

## **The Auburn University Samuel Ginn College of Engineering**

### **Industrial and Systems Engineering**

**The Auburn University Industrial Engineering Department Developmental history during the years 1960-1979 by Saeed Maghsoodloo** (some contents herein are based on my conversations with the late colleague Dr. James N. Hool during the years 1977-2015). Further, the Office of Communications and Marketing (directed by Mr. Austin Phillips '04) of Auburn University has helped reduce inaccuracies in dates and times

In the Early 1960's, Auburn University (AU) did not have an Industrial Engineering (IE) program but did have an Industrial Management (IM) department. The late Dean Fred H. Pumphrey (1958-1968) approached professor J. Grady Cox of our ME department (during 1958-1960) and asked him what should be done about the IM department and Professor Cox replied we should convert it to an IE department. Accordingly, Dean Pumphrey asked Professor Cox to apply for an NSF Faculty Fellowship, earn his doctorate, and return to Auburn and transform the IM to an IE department. Professor Cox had already earned a BS degree in Chemical Engineering from Alabama Polytechnic Institute and an MS degree in Mathematics (1950) also from API. After being awarded the Fellowship, Professor Cox applied to Purdue University because of more curriculum flexibility; he majored in IE with a minor in Operation Research (OR). He passed the doctoral preliminary examinations in the allotted time and returned to Auburn to complete his half-finished dissertation. After he earned his PhD (December 1963-early 1964), he returned to Auburn as the department head of industrial engineering in winter Quarter of 1964.

Below, I am providing the exact text of an email that I received from Mr. Austin Phillips on 08/20/2020 about the history of Auburn University IE department during the years 1963-4.

"Professor Cox recalled, "I had worked in the field of operations analysis and operations research for the government and maintained a consultancy in the field for the military." He said that Pumphrey approached him one day and asked, "What do you think we should do with industrial management?" Cox suggested turning it into an industrial engineering curriculum with an emphasis on mathematics and science, like the other professional engineering departments. He told Pumphrey, "Make it strong in operations research..., [and] make it strong in operations

analysis...along with other traditional industrial engineering areas.” Pumphrey also asked him if he had ever thought about finishing his doctorate in a field tied to operations research. Cox had thought about it, he said, because he found engineering more “comfortable” than pure mathematics. The dean suggested that he apply for a NSF Faculty Fellowship, get his doctorate, and come back to Auburn and make it an industrial engineering department. After winning the fellowship, Cox applied to Purdue University, he said, because they gave him more flexibility; and majored in industrial engineering with a minor in operations research. He passed the doctoral examinations in the allotted time and returned to Auburn to complete his half-finished dissertation. After he earned his Ph.D., he became the acting department head and “immediately changed the industrial management department to industrial engineering,” he said. During the fall quarter of 1963, the dean worked with him to convert the curriculum, and, according to Pumphrey, it “closely paralleled the Industrial Engineering curricula of other Southern schools.” The dean rejected the suggestion that industrial management remain in the school to “salvage...students who could not make the grade in the regular engineering courses,” as he said. Rather, he insisted that the department upgrade the curriculum instead. Cox said that the new industrial engineering curriculum had the “same math, the same basic science as the other engineering programs...[because] we were not going to be second rate in math and basic science.” The new curriculum offered operations research, and Cox introduced more mathematics. He added more advanced courses, such as linear programming and dynamic programming, and he hired two of his colleagues from Purdue—one who majored in statistics and another who minored in it. Since he also had a minor in statistics, they were able to build up the courses in that area. Pumphrey and Cox coordinated their efforts with other schools and departments to ensure that the new curriculum would not duplicate or conflict with them. And they tried to assure that students already enrolled in industrial management would not be disadvantaged by the change. Cox interviewed every student enrolled and showed them what they had to do to switch over to industrial engineering, if they wanted to; but they could also remain and graduate in industrial management if they chose. They gave the existing industrial management students five years to graduate, but as Cox recalled, it only took two years before there were no longer any students enrolled. Most of the industrial management students chose not to “beef up” their backgrounds and transferred out, he said. Some of the faculty also expressed concern about the changes, but in the end, several retired, a few transferred, and others, “just made changes...we essentially changed everything,” Cox said. The trustees approved the curriculum change in March 1964, and the administration announced the new industrial engineering curriculum in the 1964 *Catalogue*. Cox said that overnight the large industrial management program became a small industrial engineering department. Although the industrial management department ceased to exist in the engineering school in 1964, the business school later added an industrial management degree program, but it differed with the focus of its predecessor of the same name. And over the years, since the conversion of the department to industrial engineering, and still later to industrial and systems engineering, the alumni of the industrial management program have continued to play a vital role in the department and the engineering college.[i]

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[i] “A Brief History of the Development,” 10 and 18–19; Interviews: Cox, November 13, 2008, and Alice E. Smith, March 24, 2009.

After the School of Engineering announced the changes in the industrial engineering curriculum to begin in the summer quarter of 1964, Cox became the head of the new department.

Historically, he wrote, “Industrial Engineering began with an emphasis upon the quantitative measurement of human and mechanical activity as related to the industrial enterprise.” This tied industrial engineering to “scientific management,” and the words became synonymous. Over time, however, industrial engineering used system methods and relied on quantitative design and analysis techniques, and modern industrial engineering relied on statistical analysis and the use of digital computers. Cox explained that many “often referred to it as ‘Engineering for Management.’” The new curriculum placed a heavy emphasis on mathematics in addition to core engineering and science courses, and the new department housed Auburn’s first computer sciences program. Cox recalled that he was “always in favor of a computer program” but had difficulty getting it going until the electrical engineering department later offered computer science and computer engineering. “That is when industrial engineering pulled back” and electrical engineering advanced the development of digital computing at Auburn, Cox said.”

### **When and How Did Saeed Maghsoodloo Join the Auburn University IE Department**

I, Saeed Maghsoodloo, received a BS degree in Physics (June 1962), an MS degree in Applied Mathematics (June 1963), and a PhD degree (August 1968) all from Auburn University. Starting Winter Quarter 1966, my PhD advisor was the late Norman C. Perry who was hired by the late Dean W. Van Parker when our Mathematics Department was housed in the Brown Hall where Aerospace Engineering is now located, and next to the Architecture which has remained so since 1958. By June of 1966, I had completed all the requirements for a PhD degree in Applied Statistics (prelims and 2 foreign languages which I chose to be French and German), and had started working on my dissertation.

Dr. James N. Hool informed me (during the years 1980-2010) that Professor Cox met him and Mr. Joe H. Mize in an IE graduate course at Purdue University taught by the late Virgil L. Anderson covering Design of Experiment (DOX); thereby, the three academicians developed a close friendship. As mentioned above, Professor Cox completed his PhD degree late 1963-early 1964, and before he left West Lafayette for Auburn, he asked Drs. Hool and Mize to join him as faculty members in the Auburn University IE department and they both agreed. Except for Dr. Cox, I surmise that the Auburn University IE department during 1964 may not have had any faculty member with a PhD degree. Drs. Hool and Mize joined the Auburn University IE department in the Winter Quarter 1965 (I am not certain about Dr. Mize; he may have preceded Dr. Hool). Dr. Mize left Auburn University for Oklahoma SU in the Fall Quarter of 1969 (roughly 5 years of service to Auburn University’s IE department).

In May of 1966, I was a part-time instructor in Auburn University's Mathematics Department. As fate would have it, Dr. James N. Hool had to leave Auburn for a consulting job the entire Summer Quarter 1966 and would return for the Fall Quarter 1966. As IE department head, Dr. Cox had 2 sections of IE211 (Introduction to Probability and Statistics) for which he had no instructor to teach (due to administrative and other academic responsibilities he did not have the needed time to teach IE211 himself). Consequently, he called the late Dr. Burton, the department head of our Math Department, to inquire about any PhD student who is majoring in Probability and Statistics; Dr. Burton replied we have only one namely "Saeed Maghsoodloo" whose dissertation is being directed by Dr. Norman C. Perry. I am pretty sure that Dr. Cox contacted Dr. Perry before I was asked to go to his office for an interview for teaching IE211. Dr. Cox showed me the text that the IE department was using to teach IE211: *Introductory Probability and Statistical Applications* authored by Paul L. Meyer (1965, 1<sup>st</sup> ed.), ADDISON-WESLEY PUBLISHING COMPANY, INC. I assured Dr. Cox that I could easily cover the topics in Chapters 1, 2, 3, 4, 5, parts of 7, 8 & 9; he also noticed that students should have no difficulty understanding my spoken-English and I accepted his generous offer. I remember that during the late July of 1966 Dr. Cox asked to speak with me in his office. I anxiously went to his office (first floor of Dunstan hall) and he asked "Saeed will you consider a full-time instructor position in our department for the entire academic year 1966-7 at a salary of roughly 6k", which was more than twice I was earning as a teaching-assistant during the academic year 1965-1966; of course, I accepted. I met Dr. Hool for the first time in early September of 1966. Further, due to full-time employment, I became a USA resident before June of 1967 to meet the requirements of US Immigration Laws.

During his 36 years of service to Auburn University Dr. Cox served as professor in IE, associate-dean (Fall 1966- Fall Quarter 1968), then dean of engineering (1969-1972) and our vice president for academic affairs (1980-1982). Further, Dr. J. Grady Cox worked closely with Dean Pumphrey on variety of improvements across the AU School of Engineering (see pp. 15-16 for the actual interview of Mr. Jim Killian with Professor Cox). Mr. Killian's interview clearly shows that Dean Pumphrey and Professor Cox played a very important role toward reaccrediting the programs in our School of engineering which had lost accreditation in 1957. Dr. Cox retired from academia in June of 1992 as professor in IE and continued consulting for companies in Birmingham, AL for several more years. He still lives in Auburn and enjoying his retirement

years. In fact, he made a presentation to the AU ISE faculty and students on January 22, 2020 at the age of 93.

## **IE Department History during the years 1966-1974**

In order to be more accurate about our IE Department history, I contacted one of our former IE Alumni, Dr. Leon F. McGinnis (1966-1970), who is now a Professor Emeritus of ISE, Georgia Institute of Technology, and he informed me that Dr. George H. Brooks accepted the position of our IE department head on 08/01/1966 offered by the late Dean Fred H. Pumphrey.

When I completed my doctorate near the end of August of 1968; my ex-wife and I had at least 4 offers to consider; we selected East Tennessee State University (located in Johnson City, TN) for the following 2 reasons: (1) The offer from ETSU was 26% higher than the minimum offer, (2) Dean Pumphrey, associate-dean Cox, and Dr. Brooks also offered me an assistant professor position that matched the minimum offer; however, Dr. Brooks told me because all my 3 degrees were earned from Auburn University, they could not presently put me on a tenure-track position. I now understand their dilemma because academic institutions do not often hire their own PhD graduates, especially one with no academic degrees from another university. I am also of the same philosophy that academic diversity is essential to the reputation and growth of a university.

The basic mission of ETSU during 1968-9 was to train their students to become good teachers for the entire state of TN. The Eastern part of TN is immensely beautiful, and with other 2 cities Bristol and Kingsport, they are jointly called the Tri-Cities. After I taught 4 courses in the Fall Quarter 1968, some the companies in Kingsport hired me to teach a graduate course in Applied Mathematics during the evening hours of 6:00pm-7:30 pm. I used the book by Francis B. Hildebrand (Advanced Calculus for Applications, Prentice-Hall, 1962) from which I had learned Applied Mathematics from our own Dr. Ernest Ikenberry during the academic year 1962-1963; sadly, professor Ikenberry retired from our Math department in 1975.

In the Winter Quarter 1969, during February I received a letter from Dr. Brooks basically stating and I quote: "Saeed in consultation with Dr. Cox, who is now our dean of engineering, we want you to come back home and will offer you the tenure-track assistant professor position and will match whatever your salary will be at the ETSU in the Fall Quarter of

1969”, end of quote. Of course, I could not wait to talk to Dr. Brooks on the phone; so I called the next day and Dr. Mize answered and said “I know you are anxious to talk to George but he is presently travelling on behalf of Auburn University; as soon as (ASA) he comes back he will personally call you”. Roughly a week later, Dr. Brooks called in an evening and after pleasantries, this is what he asked me first “have you yet published your dissertation?” I answered no and he said “ASA you get back to Auburn, we want you to publish your dissertation. I answered that should not be a problem. I arrived in Auburn in early June 1969, and my ex-wife had already rented an apartment for us (while our house, at 215 S. Cedarbrook Drive, was being built). I could not wait to see Dr. Brooks the following morning. When I arrived in his office (the first floor of Dunstan Hall), both Dr. Brooks and Dr. Rex K. Rainer, Sr. graciously welcomed me, and Dr. Brooks said “Saeed you could not return to Auburn early enough because I have two sections of IE211, one section of LP, and one section of IE312 each with at least 40 students and no one to teach them. My memory is not clear about the above four courses; all of our faculty during 1969-1979 taught in at least two areas. Dr. Hool was either teaching IE333 and had other academic responsibilities that Summer Quarter 1969, or he may have gone to the Midwest of the USA where he did consulting in Summer Quarter 1966. [Coincidentally, June 1969 is when Leon F. McGinnis and Dr. Brooks’ daughter (*Marcia*) got married.]

Our IE Department during the years 1964-1967 offered only a BS degree and pre-requisite courses were offered every quarter. I was informed by Ms. *Marcia B. McGinnis* that our MS degree program started on January 1, 1968, announced by the late Dr. Wilford S. Bailey who was the AU vice president of Academic Affairs. The following is an exact quote from *Marcia* emailed to me on 10/10/2020.

“In his lifetime, Dr. Brooks’ 1950 personal mission was validated in the “Citation for Fellow Award for Dr. George H. Brooks AIIE - 1972.” It read:

“We honor you for your many impressive achievements and contributions as an engineer, educator, consultant, author and lecturer in the profession of Industrial Engineering.

“Your substantial contributions to education of others have guided many toward successful careers in the field. You have exercised expert and

sound leadership in developing and maintaining an excellent Industrial Engineering program at Auburn University.

“Your valuable participation in local and national AIIE activities is indicative of the many substantial Industrial Engineering contributions you have made.

“Being a man of substance, character, and integrity - a true and devoted professional in our field - we are honored to recognize you, DR. GEORGE H. BROOKS, as a Fellow in the Institute”

The following year, Brooks' response to his election to vice-president, Region VII, AIIE as stated in the *Auburn Bulletin* February 1973, best sums up Brooks' response to his own as well as to the Industrial Engineering Department's achievements: “I feel that this high office recognizes the excellence of Auburn's Industrial Engineering program perhaps more than my own past services. National officers are all drawn from outstanding companies and universities, representing a broad cross section of the nation's total economy.”

Finally, Dr. Brooks always had a strong sense of responsibility, keeping his word, and being respectful of those who mentored him along the way. He was friends with two of the pioneers of Industrial Engineering, Dr. Lillian M. Gilbreth, whom he met while at Purdue, and Col. Frank F. Groseclose. He had both at his home and within functions where he worked.

Groseclose, the first Industrial Engineering department head of Georgia Tech, charter member of AIIE, and founder and original Editor-in-Chief of The Journal of Industrial Engineering, had mentored Brooks from their first meeting at Georgia Tech in 1949. Brooks invited Groseclose to Auburn after he had retired from Georgia Tech in 1966. Groseclose, appropriately, taught the “Introduction to Engineering” class. The friendship that Frank and George shared is seen in Frank's note to George in reference to his recently received AIIE Fellow. Groseclose wrote, “Nice to see your smiling face on page 35 of August 1972 IE Journal - extra nice to learn of the reason for it. Best regards to all I.E.s and families at Auburn. Y'all come, Frank Groseclose”

In September 1978, Dr. Brooks, in a letter to Dean Haneman, wrote that he felt that it was time to return to “teaching, research, and related activities.” In December 1, 1981, he was named Professor Emeritus of Industrial Engineering effective January 1, 1982. President Hanly Funderburk wrote, “This action..is an expression of our deep appreciation for the long and valuable service which have rendered to Auburn University.” He remained at Auburn as a full-time teacher until December 1981.

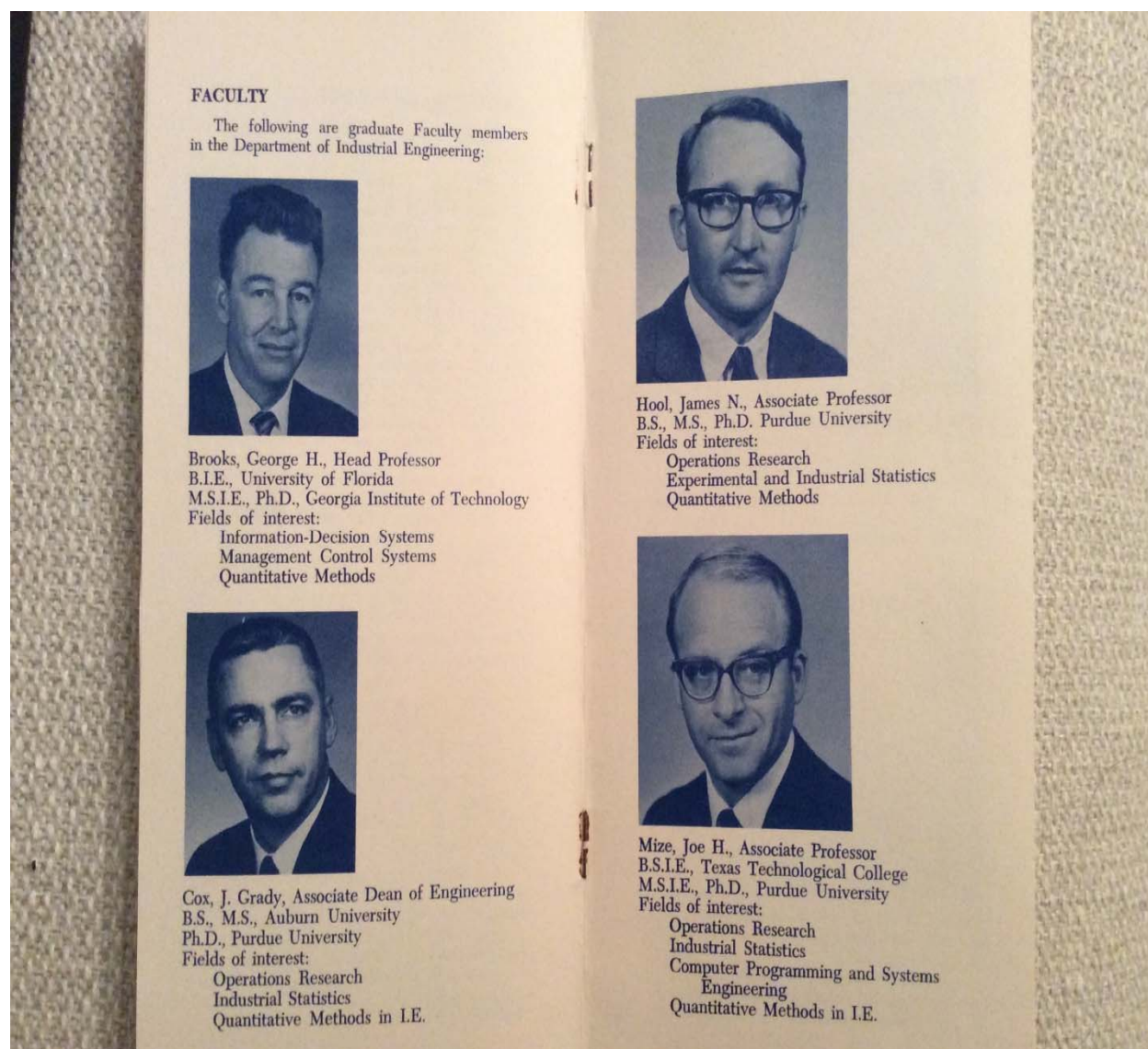
Then, he and Mrs. Brooks returned to the couple's favorite state of Florida. There at the Industrial Engineering Department of the University of Central Florida, he would continue doing what he loved - teaching, working with graduate students, and learning a new computer language, C++ as well as Spanish. Brooks embodied what he believed



and had demonstrated at Auburn - learning is an ongoing, changing, and interesting endeavor for your entire life.

Respectfully, Marcia Brooks McGinnis, B.S.Ed., M.ED. Auburn University” end of quote.

The following three news-clips (on pages 9-11 from *Marcia*) show the six original faculty members beginning in 1964, and the five students who graduated in August 1972 with the OSHA option.





The above four professors were our IE faculty members during the years 1964-1969.



Rainer, Rex K., Associate Professor  
B.C.E., M.C.E., Auburn University  
Ph.D., Oklahoma State University

Fields of interest:  
Quantitative Methods in the Construction  
Industry  
Operations Research



White, Charles R., Associate Professor  
B.S.M.E., M.S.I.E., Ph.D., Purdue University

Fields of interest:  
Mathematical Programming  
Production Control and Simulation  
Operations Research

#### GENERAL GRADUATE CURRICULUM DESCRIPTION

The graduate curriculum is designed to elaborate on, at a more theoretical level, fundamental topics in industrial engineering, and to present and develop more advanced decision-making and design principles and methods than are considered in the undergraduate program. The curriculum is basically concerned with the quantitative aspects of decision-making and design. A strong emphasis is placed on classical statistical analysis procedures, mathematical programming methods, and systems analysis and control methods.

Throughout the graduate program the student is allowed to pursue that sequence of courses that best suit his needs and likes as determined jointly by the student and his advisor(s). If necessary a student will be required to precede his basic graduate studies in industrial engineering with a sufficient number of preparatory courses to develop his mathematical and engineering competence to a level consistent with that required for industrial engineering courses. Each student is constantly critically evaluated on his ability to communicate in writing and he must complete a creditable thesis in order to receive the graduate degree. At all times each student is under the direct guidance of a faculty advisor or counselor.

#### ADMISSION PREREQUISITES AND RESPONSIBILITIES

An applicant seeking a major in Industrial Engineering must have a bachelor's degree from an institution of recognized standing. Applications from students in other fields such as mathematics, physics, and the social sciences are encouraged. If a student does not possess an engineering degree from an ECPD accredited school, he may be required to take the advanced section in engineering of the Graduate Record Examination. Deficiencies in quality or quantity of general or professional prerequisite subjects must be removed before the student may proceed with graduate work dependent thereon.

Students must present an Industrial Engineering major of at least 33 quarter hours including thesis credit and a minor of 12 quarter hours. The

Date: 1968



Graduated on August 25, 1972.

Pages 12-13, from professor McGinnis, show the actual appreciation of Dr. Brook's service to Auburn University during the years 1966-1981.

AUBURN UNIVERSITY  
AUBURN UNIVERSITY, ALABAMA  
36849

OFFICE OF THE PRESIDENT

December 1, 1981

Professor George H. Brooks  
747 Brenda Avenue  
Auburn, AL 36830

Dear Professor Brooks:

It is a pleasure for me to inform you that, upon the recommendation of appropriate University officials, I am naming you Professor Emeritus of Industrial Engineering. This action is effective as of the first day of January 1982, and is an expression of our deep appreciation for the long and valuable service which you have rendered to Auburn University.

As you retire, I want to extend on behalf of all of us at Auburn University our very best wishes for many happy and useful years of future service. We look forward to continued close association with you and to your sharing in the activities of this institution.

With deep appreciation and every good wish, I am

Sincerely,



Hanly Funderburk  
President

HHF:mjw



# Auburn University

Auburn University, Alabama 36849  
School of Engineering and  
Engineering Experiment Station

Office of the Dean and Director  
108 Ramsay Hall

December 4, 1981

Telephone (205) 826-4326  
ACTS: 923-4326

Dr. George H. Brooks  
Industrial Engineering  
Auburn University Campus

Dear George:

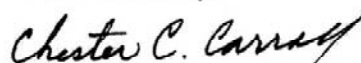
Please let me extend my profound appreciation to you for the 15 years of dedicated service which you have rendered to our School of Engineering and to the Department of Industrial Engineering in particular. The establishment of the doctoral program and the growth of the department in other areas are certainly tributes to your leadership.

The stability which you rendered to the department and the wise counsel which you gave to the young faculty members in particular will be long remembered by all of us.

Our best wishes go with you and Hope as you relocate in Florida. I hope that you will find your new work to be both rewarding and challenging, and we all hope that you will come back to see us whenever possible.

Once again, we all appreciate the many ways in which you have contributed to our School of Engineering.

Yours sincerely,



Chester C. Carroll  
Interim Dean of Engineering

nfb

cc: Dr. V. E. Unger

Here is the list of our faculty during summer Quarter 1969 through Summer Quarter 1975 based on my long-term recollection and news clippings from Marcia B. McGinnis: (1) Those with a PhD: Drs. George Brooks, Rex K. Rainer, Sr., James N. Hool, Leo Antony Smith, Dennis B. Webster, Victor Zaloom, Charles R. White, John Miller, and Dave Brown (2) Those W/O a PhD: professors Bruce Herring, Louis Trucks, Claude Layfield, Don Denholm, Charlie Cobb, Colonel Boyd who taught Engineering Economy, Mr. Herman Plot, Professor Morgan, and 3 or 4 professors from our IM some of whose offices were still in the old Machine-Shop building. Professors Trucks and Herring both attended Oklahoma SU (at the strong encouragement of Dr. Brooks) and earned a PhD in IE.

Dr. Brooks then started to lay-down the foundation to create our PhD program roughly during 1974-1975. The following are the professors who cooperated with Dr. Brooks: Drs. Bruce Herring, James N. Hool, Tony Smith, Dennis Webster, Dave Brown, and Victor Zaloom. I became a US citizen on May 2<sup>nd</sup>, 1975 and my two witnesses were Drs. Brooks and James N. Hool.

During September 1978 Professor Brooks called a faculty meeting and told us that during his tenure our IE Department was transformed from a 4-year BS degree program to offering a PhD degree, and it is time for someone else to elevate it to a higher level". (See the text from Marcia on the previous page). He then formed a search committee who selected Dr. Vernon E. Unger, from Ga. Tech, to become our department head beginning the Fall Quarter 1979. Coincidentally, September 1978 must have been the Fall Quarter when

*Mr. Timothy D. Cook enrolled as a Freshman in the Auburn University's IE department.*

During the years 1979-1982 (Mr. Cook graduated in 1982), our IE department was still housed in Dunstan Hall (3 floors), and starting in 1980 the following were the professors (with a PhD degree) from whom Mr. Cook may have taken courses: Drs. Edward V. Unger, George H. Brooks (deceased), Dave Brown, Robert L. Bulfin (Emeritus), James N. Hool (deceased), Bruce Herring (deceased), Chan S. Park (Emeritus), Dennis B. Webster, Leo A. Smith, Louis Truck (deceased) ), Charles R. White, and Saeed Maghsoodloo.

10/27/2020

5 minutes with Grady Cox | The Auburn Engineer

# AUBURN ENGINEER

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by  
Jim Killian

## 5 MINUTES WITH GRADY COX

POSTED IN 5 MINUTES WITH



*Grady Cox served successful terms as dean of the School of Engineering from 1969-72, and again from 1979-80, when the college began to evolve into what it is today. He also spent several years in Auburn's central administration as executive vice president. Cox reflects on his time at the university, and shares what life is like now as he continues to live in Auburn, the town he loves.*

**JK:** You were born in North Carolina and grew up there as well. What brought you to Auburn?

**GC:** I was stationed in the hospital corps at Sampson Naval Station in New York in 1945 when I tested and was accepted for officer training . . . there was no room for the program at NC State, so I chose APL. The only thing I knew about Auburn was that they had beaten Georgia's powerhouse football team at some point – and that it was a co-ed school. I arrived by train and soon found myself living in Graves Center. It had been repurposed by the Navy ROTC unit, and I went to classes in full uniform. The second day there I was in a long registration line, and I asked to go into pre-med, which is what I was in at UNC Chapel Hill before I joined the Navy. They told me I had to pick a different major, one that was suitable for a line officer or an engineering officer. I didn't have much time in that line – I quickly told the officer in charge that I liked chemistry and I liked math . . . so he checked the box for chemical engineering, and said, "next!"

I ended up enjoying it, and after graduation and my Navy discharge from NAS New Orleans, I worked at a couple of jobs, including stints at Vitro Corporation and Southeast Sand and Gravel. In March of 1949 I reentered Auburn in grad school, first in chemical engineering but ultimately in mathematics, where I was also given an instructorship. I received my master of science in mathematics in 1950, and then taught another year before accepting a job at the Air Proving Grounds at Eglin Air Force Base.

**JK:** Did you think that experience would represent your Auburn connection from that point out, or did you plan to return?

**GC:** My supervisor at Eglin encouraged me to get a doctorate, so in 1953 I moved back to Chapel Hill to get a Ph.D. in math. I finished the coursework there, passed the preliminary exams and co-authored a paper with my major professor, but failed to satisfy him in terms of my dissertation. That was disappointing, and I returned to my job at Eglin with mixed emotions. Then I got a call from Floyd Smith in Auburn's Department of Mechanical Engineering, and got hired on as an

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10/27/2020

## 5 minutes with Grady Cox | The Auburn Engineer

associate professor there in 1958. Another turning point came when Fred Pumphrey was named as dean of engineering. My wife Jean and I came to know him well, and in fact, played bridge with him frequently. He encouraged me to go to Purdue on an NSF fellowship, where I studied for a Ph.D. in industrial engineering, and I was successful there, graduating in 1964. I returned to Auburn as head of the Department of Industrial Management, which was located in the School of Engineering.

**JK:** Tell us how that worked out.

**GC:** Dean Pumphrey was one of the members of a committee charged with bringing the School of Engineering back on course when several programs lost accreditation in 1957. Working with the Engineers' Council for Professional Development [now ABET – Ed.] we developed a sound program in math, chemistry and physics along with a humanities core. In terms of the industrial management curriculum, we bulked up the math component and made some other changes that strengthened its base in engineering, and it became industrial engineering. We had to build a new faculty as well, and over time we did just that. I followed Pumphrey as dean in 1969 and stayed in that position until 1972; Vince Haneman came in after I did, serving six years, and then I returned as dean from 1979 through 1980.

**JK:** Then you went to the central administration during Hanley Funderburk's term as president . . .

**GC:** Yes, I served in the early '80s as the university's executive vice president, during a period that was really tumultuous as far as the feeling on campus. Many faculty members were unhappy with the administration at the time. You may recall that I left that position, along with Taylor Littleton, who was then the vice president for academic affairs – it was a tough decision. I took a year's leave of absence before I returned to Auburn in 1985, and taught until 1992. After I retired I continued a relationship with UAB until I was in my early 70s, also consulting with industrial firms. Although I still drive today, I finished up in Birmingham because I didn't feel the need to get up at 4 a.m. on weekdays, drive two hours, and get back to the house late at night.

**JK:** What is the largest change that you have seen in the college over the years?

**GC:** I think it's important to look at the road we have traveled to becoming a major research institution. When I came to Auburn, there simply was no research. Dean Pumphrey changed that – he went to Huntsville and formed relationships with NASA and the Army Missile Command, and developed funded projects that for the first time allowed some of our faculty release time from teaching to do research. These were mission-oriented projects that didn't result in publishing papers – but they were the baby steps that preceded just that, to the point where we now have an immensely successful research program with nationally recognized papers published by our faculty.

I think it is also important that we worked hard to bring salaries up – early in my career at Auburn I remember Dean Pumphrey on more than one occasion combining two positions to pay for one engineering faculty member. When I joined the faculty, I only made half of what I was earning in industry, but I felt okay about it because we were building something from the ground up. Eventually, and thankfully, the raises came or I could not have stayed. There were many successes over these years, such as formally moving chemical engineering into the School of Engineering as a department.

**JK:** What has pleased you during your time at Auburn?

**GC:** Well, as you know, I moved in and out of administration over the years, from the department level to the university level. My journey in upper administration was both rewarding, and to be honest, trying at times, but nothing has ever thrilled me more than teaching as a full professor. I have always enjoyed teaching, I have always enjoyed the students and I have always enjoyed the classroom. When you open the door to a student's perception, when you see the light come on in their eyes – nothing beats it. It's just the best job.

**JK:** You have impacted hundreds, even thousands of students. What is left for you now?

**GC:** I'm enjoying myself as I approach my 89th birthday. My wife Jean and I stay active socially – we still play bridge every week in a group of six tables – and we still get some travelling done. I have a son in the Atlanta area, and a daughter in Birmingham, so we visit them. If there is one thing that I really don't do much of now, it's getting out at night too much, so that's a concession to the times. I have always enjoyed living in Auburn because of its location and weather, and have resisted moving elsewhere. I have had a couple of knee surgeries, and my back always reminds me that it's there – so I have made the kinds of adjustments that need to be made. I feel grateful to have had the kinds of opportunities that I have had, and to work with students on a regular basis – nothing is more energizing.



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