

James Mayo, MS, 1968



What influenced your decision to attend graduate school at OSC?

From the moment I first heard rumors that an Optical Sciences Center was being set up in Arizona sometime in the 1964-65 time-frame, that was where I wanted to go. By early 1964, I was working with a team at Wright-Patterson Air Force Base in Ohio to increase advanced optics education for military officers. Our Team's emphasis was on the University of Rochester, and I spent a lot of time up there between 1964 and 1966.

There was also a two-year photo-optics MS program being set up at Rochester Institute of Technology to include a year of 'Education with Industry' at Eastman Kodak, and I had been approved for that by 1965. Still, I fought hard to help set up something at the University of Arizona, since I realized the enormous potential in that program. When Rochester said it would only take two Air Force grad students a year, I saw a great opportunity to strike. I convinced the AFAL Reconnaissance Division Chief to support us, and he and I met with the Air Force Institute of Technology (AFIT) Head at Wright-Patterson. We proved to him that AFIT should immediately approve designation of the Optical Sciences Center as the central location for Air Force Optics grad students.

I called Aden Meinel in Tucson while at that AFIT meeting, explained our situation, and asked for his response. He said 'YES' and even better, said, 'And I will take as many students as you can qualify.' Within weeks, all the UR and RIT options were dropped and I left for Tucson in April 1967. For the next six years, Air Force Officers poured into OSC and the United States Air Force funded much of the work there. The rest is history.

What do you wish you would have known your first day of graduate school? Was there anything you wish you had done to prepare more for graduate school?

One thing I would like to have known was that OSC didn't offer any summer courses in 1967! Here I am there in Tucson in May with no courses being offered until September! I talked to my initial advisor, Bob Noble, who gave me three summer course options: Grad courses in electrical engineering (not my bag), computers (Those things will never amount to anything!), and lastly math. I chose math.

Which classes did you find most enjoyable? Which ones did you find most difficult?

All my courses were great and all my Professors were likewise, each in his own special way. The only significant difficulty I recall from my first year at OSC was Nick Stavroudis's Foundations of Optics course. The first day was a disaster and of the 15 or 16 students who showed up, over half dropped the course. When six of us came back the next day, Stavroudis apologized for spending the first day simply writing equations on the blackboard that few of us understood. We discovered that none of us had an appreciable background in the 'Calculus of Variations.' Stavroudis said he would start slower and we would all learn the Calculus of Variations. He also said that if we six would stick with him, 'no one would be hurt.' We knew what that meant and we all six stuck with it for the full year, and learned a lot.

Was there an individual (professor, advisor, staff, friend, family member) who played a particularly important role in your education?

I always enjoyed Roland Shack's Optical Design courses and worked with him quite a bit. He had enormous respect at OSC and the 12 Sept 1964 'Founding Date' used by Aden was the date he hired Roland. Roland's wife, Pam, was a fellow student with me at the time and we got along famously. Phil Slater became my advisor and was a wonderful teacher and friend. He wanted me to stay with him and get my PhD in some reconnaissance or aerial optics field, but the Air Force had other immediate plans.

What was your research while attending OSC?

My research was on the design and performance characterization of advanced aerial reconnaissance lenses. I had worked extensively in that field at Wright-Patterson AFB before arriving at OSC, and that technical area became my MS thesis topic under Slater. General Lew Allen and Aden Meinel approved my going back to the Optics Lab at WPAFB in Ohio to do the hands-on testing at their world-class facilities. That, and an immense amount of typing support from my former spouse, Cynthia, enabled me to complete my thesis in a record two months. I became the first OSC graduate in August 1968.

What was the cost of rent in Tucson while you were in school?

I became something of an 'expert' on housing while I was at OSC in 1967 and 1968. I actually helped several early students get settled and carefully tracked the Tucson housing market in that era and later. Housing prices and rentals in Tucson in 1967 were staggeringly low. I found a nice three-bedroom house (I wanted a house, not an apartment) near Broadway and Kolb for \$125 a month, including water, and grabbed it fast. I could have bought that house for around \$14,000.

If you owned a car during graduate school, what year and model was it?

In 1960 at the University of Tennessee (UT), I had the opportunity to ride in an Austrian student's Porsche Spyder convertible. I swore then that I would have a Porsche someday. Six years later, as a young Air Force Lt, I purchased one of the first new Porsche 912s in southwestern Ohio. That 1966 Porsche 912 was the car I had while I was at OSC. I traded it in LA in 1971 for a BMW 2500. I wish I still had that Irish green 912 Porsche today.

What was your favorite restaurant/student hangout near campus?

Actually, I ate lunch at the UA Student Union with a bunch of OSC friends regularly during 1967 and 1968, and loved their 'chimis.' I thought they were great and super cheap. I also liked Pinnacle Peak, La Fuente, Tia Maria, the Hidden Valley Inn, the Steakhouse near Colossal Cave, Casa Molina, Karichimaka, and a couple of Italian restaurants including Da Vinci. Later, I liked Rosa's, Las Campanas de Catalina, and enjoyed El Corral and Scordato's Pizzeria. Never ate at the renowned Tack Room, but wish I had.

What did you do for fun during your time in graduate school?

Most of my 'fun' in OSC Grad School was driving my Porsche to the top to Mt Lemon, to Madiera Canyon, Tubac or down to Sonoita, Patagonia, or Parker Canyon Lake. I also did scuba diving in the Salt River Lakes east of Apache Junction with Bob Hoffman. There were several hikers and climbers at OSC then and I spent a lot of time in the Catalinas, the Rincons, the Santa Ritas, et al. Also enjoyed playing guitar with John Lytle, Bill Ronstadt, and others.

What was most memorable about your commencement ceremony?

I rushed out to buy a house and go to work in LA immediately after graduation in August 1968. I never attended a commencement ceremony.

At the time of your graduation, what were the most sought-after jobs/most popular industries/most popular companies?

In my field, it was the U.S. Optics Companies (EK, Itek, Perkin-Elmer, Fecker, Bausch and Lomb, American Optical, Polaroid, etc.) and the Aerospace Companies (Boeing, Northrop, Grumman, Lockheed, Martin, McDonald Douglas, Raytheon, etc.). Then of course, in my case, there was the Military, the Department of Defense, the Department of Energy, the National Labs, and the "Agencies," et al. Also, there were some opportunities in the Astronomy Community and the Space Agencies (NASA, et al).

What was your first job after graduation?

I left OSC and went right to SAMSO in LA as an Air Force Captain in a 'Special Scientist' role in the Military Space Program. I worked for General Lew Allen, a very close friend of Aden and Marjorie Meinel.

What was the most significant world event during your time in graduate school. How were you affected by this event?

Probably the Apollo Space Program which I personally supported, working with the Astronauts on various optical and camera projects and payloads leading up to the moon landings in July 1969, et seq. On 20 July 2019, I gave the special invited presentation on the occasion of the 50th Anniversary of the historic Apollo 11 moon landing at the New Mexico Museum of Natural History and Science in Albuquerque—a great honor.

Was there a campus or community event in Tucson that was especially important to you?

Probably the Gem and Mineral Show. Some of the 'community/campus events' I did NOT participate in and did not enjoy were the campus war protests and riots and the burning of the Old Main because it had some ROTC connections and offices. It got so bad when I was there that you couldn't wear your uniform on campus without being harassed or spit on. It got worse when I arrived in LA in Sept 1968—not good memories.

What advice would you give to this year's graduating class?

Nothing special. Just find something to do that you like and are good at. If you are successful in that endeavor, as I have been, 'You will Never Work a Day in Your Life.' (Well, except maybe for all those 16-hour days and 30 years of 100,000 miles or more a year on airplanes!)