY-1 to a confident, competent surgeon during training is analogous to watching my children grow up and succeed. Through academic contacts, I have made dear friends all over the world. I have been granted leadership positions in national and international societies for which I simply aspired to earn membership as a new faculty member. I had no idea this was possible.

Who wants to become a "master surgeon"? (All in the audience raise their hands.) I base this discussion on both the literature and observation of a department with 200 surgeons for 35 years. The Dreyfus model for skill acquisition is important in this discussion (Fig. 2).<sup>33</sup> Most of us will become competent or proficient surgeons. However, to become an expert or particularly a master, requires an enormous commitment of time and effort. This principle applies to a surgeon, an athlete, or a musician.<sup>34–38</sup> Possessing innate talent alone makes no one a master; thousands of hours of training and repetition are required to fulfill this potential. "Experts are made, not born."<sup>35</sup> In fact, in a study of 120 elite performers (in music, the arts, mathematics, neurology, etc.) Bloom found that no childhood indicators would have predicted their ultimate virtuosity.<sup>36</sup> Taking night call and meeting your requirement of block-weeks on service will not make you a master surgeon. These times on call are necessary, but not sufficient to become a master surgeon.<sup>34-38</sup> Furthermore, the injuries which kill our trauma patients (non-CNS) are major hepatic/retrohepatic injury, major vascular injury, and complex thoracic injury. Even at high-volume trauma centers, these injuries are sufficiently uncommon that taking night call every night will not provide sufficient exposure to develop the skill to effectively manage these injuries. Thus, if you hope to become a master surgeon, it is essential that you have an elective practice to expand your surgical skillset. For example, providing anterior exposure for the spine surgeons teaches access to the

major vessels. If vascular surgery or thoracic surgery is a component of your elective practice, you are a better trauma surgeon. In addition, learn from other surgical specialists (mentors)-the technology, operative maneuvers and instrumentation change rapidly. As Dr. J. David Richardson (a master surgeon) stated in his 1999 Presidential address, "How do trauma surgeons who are narrowly focused participate in the cross-fertilization with other surgeons that really is so much a party of the continued advancement in surgery?"39 Learn from your hepatobiliary surgeons, vascular surgeons, thoracic surgeons, and other surgical specialists. In addition, take or teach the ASSET (American College of Surgeons Advanced Surgical Skills for Exposure in Trauma) course frequently. This invested time is how you learn access and exposure of the retrohepatic inferior vena cava, the iliac artery or the pulmonary hilum. This major commitment of your time as an active elective surgeon, thinking through and planning complex reoperative procedures, and learning from your subspecialist partners is essential to become a master surgeon. Deliberate practice, which focuses on tasks beyond your current level of competence, is mandatory on the path to mastery.<sup>37</sup> "The fundamental theoretical challenge is to explain how most people and professionals reach a stable performance asymptote within a limited time period, whereas the expert performers are able to keep improving their performance for years or decades."<sup>37</sup> Repeated practice is thus crucial to gain expertise. This must be deliberate practice, sustained over at least 10 yearscoupled with a determination to improve. A well-informed coach (mentor), who guides and pushes, is also essential for master performers.<sup>36–3</sup>

I have learned life lessons at home as well. I have been blessed with a wonderful wife for 40 years and four beautiful children. My family brings me joy every day. Of course, life has thrown challenges in our path—broken bones, a cervical fracture, two cancers. Treasure every day together—do not take each other and lives shared for granted. Listen to your spouse. "Listen with the intent to understand; not with the intent to reply."<sup>40</sup> My wife and I are closer than ever. Cherish and nurture your marriage. Maintain the passion. Make time for a date



**Figure 2.** Aspire to become a master surgeon. Attaining this level of expertise requires sufficient emergency/trauma call, extensive time/operative experience in complex elective surgery, and deliberate practice.

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every week. Celebrate your relationship often-find reasons to do so.

In summary, my messages to you today are:

- · Cherish your family, partners and patients
- Do what you love to do (passion)
- Have a vision—pursue it
- Recognize and take career opportunities
- Find your work/life balance/harmony
- Master surgeons are made, not born

Thank you again for the honor of the Oriens Lecture.

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