Legacy Letter – Dr. Alec Rooke

FAER
Foundation for Anesthesia Education and Research

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As told to Sara Geballe

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Dear Friends and Colleagues,

The Foundation for Anesthesia Education and Research (FAER) has generously provided me the opportunity to share my thoughts about my life and especially my beliefs about the field of anesthesiology in the form of this "Legacy Letter." In telling my own personal story, and those factors which led me to become an anesthesiologist, I want to share my hopes and concerns for the future of our specialty, and most especially for anesthesia research and geriatric anesthesia. Let me start at the beginning…

Childhood Influences

My sister, Ellen, and I were both adopted. I don't remember ever not knowing I was adopted, and certainly my parents never tried to keep that information from us. As soon as I was old enough to understand what being adopted meant, I imagine I became aware of it. Obviously, our parents wanted kids and they cared for both of us a great deal.

My father, Edward Douglas Rooke, was a role model for me in many ways. He was a neurologist at the Mayo Clinic in Rochester, Minnesota. Although I was not interested in medicine initially, a lot of what I came to view as the way a physician should act came from my father. He was the type of person who never seemed to get flustered; he was a very even-keeled, giving individual who gave me a lot of support as I was growing up. I would describe him as a very kind and gentle person, and I've tried to emulate him in many ways.

Growing up in Rochester – America's "geriatric oasis" – the vast majority of my friends' parents were also physicians. But my father never pushed me towards anything in terms of a profession. If anything, he discouraged me from becoming a doctor because he didn't like the way government was taking over medicine.

My mother, Avis Irene Bjerke Rooke, was a nurse when my parents met. She had grown up in South Dakota and had come to Rochester for nursing school. After I was born, she became a fulltime mom. I grew up in a typical 1950s stay-at-home-mom environment. My mom was a very loving, warm individual and my childhood really was the quintessential 1950s experience. We lived in a single family neighborhood with lots of kids my sister's and my ages. The environment was open and nurturing, with my mom baking cookies – a pretty ideal situation for growing up.

The kids I grew up with in Rochester were also very smart. Education was a much valued commodity in that community, and the Rochester public schools were really good. Not surprisingly, the schools were particularly strong in math and science, which were my strong suits as well. So it was a great match.

When you are growing up you take what's around you for granted because that's the only thing you know. But later on it became very apparent to me that mine was not a usual peer group. For instance, three of my friends who lived within a block-and-a-half of me all became staff physicians at the Mayo Clinic.

Before I was old enough for kindergarten, I went to preschool for two years. I remember not getting along well with my preschool teacher. Apparently, when I was old enough for kindergarten, she told my mother she really didn't think I was ready and I should stay in preschool another year. My mom said "no" and never spoke to her again.

My first grade teacher, Miss Fleming, was very good to me and became one of my favorites. She made special efforts to make sure I understood whatever was going on in class. But the real kicker came many years later when I got married. We had a reception back in Rochester at the condo complex where my parents were then living. Miss Fleming also lived in the complex, so we invited her. At the reception, Miss Fleming confided in me that when I had entered first grade, this

same preschool teacher had approached her and warned her about me telling her she thought I was "retarded." That made me appreciate Miss Fleming even more, since she had realized early on that I was by no means a dummy. It was probably more a matter of me being the proverbial bored kid.

Academically, I didn't realize I was smart until around fourth grade – when I started getting better grades than other students. Back then there wasn't much of an emphasis on science at the elementary school level. Until Sputnik went up, that is. Then all of a sudden the government decided that science needed to be taught in grade school. My fifth grade teacher didn't know any science herself, so she handled the requirement by having all of us students give class presentations.

For my project I took a piece of plastic tubing, heated it up, and put a bunch of curves in it. Then I showed if you shone a flashlight in at one end of the tube the light would come out the other end as a beam. Of course, that's the basic principle of fiber optics, which hadn't been invented yet. If only I had known what I was doing at the time!

The following year my sixth grade teacher, Miss Radde, really did know something about science. She did things like bring in a calf heart for us to dissect. She was also very good at getting students to do advanced work on their own. Miss Radde was the one who recommended which students should be placed in the math and science honors classes starting in seventh grade. And that was key for me.

I should probably also mention one of my high school science teachers, Mr. Walton, whom I had for chemistry in tenth grade and honors science my senior year. It was Mr. Walton who encouraged me to pursue scientific research as part of my future career path.

Stanford Years

When I was young, I didn't have a great interest in being a physician like my father. Rather, I was more drawn to pure science. When I went to Stanford University as an undergraduate, I majored in physics. But it became pretty clear to me early on that physics was probably not going to be my long term occupation. Stanford had a high level physics program, and I was definitely not the brightest star in that orbit. When you get to high energy physics, it's basically math. Although I'm certainly no dummy in math, I was not at *that* level.

Another kind of life lesson I learned at Stanford came from playing trombone in the university band. While I was there, the Stanford football team competed in two Rose Bowls, so I got to march in the Rose Bowl Parade and perform at the Rose Bowl twice. I was also given the job of being the liaison for visiting bands. That meant I was paid a nominal amount by the athletic department to make sure certain things happened. There were a couple of times when screw-ups occurred, and I was the one who got the blame. But I really didn't have control over the situation. That experience made it very clear to me: *Never agree to accomplish something without being given the power to make it happen.*

Life Changing Junior Year Abroad

As a physics undergraduate, I was thinking of going on to graduate school in biophysics. I had always enjoyed biology, so biophysics seemed a good alternative to theoretical physics. Then I spent my junior year at Stanford's overseas campus in Germany.

That was a special, life-broadening experience. The program had both the disadvantage and advantage of being just Stanford students in our own little

enclave up on a hill. We were relatively isolated in a small town in the distant suburbs of Stuttgart. But at least it got me overseas.

One of the things that experience triggered in me was the realization I wasn't sure I just wanted to be in a lab the rest of my life. I wanted more people contact. Probably about half way through that year in Germany I decided I wanted to go to medical school.

But I also didn't want to completely give up on my research interests. Then I found out about MD/PhD programs that would allow me to do *both* medicine and research. Those types of programs were pretty rare at the time with only eleven federally funded ones in the country. I applied to several of them and was accepted by the University of Washington's program. Since the program was federally funded, I wouldn't have to get student loans, or support from "The Bank of Mom and Pop." Plus, I felt having both an MD and a PhD would give me all the career options I would need. That brought me to Seattle in 1973.

Move to Seattle

The only time I had ever visited Seattle before starting medical school was when I came for the interview. I was there for three or four days and it rained the whole time!

The UW Medical School was organized so that the standard core courses were in the afternoon. That meant I could take electives in the morning. Because I had been considering graduate studies in biophysics, I chose to do my doctorate in physiology/biophysics. I spread the first year of graduate level physiology courses over two years. So by the end of two years at the University of Washington, I had completed the first two years of medical school plus the first year of graduate school. All medical students had to have a faculty advisor, and fortuitously, mine was Thomas Hornbein.

For the next three plus years I focused on my doctoral research in physiology. But even while working in the lab, I always kept my hand in medicine a bit by spending half a day a week working in a medical clinic of some sort. While in the lab I became a close friend of Charles Buffington, a then junior anesthesiologist also working in the lab. Through him and Dr. Hornbein, I got to know many other anesthesiologists, yet I was still not interested in the field.

After I completed my PhD research, I re-entered medical school and finished all the required medical clerkships. Toward the end of medical school, I realized I only needed two more weeks of clerkships to graduate, so I switched from a six week sub-internship in the Cardiac Surgery Intensive Care Unit to anesthesiology, and I enjoyed it very much.

By June 1980, even though my PhD was not completed, I was committed to a residency in internal medicine at the University of California, Davis. (I would finally complete that several years later when I returned to Seattle.) My expectation was to complete my internal medicine residency and then do a fellowship in cardiology.

Choosing Anesthesiology, Not Cardiology

Pretty quickly after I started my internship, I realized cardiology as a specialty wasn't going to work for me. In clinic I felt rushed and that we were dealing with medical issues that were nebulous. I didn't feel I was doing anything to really help the patients I was seeing. Also, the cardiologists I worked with were very bright in cardiology, but they didn't seem to remember anything about the rest of internal medicine. They were very little, if any, help with the other medical problems those patients had. But I found that I liked working in the ICU. I liked critical care – both the environment and the pace of it. And I found I was pretty good at keeping people alive.

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Shortly into my second year of internal medicine, I decided I needed to change specialties. Given how much I had enjoyed anesthesiology, it was an easy decision. That meant finding a program that would take me outside the match. Fortunately for me, Dr. Hornbein had become chair of the UW Department of Anesthesia. So the University of Washington was an obvious choice, and I was delighted to return to Seattle.

I do not regret doing one more year of medicine than necessary. In the old days, if you were on call as a resident you were the senior medical person in the hospital, period. You didn't call your attending physician very often. If there were decisions that needed to be made, you as the resident made them. The increased level of responsibility and the additional medical experience I gained at UC Davis during that second year before my anesthesia residency in Seattle were definitely beneficial.

Once I made the switch to anesthesiology, I was comfortable with it from the start. It was a good fit. One of the things I liked was the art of anesthesiology. People aren't machines; they are much more nuanced than equipment. That uncertainty, that art in care definitely appeals to me. And I liked the pace. In some ways it's basically a physiology lab, which I am very used to and comfortable with. I had found what I was good at in medicine.

I think I've gravitated toward things that I can largely do on my own, rather than depending on other people to do them for me. I'm enough of a fanatic for doing things well that I don't easily delegate or get other people to do things for me. Instead, I carve out what I can do by myself and do it.

Drawn to Anesthesia Research

Not surprisingly based on my background in both physiology and cardiology, I gravitated towards cardiac anesthesia. As an anesthesia resident, I lobbied to work at the Veterans Affairs Hospital in Seattle. It's a great patient population with a lot of interesting cases and a lot of cardiac disease. And it was a great place for doing clinical research because the vets will sign up for anything!

The year after my residency I did a cardiac anesthesia fellowship and joined the UW faculty in 1985 as an assistant professor. (That's also when I finally finished and defended my PhD dissertation.) Shortly after joining the faculty, I was assigned to the VA Hospital to start their cardiac anesthesia program. I was the only one at the VA who had any additional training beyond residency in cardiac anesthesia. Nominally, I was the "chief of cardiac anesthesia" in a department of one. I ended up teaching some of the very same attending physicians about cardiac anesthesia who had been *my* attending physicians when I had been a resident at the VA. That was an interesting role reversal.

Peter Freund was Chief of Anesthesia at the VA Hospital. He did a masterful job in creating an academic environment in what was oftentimes considered a "wasteland." Peter had a bunch of us assistant professors all working on establishing our careers, and he provided a really good environment for us to have academic success. He was also one of my research mentors. Eventually, in part thanks to Peter, we all became full professors!

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Focus on Geriatric Anesthesia

"Geriatric anesthesiology is a very challenging area because obviously older patients are at greater risk, particularly if they have other co-existing diseases."

I didn't start out being interested in geriatrics. But at that time, around 1988, most of the patients I was seeing at the VA were World War II veterans – all of whom were in the geriatric age group. But what really did it for me was when the American Federation for Aging Research (AFAR) decided to sponsor fellowships in geriatrics in non-geriatric fields. They were offering two fellowships in each medical specialty. I applied for and received the very first fellowship in Geriatric Anesthesia given in the United States. That was great because the fellowship gave me both salary support and money for research. It bought me time out of the operating room so I could pursue medical research.

I would spend around one day a week joining the geriatric consult service at Harborview Hospital in Seattle where I became more familiar with the sorts of medical issues that typically plague the older population. At around that same time, the American Society for Anesthesiology (ASA) created a new Committee on Geriatric Anesthesiology, and I got myself appointed to it. I've been a member of that committee ever since. While I wasn't one of the committee's founding members, I was pretty darn close.

Geriatric anesthesiology is a very challenging area because obviously older patients are at greater risk, particularly if they have other co-existing diseases. The whole concept that older patients are not going to react the same way to drugs as younger patients do seemed pretty self-evident to me. In fact, that had been one of the first things I had realized when I worked at the VA Hospital as an anesthesia resident. Before going to the VA during my residency, I had been

working at our trauma hospital where we had mostly young, healthy people. When I gave the same doses I had used there to older patients at the VA, their blood pressures just disappeared!

It was pretty obvious that the older population was indeed different and should be handled differently, but we didn't then have a good concept of how to do things better for them. That observation led me to primarily focus on geriatric anesthesia as a research issue. Plus, a lot of aging issues are specifically related to cardiovascular aging, and I had always liked physiology.

"More anesthesiologists were realizing the elderly were going to be an increasingly bigger part of our patient population and we needed to pay more attention to this group… We decided the appropriate thing to do would be to start our own society – the Society for the Advancement of Geriatric Anesthesia, or SAGA."

Creation of SAGA

All of the American Society for Anesthesiology's committees are relatively limited in size. By the late 1990s, the ASA's Committee on Geriatric Anesthesiology had about twelve members and it was becoming apparent there were more people interested in the topic than we could accommodate. More anesthesiologists were realizing the elderly were going to be an increasingly bigger part of our patient population and we needed to pay more attention to this group.

So after a certain amount of discussion within our committee, we decided the appropriate thing to do would be to start our own society – the Society for the Advancement of Geriatric Anesthesia, or SAGA. Since I was then the chair of the ASA Committee on Geriatric Anesthesiology and had done most of the

legwork in creating SAGA, I was elected SAGA's first president in 2000. I still remain active in both organizations.

Though SAGA's membership has grown, we are still very small. We only have about forty-five dues paying members, whereas the ASA has over 30,000 members. One thing both SAGA and the ASA Committee on Geriatric Anesthesia do is to make sure the ASA Annual Meeting always has educational programs on geriatric topics. We have done that for many other professional societies as well. The major thing we do is serve as a resource on geriatric anesthesia education. It is very gratifying to see the ASA recognize the importance of geriatric anesthesia and make it one of the educational tracks at the annual meeting.

Throughout medical school, my medical internships, and my residencies, I did not have any formal training in geriatric anesthesiology. I don't think geriatric anesthesiology should become a full sub-specialty, because it's not as if the average anesthesiology practitioner has no concept about taking care of an older patient. But you do want practitioners around who have focused on the topic to provide advice, suggestions, and be the academic leaders in the field. I look at those of us with an interest in geriatric anesthesiology as the practitioners who would be sought out for our greater depth of knowledge.

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Importance of FAER

The Foundation for Anesthesia Education and Research (FAER) has a long track record of supporting beginning faculty. I think it's a wonderful program. FAER has done a great job of maintaining a certain core group of true academic researchers in anesthesia

and that has been very successful. We know the track record is good for those people who receive FAER grants early in their careers to go on and get other funding after they got their start through FAER.

> "I think FAER is one of the few things that will, hopefully, keep anesthesia as an academic specialty."

FAER is doing what it's supposed to do, and it's doing a great job. I think FAER is one of the few things that will, hopefully, keep anesthesia as an academic specialty. FAER has been very good about recognizing the importance of geriatric anesthesia, and has been very generous in supporting research in our field.

SAGA gives $2,000 to FAER every year because of their support of research in geriatric research. Considering SAGA's typical annual income from dues is about $2,500, our contribution to FAER is substantial.

One of the reasons I support FAER is because they've done a good job and I think that needs to continue. I'm not targeting my legacy to FAER to geriatric anesthesia specifically because I don't want to hamstring the organization in any way as to how they use the money. I'm not worried that FAER is not going to consider geriatric anesthesia a worthwhile field of support; I'm sure they will.

Need for Mid-Level Anesthesia Research

I am bothered by the fact that there is nothing for anesthesia research after a starter grant from FAER – other than a large NIH grant, or industry-supported grants. It is fine to have an NIH grant. But the biggest problem I see in anesthesia is we need to be doing a lot of mid-level clinical research in the $20,000 - $100,000 range. That kind of funding is the hardest to find. Overall, anesthesiology doesn't get nearly as much funding compared to other medical specialties.

Part of the reason is because I think anesthesia is lumped in with surgery. We don't have a lot of anesthesiologists who spend time doing research compared to physicians in other medical specialties. I think there is a lot that could be done to expand our knowledge in studies that don't cost an arm and a leg. But there is no funding source for that once you get beyond the FAER junior investigator stage.

That mid-level type of funding would help us understand how to clinically manage patients better. This type of clinical research would also increase the academic acumen of faculty and, I think, make for better teaching of residents.

What we are seeing now in anesthesia is two groups of people. You have the physicians who work in the operating room, and you have the researchers, who are often PhDs. Here at the University of Washington, for instance, we have a stable of researchers but they are located at a remote location and have almost no interaction with the rank and file anesthesiologists at the hospital. And Seattle is not the only department like this. It's what has happened throughout the country. The rank and file anesthesiologists are not involved in, or care about, the anesthesia research that is being done by PhD researchers. Nowadays, the typical anesthesiologist teaches in the operating room and that's it. They are not involved in any clinical research. To me that is a big problem. In my opinion, research is an important component of being an academic anesthesiologist.

The role of an academic anesthesiologist has had to change in the last ten to twenty years because of financial pressures. Hospitals need billable hours. If a medical school is going to support doctors' high salaries, they've got to be working. But even billable hours don't cover the full costs. As former UW Anesthesiology Chair Fred Cheney once put it, "We lose money on every case, but we do a volume business!"

The average anesthesiologist in this country, whether in academics or private practice, is subsidized by his or her medical center to the tune of $70,000

to $100,000 a year. And that tends to make anesthesiologists beholden to the hospital.

Part of the problem is that Medicare reimbursements are abysmally low for anesthesia services. For most medical specialties, Medicare pays reasonably well – around eighty to ninety per cent – as compared to private insurance rates. But for anesthesia the reimbursement is only thirty per cent! This goes back forever and I don't know why, but the government is not willing to correct it. And as the aging population swells the ranks of Medicare, it's going to get worse. Frankly, I think that is one of the reasons why most anesthesia practitioners don't have any particular interest in geriatrics. Why would you want to identify with a specialty that pays you less well than everything else you do?

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Another trend is the rise of nurse anesthetists. Some very prominent anesthesiology groups in Washington State have lost their contracts with their local hospitals because the hospitals have brought in nurse anesthetists to do the work. The threat is real.

There is no question that a healthy person undergoing a relatively straightforward surgery will do just fine with a competent nurse anesthetist. That's not the issue. The issue is whether or not you want physician involvement with your sicker patients and your more complicated surgeries. I don't think you can do that adequately if you are one anesthesiologist supervising ten nurse anesthetists. This trend has put even further pressure on academic departments to not lose any more money than they have to. That means everyone in the department is clinical and forget about research.

The Future of Anesthesiology

As time goes on, the field of anesthesia will have to recognize how management of the older patient is different and the field will have to pay more attention to it. I've asserted for a long time one reason SAGA membership is still so small is there's never been anything to force the issue into the mind of the average anesthesia practitioner. Maybe at some point that will come. When it does, hopefully, we'll be ready. But there isn't that hook right now. So I figure we'll keep puttering along until that time comes.

When you think about it, the Society for Cardiovascular Anesthesiologists started with just seven people and grew to many members in just a couple of years. I hate to be cynical about my own specialty, but anesthesiologists are humans too. The reality was if you did cardiac anesthesiology, you earned more than your regular general anesthesiology colleagues. Once distinguishing yourself as a cardiac anesthesiologist was in your favor, of course anesthesiologists joined that Society. Whereas for SAGA, you could say, "Be a geriatric anesthesiologist and earn LESS!"

"I believe in doing things because it's important they happen… Nobody had paid much attention to anesthesia in older patients, and I realized it was important, so I started focusing on it."

Everybody in the field of geriatric anesthesia recognizes that we are off on our own. We have been to some extent ignored. But more recently the concept that anesthesia might actually influence what happens to the brain is starting to get more publicity and recognition – not only as a research area, but as a political issue as well. For the first time I'm seeing some of the issues in geriatric anesthesia start to come to the forefront within the field, but we still have a long ways to go.

Doing Things Because They Need to Be Done

I believe in doing things because it's important they happen. My involvement in geriatric anesthesiology is an example. Nobody had paid much attention to anesthesia in older patients, and I realized it was important, so I started focusing on it.

About five years ago, I started a new anesthesia-based service for all surgery patients with pacemakers or ICDs (implantable cardioverter defibrillators). We currently manage their devices before, during, and after surgery. It's not a trivial issue, and it's been far more work than I ever expected at the time. Yet it's something that's been largely overlooked by the medical community because it's only a problem when it becomes a problem.

At the UW Medical Center we've taken over the management of these devices so effectively that it just sort of happens and nobody has to pay attention to it. There are only three or four places in the country that have anything resembling what we're doing in terms of monitoring pacemakers and ICDs during surgery.

One potential problem is the use of electric cautery, as it can interfere with a patient's pacemaker or ICD during surgery. To prevent any such adverse effects, we may alter the programming of the device for surgery and then reprogram back after surgery. At other hospitals, pacemakers and ICDs are either completely ignored, or perhaps a magnet is simply put on the device during surgery – which is not always a satisfactory solution.

Teaching

Teaching certainly has also been a big part of my career. And like anything else, you get better at it if you pay attention to it and work at it. My approach has

always been to find a few things you get really good at and teach those because I think the residents deserve it. For me cardiovascular physiology has always been one of those topics. That's where my initial interest in pacemakers and ICDs came from. It's important to create a little niche for yourself.

A great deal of my academic efforts have been trying to promote knowledge in various areas – both locally and nationally. I still give lectures to our anesthesiology residents, I give talks at various national meetings, and have been a visiting professor at a number of places.

Giving Back

I believe people who have been given the opportunity and have the ability should, when possible, do something that benefits society. It's what I was exposed to growing up, and what my children were exposed do when they were growing up. It's been very nice to see both my kids, Doug and Linnea, end up in areas where they are improving people's lives. My son is currently a third year medical student at the University of Colorado. My daughter just finished her Masters in both Public Health and Health Administration at the University of Washington. Her interest is in wellness programs and insurance literacy.

My hopes and goals for my children are for them to be happy. They don't have to be wealthy, but being financially secure is a good thing. I want them to be able to give their own children opportunities, and I want them to do something that they find interesting and rewarding. I'm certainly proud of their choices. I don't know how much I've influenced that or not. All that matters is that they enjoy what they do.

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What's Next?

As I'm coming more toward the end of my career, I'm ending up doing more administrative work than ever before. I don't really mind. Again, it's something that has to be done and it's not a bad idea to have someone like me do it because I'm not someone who has to get promoted at this point. So I guess I'm elected.

I plan to retire in summer 2017. The University has a nice program by which I can be hired back at forty percent – working two days a week in the operating room. There would be no formal expectations of doing any teaching, research, or administrative work. That's what I'll do. With interests in outdoor activities like hiking, sailing, and skiing, I'm not worried about how to fill the rest of my time.

With best wishes for a bright future for FAER,

G. Alec Rooke
Seattle, WA
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