

WELCOME

Welcome to the first issue of 'Radical Times' (also known as \sqrt{x}), a newsletter published by the Department of Mathematics at Tennessee Tech.

DEPARTMENT NEWS

Dr. Allan Mills was named interim chair of the Department of Mathematics for the 2006–2007 year, replacing Dr. Rafal Ablamowicz, who was chair of the department for eight years. Allan joined the TTU faculty in 1995 after graduating from LSU. He is a fan of LSU athletics and enjoys watching college sports, especially Tech basketball. He spends a lot of time watching his two sons play baseball and basketball, but not enough time teaching them to play golf. He likes to read mystery novels and he tends to eat more of his wife Dawn's Cajun cuisine than he should.



NEW FACULTY

Dr. Amy Chambers is originally from McMinnville, Tennessee. She attended Lipscomb University in Nashville, TN and earned a B.S. in Mathematics Teaching. She then went to Middle Tennessee State University, obtaining an M.S. in Mathematics. She received her Ph.D. in Mathematics from the University of Colorado, Boulder in 2006. Amy's husband, Clay Chambers, is also from McMinnville, TN and works as a computer programmer. Their son, Byron, is three years old and is presently obsessed with superheroes. Amy loves doing anything active outdoors, and her favorite endeavors are hiking in the mountains and wildlife-watching.



Dr. Sam Narimetla is originally from South India. He received his bachelor's degree in Mechanical Engineering (M.E.) from Regional Engineering College, Suratkal, India. On 8/8/88, he came to Cookeville for graduate studies and finished both the masters and doctoral degrees in M.E. from Tennessee Tech University (TTU). Following this, he held a variety of positions in different institutions—a design engineer (Gabriel Ride Control), a



software engineer (Arvin Meritor and Servpro), faculty in the M.E. department (TTU), and a faculty in the Math department (TTU). His wife, Madhu Gandhi, is originally from North India (Udaipur), and she also teaches in the Math department here at Tech. They have an eight-year-old daughter, Mohera, who likes all things Disney. Sam enjoys playing Racquetball, Tennis, Billiards, and Cricket.

Mr. Tommy Elliott is from Dover, TN. He received his B.S. in Education with an emphasis in secondary mathematics from UT Martin in December of 1999. He taught at the high school level for four and a half years, and then returned to college, earning an M.S. in mathematics from TTU in May of 2006. He enjoys sports (playing and watching)—preferably baseball, softball and football but has been known to watch curling matches during the Winter Olympics. Tommy also has a love of music. At one point he played the tuba, but now he tries to keep up with his vocal interests, and is involved in the recording process with some small groups from home.



Ms. Mendy Morrison is originally from Putnam County, Indiana. She received her bachelor's degree in mathematics from the University of Evansville (Indiana) in December of 2001. She then taught high school for a year and a half at North Putnam High School, her alma mater. After teaching high school, she decided to pursue a master's degree in mathematics, which she earned at Oklahoma State University in December of 2005. Mendy married Mason Morrison in July of 2006 and then moved to Tennessee later that month. He is a middle/high school English teacher.



MATH CLUB

The Math Club at TTU kicked off the Fall semester with a meeting in September to meet each other and to elect officers. The officers for the 2006–2007 academic year are: Anna Ablamowicz (President), Matthew Bedford (Vice President), Scott Young (Secretary), and Jason Smotherman (Treasurer). Our officers then planned and hosted a picnic in October for the Math Club and Math faculty. It was a lot of fun, and now we know what good cooks we have among us! In October, we were fortunate to have Katie Fanning, a TTU alumnus, come visit us. Katie now works for Science Applications International Corporation, and she shared her personal experiences and gave the students information on

available internships in the space industry. We finished off the Fall semester with a visit from Johnny Feng and Patrick Vernon, two TTU alumni, now working on Ph.D. degrees in Mathematics at Tulane University. They shared information with our students on the graduate program at Tulane and on the process of obtaining a graduate degree in Mathematics in general. This was a unique opportunity for our students to hear about graduate programs from the perspective of graduate students, and we learned a lot from Johnny and Patrick's visit. To kick off the Spring semester, we ordered t-shirts designed by Beca Lewis and Anna Ablamowicz. Many thanks to those two members who helped us remember to "Eat, Sleep, Math."

In January, Corbett Coburn, a TTU alumnus, visited the Math Club. He is currently working in the United States patent office, and he spoke to our students about careers in four areas: cryptography, law, gaming design, and patents. His sharing of his wide-ranging experiences was very informative for our students.

In February, Vickie Evans of Bryan, Pendleton, Swats, and McAllister spoke to the Math Club. Ms. Evans works in the HR department of that actuarial consulting firm and she spoke to us on "A Day in the Life of an Actuary." She gave the students valuable information on what an actuary does, as well as information on job opportunities.

In March, Professor Boris Kunin from the University of Alabama, Huntsville visited the Math Club. The title of his talk was "Real World Through Complex Glasses." He discussed three examples of how extending certain values to complex numbers ("complexification") provides insight into the nature of the phenomenon. We hope to complete the semester with a traveling dinner involving several faculty members.

STUDENT CONTESTS AND AWARDS

Virginia Tech Regional Math contest—October 28, 2006

Dr. Yung-Way Liu organized this locally and the competitors were Quinton Westrich (Physics and math major) and Jason Smotherman (Math major)

Putnam Examination—December 2, 2006

Dr. Jeff Norden was the local coordinator for the team of Brad Schwer, David Cook, and Scott Young, who took the exam.

COMAP competition—February 8, 2007

Dr. Andrew Hetzel was faculty advisor for the team of Andrew Walker (Math and CSC major), Ferrol Aderholdt (CSC major), and Gavin Button (ME major)

The 2007 Integration Bee

was held on March 29 in the Foster Hall Auditorium. There were 13 participants who matched wits and integration skills. At the end of an exciting competition, Aaron Hogancamp took first place, with a cash award of \$125, Eric Weber was second (\$50 award), and Brent Smith came in third (\$25 award). Drs. Motoya Machida and Dr. Rick Le Borne were the coordinators, Dr. Brian O'Connor the emcee, Drs. Yung-Way Liu and Richard Savage the judges, and Mr. Tommy Elliott ran the computer for the visuals that were set up by Dr. Michael Allen. A big thank you goes to First Tennessee for sponsoring the event and providing the prize money.



Integration Bee award ceremony (from left to right):
Aaron Hogancamp, Eric Weber, Brent Smith,
and Dr. Motoya Machida

Who wants to be a mathematician

John Cooper (Oak Ridge HS) and Will Pickering (The McCallie School) each won \$2000 from the AMS and were the big winners among eight contestants when Who Wants to Be a Mathematician came to Tennessee Technological University September 21, 2006. The competition was sponsored by the American Mathematical Society, and was hosted by former TTU math professor Dr. Michael Breen, who journeyed to Cookeville from the national office of the AMS in Providence, RI. About 100 people from Middle and East Tennessee enjoyed a morning of mathematics that began with the talk, "When Does $1 + 1 = 0$?", by Dr. Andrew Hetzel.

The eight contestants were: Dalton Banks (Oak Ridge High School), Dylan Bunch (Baylor School), Brad Cagle (Bledsoe County High School), John Cooper (Oak Ridge High School), Kyle Davis (Montgomery Bell Academy), J.D. Ingraham (Lenoir City High School), Gokul Mohan (Ravenwood High School), and Will Pickering (The McCallie School). All contestants were seniors except for Dalton Banks, who is a junior.

Will won the first game, and John emerged victorious in the second. They then went to the bonus round for a chance at \$2000, and both answered the question correctly, each winning the big prize. The other contestants received software or books for their efforts. Local organizers for the event were Dr. Allan Mills and Dr. Brian O'Connor.

Tennessee Tech was one of the testing sites for the *51st Tennessee Mathematics Teachers Association High School Math Contest* that was held on April 17, 2007. Dr. Allan Mills was the test center chair. Prizes were given to the top finishers in the tests covering Algebra I, Algebra II, Geometry, Precalculus, Statistics, and Calculus, and the top ten scorers in each category were acknowledged at the awards ceremony in Derryberry Hall Auditorium, emceed by Dr. Brian O'Connor. The top three finishers in each of the six categories are as follows:

Algebra I

- 1st Franklin, David—Livingston Academy
- 2nd Bonning, Bo—Livingston Academy
- 3rd Hannah, Scott—Avery Trace Middle School

Algebra II

- 1st Chakrabarty, Sonia—Avery Trace Middle School
- 2nd Badoe, Daniel—Avery Trace Middle School
- 3rd Austen, Jesse—Avery Trace Middle School

Geometry

1st Hill, Aaron—Cookeville HS
2nd Jiang, David—Avery Trace Middle School
3rd Tu, Tammy—Cookeville HS

Precalculus

1st Mauldin, Justin—Upperman HS
2nd Dowell, Stanley—Smith County HS
3rd Riches, Jessica—Cookeville HS

Statistics

1st Thomsen, Kyle—Cookeville HS
2nd Moss, Frank—Cookeville HS
3rd Hannah, Emory—Cookeville HS

Calculus and Advanced Topics

1st Lee, Richard—Cookeville HS
2nd Haberkamp, Melissa—Cookeville HS
3rd Fan, Ying—Cookeville HS



David Cook

Graduating senior, David Cook, has been selected as the 2007 recipient of the College of Arts and Sciences Liberal Arts Award, probably the first mathematics major to win the award. The committee was impressed with his undergraduate research. The fact that he will earn a degree in computer science along with a mathematics degree and a minor in German didn't hurt his case.

GIRLS GALORE!!!

Drs. David and Wendy Smith had their second child, Katherine Noelle Smith, who was born at noon on Friday, December 29. Katherine weighed 8lb 2oz at birth. Her sister Margaret is now learning how to share the attention.

Dr. Andrew Hetzel and his wife Kristi are the new parents of a big baby girl. Katherine Grace Hetzel was born Sunday, January 21st at 11:20 am, weighing in at 9lb 9oz.

Math grad students Troy and Sheela Brachey are the proud parents of little Ms. Evelyn Grace Brachey. She was born Friday, March 16th at 7:37 pm (after a 12 and a half hour delivery), weighing at 6lbs. and 11 oz. and 19 $\frac{3}{4}$ " long.

EMERITUS FACULTY INTERVIEW

Ms. Evelyn Brown was an assistant professor in the math department at Tennessee Tech from 1954 to 1998. After retiring, Evelyn remained in Cookeville. She graciously agreed to be the first person interviewed for \sqrt{x} . On December 18, 2006 she sat down with Dr. Richard Savage, currently Professor of Mathematics in the department, to give her prospective of her almost 50 years at TTU (and TPI before 1965).

R. Savage. I thought it would be interesting first of all to ask how you [happened] to come to Tennessee Tech.

E. Brown. I grew up in Clay County, Celina, and I'm not sure I knew there was any other college. (That's not quite true.) But, I came to Tech as a student in 1951, and when I graduated in 1954 I went to work in St. Louis for McDonald Aircraft, and I hated it! Didn't do anything. Maybe if I had stayed longer I would have. But in September I got a phone call from Dr. [Gordon] Pennebaker who was in charge

of Arts and Sciences, he was not dean then, head of Arts and Sciences, and asked if I'd like to come back and teach math that fall. And I said yes!! I didn't bother to ask if they were going to pay me.

R. S. So how long had it been since you graduated, just the few months?

E. B. Just a few months. Then I got my Master's in the summers after I started teaching. Who knew that I would stay 44 years!?! It just went so fast!

R. S. Who was chairman of the department at that time?

E. B. Dr. [R.H.] Moorman. When I was a student I worked in his office. That's probably why I ended up at Tech teaching. We didn't have air-conditioned buildings. We had all the windows open in the summer in the building. We were on the third floor of Henderson Hall. And you could be halfway from the Student Center, [now South Hall], and you could hear Dr. Moorman's voice booming. He could scare you to death in class. If you asked a question about problem so and so you didn't get an answer; you went to the board.

R. S. So you had him when you were a student and when you were on the faculty.

E. B. Yes. If you asked a question, you went to the board and you worked as far as you could and then I guess the class helped at some point. At first that was very intimidating but after awhile you kind of liked the idea. But he was something else; he was sort of a legend around campus. It was such a shame that he kept teaching after his health problems, because there is a whole group of students who remember a shell of Dr. Moorman. I'm sorry about that. I know the last few years he taught I shared an office with him over in Derryberry Hall. He was just in a fog all the time. But in his prime he was something else. He was a huge man. He was a great teacher I thought.

R. S. It sounds like he pushed the students.

E. B. Oh he pushed the students all right. I was trying to remember who else was in the Department then. Grady Holt was one of them. Grady Holt and Dr. Moorman didn't always see eye to eye on things. And I remember when Grady got another job and decided to leave; he decided he would leave in the middle of the spring term. But when he left Jim Doran replaced him. Jim came in the middle of the quarter. I remember that so well because I was in the class when Jim replaced Grady Holt. I'm sure Grady planned that and worked hard so he could just leave. He didn't care. I didn't really know all the things that went on, but they didn't really like each other. Then Mr. Henderson of the Engineering School would come up. Then you had, I don't even remember the numbers of the courses, but you had I guess it was just algebra, then trig, then analytic geometry in the freshman year. Algebra in the fall, trig in the winter, and analyt in the spring. And if you didn't pass then you waited until the next year to take it. Occasionally they would put a follow up course but not often. Well, Henderson would come up. He and Dr. Moorman would argue about it. Dr. Moorman would say, we can't do it. We don't have staff. Henderson wanted his engineers to get that course whenever. He would say, 'Well Doc, I guess we'll just have to take over the Math Department.' But pretty soon Doc would work it out because I guess they had to. It was something to hear them.

R. S. Would you say Dr. Moorman was a legend because of his teaching style?

E. B. That was a lot of it. I think he was well liked.

R. S. Who came after he did?

E. B. [Ralph] Boles I guess was next.

R. S. I remember Dr. Boles. He was chairman when I was a student.

E. B. I guess he was after Moorman. I can't remember anybody in between. We were still in Henderson Hall when Dr. Boles came as chairman.

R. S. Did he come in as chairman?

E. B. Yes. Doran and [Freeman] Ward were on the faculty then and [Ron] Sircy, when we were in Henderson. Ronald Sircy and I were both students in 1954. Freeman Ward was on the faculty when I was a student. I had him for College Geometry. He was very good, very methodical. He was careful about everything. I had Jim Doran for Differential Equations. So there were four of us there many, many years.

R. S. About how big was the department when you started?

E. B. Probably not over six or eight. I cannot remember. Fewer than ten anyway I am sure. We had heavy teaching loads too. Sixteen hours was standard. Two fives and two threes. Sometimes you got six threes. Wasn't that fun?

R. S. Calculus back then of course would have been five.

E. B. Yes. And the threes were the business math and others. We had something called 105 and Dr. Moorman wrote the book for that. I remember in a staff meeting there was some college algebra book I think that a committee had collaborated and written. It was a committee from all over the country and wasn't a very good book. But in the staff meeting he'd say, 'All in favor of adopting this book say 'yes', all against say 'I resign'.' We used it! It was terrible.

R. S. Sixteen hours seems like a pretty heavy teaching load.

E. B. And four classes with 35 to 40 students each. Many times I've had up to 40 in a class to start with.

R. S. Did you teach your classes in Henderson Hall at that time?

E. B. Yes. I guess we had everything in Henderson for a while. Then when we moved to Derryberry some of us stayed in Henderson and some went to Derryberry for a while. Finally we all got to go to Derryberry.

R. S. Did you share Henderson with other departments?

E. B. The School of Engineering was in that building and the Heating Plant. We didn't have any of those engineering buildings. I know Leighton Sissom's office was on the third floor down the hall. That was when he first started teaching before he got his Ph.D. and so forth. One time, maybe the first week of the term, he already had all his exams including the final all made out. [I couldn't] do that. I don't know that you'd know what you would want to put on it. Nobody ever talked about research then. It was all teaching. I don't know how long it was before somebody even came in that did any real research and publications. Maybe a few years later. But at the very beginning I didn't hear anything about it. The emphasis, even [President Everett] Derryberry, stressed that he was more interested in teaching. I can't remember... there were a few people who were in for a year or two and then left, but so many people that came stayed. I think that some of the administrators would come and think they were using it

as a stepping-stone and then either they couldn't or they get hooked on the lifestyle in Cookeville.

R. S. What about the type of courses that were taught? I'm sure you taught things before calculus. What was it like?

E. B. We had remedial courses. We had some sort of remedial algebra course. We had a remedial plane geometry. We had a solid geometry and I believe it was a noncredit course as well. My friend Betty Budd and I shared an office and one term I think she had five sections of solid geometry. The last time I saw her she said she ran into some student that she had had 40 years ago. She said of course he was in one of those blank solid geometry courses that she hated so much. But the first few years I taught we had a lot of Korean War veterans. Many of them were not prepared at all so they started at the very bottom. But they worked so hard! They started with Math 91, whatever that was, maybe arithmetic and introduction to algebra, and several noncredit courses. Pretty soon they got that background and they just went through it. I'm spoiled because they wouldn't give up. Now if they make a low grade on the first test they quit. But those guys worked so hard. Of course not all of them but a lot of them did. It really meant a lot to them. But we had all those and then just an algebra course. We didn't have algebra-trig. After algebra came the trig course. Before calculators we used the trig tables. We used half of our time teaching them how to look up things in the tables, interpolate.

R. S. Lost skills aren't they?

E. B. Yes. Solving triangles using the law of tangents. And I don't suppose anybody ever uses it any more. On some of those problems you would use logarithms to do the computation. You'd have to look up all this then you'd have to find the antilog. They'd do it. But it's just amazing how much stuff that was just busy work. We didn't have anything else.

R. S. So a good part of your teaching was courses below calculus?

E. B. Yes. Maybe the biggest part. Because the only people who took calculus were the math majors and engineers, chemistry and so on. There weren't a lot of upper division courses. Those were just for the math majors. There was no graduate program.

R. S. Were there several math majors?

E. B. Not too many. I can't remember how many at any particular time. We had some good ones though.

R. S. What sort of courses did they offer for the math majors?

E. B. Once we got through the calculus there was something else, not advanced calculus but there was another calculus course. I don't know what it was called. College Geometry and History of Math. There must have been some others. I remember we had a business math course. It was literally business math. You did problems on annuities, different interests, and all this sort of thing. We used a little book that was written by Dr. [R.O.] Hutchinson who was a former head of the Department. He left before I came. I didn't know him. It was a little paperback book. I don't know who published it but it must have been published locally. And again you used tables to find all this stuff. Just think about it, with no calculators.

R. S. I taught History of Math a few years ago. I was telling my students about a slide rule. They had never seen one. It was like an antique thing.

E. B. We had a slide rule course. I think it was a one-hour course. With that big demonstration sliderule. Is it still around the Department?

R. S. I don't know. [*Editor's note: It is.*]

E. B. But it was a one hour course I remember and I took it, but I didn't believe any answer I got. Even when you had the class later on some of the freshmen thought if they just knew how to use it they could do anything with a slide rule. They could do a lot more than I could! Just a few years ago, talking about doing things by hand, Jim Rose, when he was still over in engineering, called me one day. He said, 'Do you remember how to do the square root by hand?' I said of course and he gave me something to do. I sat there and looked. I said, 'I'll call you back in a minute.' I had to figure out again how to do it. We used to do all that.

R. S. I guess engineering students back then would carry their slide rules around.

E. B. Oh every engineer had it on his belt. Like they have a calculator and cell phone today. That's another reason I'm glad I'm not teaching. Cell phones!

R. S. In the Department at that time most of the faculty would have had a Master's Degree, right?

E. B. I guess Dr. Moorman was the only one in the department with a Ph.D. at that time.

R. S. Do you think the courses were more demanding then or now?

E. B. I think they are more demanding now. I think maybe the students were not as well prepared. We think they are not well prepared now, but I think we had an even worse situation then. We had to spend more time on background and so forth. Like the Korean War veterans, so many of them never had any idea of going to college. Then suddenly with the GI Bill they did, and they worked and made it up. But the level of courses was not what it is now. Like we had a five hour course in trig. Now think what you would do in a five hour course in trig. But in that five hour course in trig you did an awful lot of this busy work. Logarithms and trig tables, and solving triangles. I guess I do sort of believe in grade inflation. I don't know if it's right or not. I think not nearly as many people came out with straight A's as they do now. That may be because now they are much better.

R. S. That's an interesting question. Are they better or do we set the standards differently?

E. B. I don't know what happened to me over the years. How I changed the standards. I know I gave much longer harder tests to start with. I can remember some of the word problems we did in those algebra classes, but I wouldn't dare give them later on. Some things haven't changed much at all, such as the engineers complaining about the Math Department. The other night at the Christmas Open House I just could not believe how many people I had never seen before in the Department, but I was impressed with what I did see. Everybody seemed to be really enthusiastic. Fairly young and interested. They like each other. I thought the atmosphere was really good. I had Claude [McHenry] in class at one time. I don't guess anybody else in the Department. But I did have him. I can't remember which one, one calculus

course I guess over in Derryberry Hall. Some people you remember and the people you run into 40 years later that you remember. They come up, 'I'm so and so, I was in your class.' And the people that you don't remember at all come up, 'Do you remember me?'

R. S. Sometimes I just can't place them.

E. B. So often you can't. They change so much! Of course you do too, but from 18 to 40 is a big change. I don't know when things starting changing toward research. Now [John] Holzer I think may have been a little bit involved in research but I can't remember anybody else of these early ones that was at all. I can't remember when people starting coming in with the Ph.D's and they were interested and were trying to do research. The early ones I think didn't get anywhere, they couldn't get reduced loads or anything else, so they sort of gave up. I'm sure whoever wanted to do research at the very beginning got no encouragement.

R. S. When I first came I got a Faculty Research Grant, I guess people had gotten them before too. Ed [Dixon] said that he was going to give me the three hour reduction like it was a novel thought. That it had never been done before to actually give somebody the three hour reduction when they got the Research Grant. I think before you just got the grant, and that's nice, but you still taught the full load.

E. B. But you got it!

R. S. I did. So I guess that was sort of new about that time.

E. B. When was that?

R. S. I came in 1982. Of course there had long since been people in the Department doing research by that time. But we were starting to get more support.

E. B. I don't know when [S.A.] Patil came. I think [Khyson] Swong didn't get support for anything. I know Dr. Boles had great hope for him coming in and doing a lot of research but I don't know what happened. But I think he was disappointed and I think Dr. Swong was probably disappointed with whatever support he got from the university.

R. S. Dr. Swong was an excellent teacher. I had him.

E. B. I think whatever he wanted to do he could do. Dr. Patil was doing a lot of research I guess.

R. S. Before the time that I was a student, I had a cousin that was here. What they did was different. I think they had a course called Public Programs.

E. B. Oh yes. We used to have Public Programs every Wednesday at 10 o'clock. There was an assembly in old Memorial Gym. You got $\frac{1}{3}$ of an hour credit for that. You registered for it. They checked roll. If you were there you got an A. You got one credit hour per year. Everybody hated it or we pretended we did, but they had some pretty good programs. There were a lot of announcements. The ASB President was always there to make the announcements about all the student activities that were going on. There was a lot of support for the football and basketball teams, which was all we had I guess. We didn't have girl's basketball then. I remember thinking Tech used to win all these OVC championships, but looking back at the record there were very few. Then we had a program. Some of the programs were really good. I know the governor would come occasionally and speak or sometimes we would have a musical group. After I started teaching I learned not to schedule a test at 11:00 in an 11 o'clock class because the programs would often go over. Of course the

students wanted it to go over so they wouldn't have to go to class. There was a special section for the faculty. Of course they didn't check roll on the faculty presumably.

R. S. Were you expected to be there?

E. B. I guess we were expected to be there. I know in the math department and a lot of other departments we weren't. We used to go to the Student Union and have coffee. One day we were in there and looked up and President [Derryberry] and somebody were standing at the door. He was laughing, pretended he was taking names. It was all funny. The next week we went over there and it was locked up tight. The student body then was in the 2000s. The seating for Public Programs was by class. You were assigned a seat. I don't know when that went by the wayside. I don't think we ever had any religious programs or not, but I guess if somebody wanted to we could have. There used to be different type of social activities too. They had three or four good formal dances every year. I think there was a military ball, and the engineer's ball, I don't know if the Business College did or not, but they were big things. Everybody dressed up and they had a group come in and play. They had elaborate decorations. It was just a big deal. I think there was more support for the athletic teams. But again, there was nothing else to do. When I lived in the dorm, we had hours we had to be in. I guess 10:30 was the latest we could ever stay out unless it was a special occasion like a formal dance. But some nights we had to be in by 8:30 or 9:00. You signed out and in.

R. S. I guess the library wasn't open late then.

E. B. Well, you could go out to the library even though you had to be in, if you signed out. Of course lots of people got in trouble signing out for the library and going to the movies. I don't guess anybody ever graduated without doing that at sometime or other. They had to stop that when Title something was passed that you couldn't have different regulations for men and women. But of course I thought they should just make the guys be in early! They had all sorts of rules. You couldn't wear pants, blue jeans, without a raincoat covering. The ASB officers and especially the ASB President, everybody that ran, had a plank in their platform to do away with raincoats on campus. That was really a simple time compared to today! We never, ever, had snow days. A few years ago before I stopped teaching, but not long before, somebody called me one morning and said, 'I heard that classes are dismissed until 10:00.' I said that we never did that ... but they did. And sometimes they announced that Tech would be closed tomorrow, and I got a call at 12:00 from a former student asking, 'Did I hear correctly, did they really close Tech?' But we never had snow days because they said everybody would just get in their cars and go home and that would be more dangerous than trying to go to class.

R. S. Was it like now, where you have students on campus and some who were commuting in?

E. B. More of them were on campus.

R. S. Were there other courses that have dropped by the wayside, general things like Public Programs, or was that unique?

E. B. We all had to take physical education and ROTC was a requirement.

R. S. When did you retire?

E. B. In 1998. I was 44 years in the Department. [There were

eight or ten of us that had been there for many years and left close to the same time. Sircy, and Dixon, and [Richard] Savage [Sr.], and [Barbara] Briggs. Poor old Ron never got to retire. [*Editor's note:* He passed away in the Spring of 1995.] I had mixed feelings about retiring. I thought, what will I do? That was a silly thought.] There are a lot of things I could do like clean house but I don't want to do that. So, I got involved in volunteer work. That's awful easy to do. But also, as far as the time goes, I spend three hours on every 45 minute job. So time does not drag.

R. S. Has the way that calculus is taught changed over the years? The material that was taught or the way it was done? I know the books got thicker.

E. B. We do more theory and proofs. We didn't do a lot then. When I was in school I guess we memorized the definition of limit, but that was about it. The courses are much better now. We didn't have an integrated algebra and trig until 10 or 15 years after I started teaching. We had that analytic geometry course which was a neat course. I don't think it was necessary to have five hours of analytic geometry but it was a nice course.

R. S. What would you do in a five hour analytic geometry course? I'm sure you talked about conic sections.

E. B. I can't remember what all we did. We did a lot of polar coordinates. I don't know what we did, but a lot of stuff we didn't need to do I am sure. I am sure we rotated axes.

R. S. That's not even in the book anymore. That has changed in my time. At least it was still in the book when I started.

E. B. That was a course that people dreaded. I don't know why. I wish I had copies of some of these old textbooks. Somewhere along the way I took a spherical trigonometry course.

R. S. That's something you can't get nowadays either.

E. B. I don't know why you would want it, but kind of interesting. Somebody had a question, somebody that was being home schooled, something came up and they came to me about a spherical trig problem. I had to go back and ended up online getting some information that would do the problem.

R. S. I think that the tendency over the years has been to increase the number of hours in whatever you are majoring. When you were a student what did you study? I guess it was more spread out.

E. B. I am sure the spherical trig wasn't a requirement. I don't even know why it was offered. There was an astronomy course in our department. There has to have been some more upper division courses but I don't know what they were. I know something really interesting. Calculus was dual numbered. It was 211, 212, and 213. But it was dual numbered. 211/311. That was because some people got upper division credit for it and some people got lower division credit. The logic was that engineers didn't need any more upper division credit. Math majors got upper division credit because we didn't have enough courses. Maybe you better not tell that! That was when we had to type our own grade sheets of course.

R. S. You had to type your own grade sheets?

E. B. Oh yes! I don't know how we knew who was in our class. I guess they brought a card after registration. We had to get their names and we did our own grade sheets. We'd have the 211 on the list and 311 on the same page I guess.

But 311 was a different list and it had to do with majors. I don't know what we did if somebody changed their major.

R. S. The 211 number we still had when I was a student. We didn't have the 311. You typed these out on a typewriter, right, and that's what you had to turn in to wherever you turned in grades?

E. B. Yes, I still have some. They had a form for us and we typed in the information, grades and attendance.

R. S. Was it a requirement that you kept the attendance?

E. B. I don't know if it was or not. We had to put in a summary of the grades, the percentages. The first grade lists that were preprinted for us were in 1960. You can imagine how hard it was to get your grade sheet correct.

R. S. I can see by looking at your grades that you didn't have any quota on the number of A's. Two A's out of 33 students. Here there were 15 D's and F's in trig. Here's the text for Analytic Geometry, A Brief Course in Analytics.

E. B. They should all be brief. My grades were better by the time I retired. Somewhere we had to do percentages and they sent out charts for us to use!

R. S. Did you have a typewriter in your own office?

E. B. Yes, I think so. If not, we had student assistants to do it.

R. S. That brings up another question. Did you have a secretary for the Department?

E. B. No, just the student assistants. The first real secretary was Mamie [Burgess, now Mamie Goulet]. She was part-time to start with. I think it was physics and math.

R. S. Did she come along while you were still in Henderson Hall?

E. B. No, I think we were in Derryberry. Now seniors taught some of the non-credit courses. Algebra which was Math 91, and geometry. I got to teach as a senior. That was fun.

R. S. Do you remember what you taught?

E. B. I don't, but that was fun. It was a different world. I think the dual numbered courses are the most interesting thing I have remembered.

R. S. Did they pay you a certain amount for teaching?

E. B. Very little. This was before work study, work scholarship, and all this. Students just got a paycheck. But I think when I was a student assistant it was either 50 or 55 cents an hour. For teaching I don't know if was more or not. I can't remember.

R. S. Did you have the sole responsibility for the course?

E. B. I guess somebody was sort of supervising but I don't think they supervised very closely.

R. S. Times have changed. Now even the first year graduate students aren't allowed to teach.

E. B. I think that's great. At least they were non-credit.

R. S. I suppose the campus was a lot different.

E. B. Yes, we were with engineering except that mechanical was over in the heating plant. We had just math and engineering in Henderson Hall. There were all sorts of temporary buildings around that had been built in the time when so many Air Force guys were here. The temporaries were used after they left some for housing. The married student housing was awful at one point. The student union at one time was somewhere in the area of what is now the parking lot between the Industrial Arts Building and the Farr Building. It was one of those temporary buildings but they also

had some classes in there. I remember Frances Brown was an English teacher and she said one day that she was reading poetry and she was all excited about it. She said she was standing on a floor board that had bucked up. She knew it so she was careful. She got through class and she looked down and she was standing on a student's foot. She couldn't tell a foot from the floor board it was in such bad condition. The main buildings were the ones on the Quad. Henderson Hall is barely off the Quad, and the heating plant. Now when we first moved into Bruner the barn was across the street where the library is now. Sometimes you'd be in one of those classrooms facing University Drive and the cows would walk up to the window. We moved to Bruner in 1965 I guess. I don't know where they took the cows to graze, where married student housing is now maybe.

R. S. It seems that there isn't a lot of classroom space in some of these buildings. Was there enough?

E. B. There were times that we ran all over campus to the class. We would use different buildings. I remember when they built Foster Hall; then it was the new science building. Farr Hall was the old science building. I was scheduled to teach class in room so and so of the science building. I didn't know which one, so I decided I would pick the newer one. Maybe it was closer and just trying. I was walking down the hall there and looked in and I saw a student I recognized. I thought that yes, this was it. I went in. He said, 'Miss Brown, are you teaching this course?' I said that I guess so. 'What is it?' He said Dairy Cattle or something. I said, 'I guess I'm not.' So I tried the other building. But we did sometimes have to go to other buildings. We had a lot of part-time people then. I know Coach [Hooper] Eblen taught classes for us, there were a lot of people around who would teach a class or two.

R. S. I was looking at an old catalog a few years ago and comparing numbers and didn't see much of anything that was still around. We had one in the book when I looked, a Math 304. I saw that it had been around awhile when I compared some old catalogs.

E. B. Statistics.

R. S. I don't think that course had been taught. I think it's been dropped.

E. B. I think we had that when I was in school. It probably wasn't as good a course as 102, the lower level statistics. I can't remember exactly what it was. I don't think there was any probability in it. Again it was just a lot of busy work. It had to be then! We didn't have the calculators. If you're doing any sort of statistical analysis without a machine it's going to have to be.

R. S. You didn't do much theory?

E. B. No. Not that I remember. I didn't get it if we did. I had forgotten about that course. I guess that was one of our upper division courses. Things have improved immensely.

R. S. That is good to hear.

E. B. At one time somebody wanted to keep a Math Department scrapbook. It didn't last long. It got started but then it wasn't continued. The last time I saw it, it had things like wedding announcements in it. I think that was the sort of thing it was intended for. It started when somebody decided we should do that with the very first self-study. I say the very first; I don't know if it was the very first or not. It was my first

so I guess I thought it was the first one the university had done. But, there was so much information asked for that we didn't have because we hadn't kept records on certain things. Somebody said that we should keep a scrapbook.

R. S. Would this have been in the 50s?

E. B. Probably, maybe 60s. I don't know. The self-studies have changed too over the years. The first one I remember was more gathering data. I was on a university committee and somebody once said, 'Let's stop worrying about the self-study. Nobody is ever going to read it anyway.' I said, 'No, ten years from now the people who do the next one are going to.' I think they are the only people who do read it.

R. S. That brings up one more question. Committee work. Was there a lot of it?

E. B. There was none in the early days. We had a head, not a chair, and he did it. But as far as I know I don't remember any committee work for a long time. Tenure was automatic except I don't think anybody knew if they had tenure or not for many years. I remember in faculty meetings somebody bringing it up and it was just an automatic thing. If you stayed around you had tenure. I don't know what year, but some year because people kept bringing it up, they sent letters to everybody telling them they had tenure as of whenever it was.

R. S. So you found out that you had tenure years later.

E. B. Yes.

R. S. And I guess promotion wasn't an issue then either was it?

E. B. I don't know how that happened. I guess it was just if people stayed around somebody decided let's promote them. You didn't go through a procedure. I don't know when the committee system got going. I guess it keeps proliferating. But, I remember sometime when it was brought up to the faculty meeting about adding students to the university committees. Some people were very much opposed to that, which was kind of silly too. So when I talk about that many hours teaching, it wasn't as bad since you didn't have a lot of extra stuff to do.

I was a student when the golden eagle, [now on the top of Derryberry Hall], came to Tech. My memory doesn't exactly jive with some of the stories I've heard. I may be wrong. But the way I remember it, we were working on the Math Department float. Even the Math Club used to do floats for Homecoming. Somebody came around in a pickup truck and they had the eagle and they had just gotten it I guess. Supposedly the man in Monteagle that owned the hotel where the eagle had been wanted it back. But anyway, he didn't get it back. But when Governor Frank Clement came to speak he announced that he couldn't keep the people involved in taking the eagle from being arrested. But, he could pardon them and he would. Back then we had a faculty meeting and they sent out the list of people who were going to graduate and you had to vote on it. I guess Admissions and Records sent out something saying that these people have satisfied the requirements. The faculty still had to vote. So we had a faculty meeting to vote on the graduates. It was just automatic. You always voted for everybody they said had satisfied the requirements. Roy Loudermilk was a freshman involved [in taking the eagle]. When he got ready to graduate, the

head of the English Department didn't want Roy to graduate because he had been involved in stealing the eagle. Of course the other guys who had been involved had already graduated [and he] was outnumbered I don't know what number to one.

R. S. So all faculty voted on all students that came up for graduation if you knew them or not.

E. B. Right. We didn't know most of them. They just sent us out a big list.

R. S. When did that go by the wayside?

E. B. I don't know.

R. S. I would never have thought to ask that. I wouldn't have thought about being asked to vote on the graduates. It must have been a holdover from an earlier time when it was a more substantial thing.

E. B. That may have been when we started on the end of the term faculty meeting so we could vote on the graduates. I think that's when we voted. Also, we used to be asked to exclude students from final exams. Some had not paid fines for overdue library books. I thought that was most unfair since if you didn't let them take it then they'd go over and pay. Then they'd come back and ask for a special exam the next week. I don't know how that worked. Then I guess we didn't have parking tickets. Nobody had cars anyway. But we'd get a list, not to let these people take finals. I don't know who kept up with who was in everybody's classes.

Another thing is we didn't have copy machines. We had ditto machines. Anything we typed, if we wanted a copy we had to use carbon paper. But, I don't know if we had to send them copies of our class list in advance. I guess we didn't. I guess when we got ready to do the grades we sent those in.

R. S. Where did you get the list of students from?

E. B. I think they brought a certain card to class. We could look at that and see that they were registered for our course. We made a list from the cards. Sometimes though you would report a grade and you would get a notice from Records saying that the person wasn't officially registered for your course, or the other way around. It is amazing that it worked as well as it did.

Are you having any problem with people on the lottery scholarships having to maintain a certain average?

R. S. Yes. I think perhaps engineering may lose majors because of that. I've had students when they first started say that they can't maintain the average they need because of math. They sometimes say they are going to have to leave engineering and major in something else.

E. B. I had one student in the early days who almost had me convinced to give him a few points. I don't remember the story. But, he didn't know he almost had me convinced. I was really thinking about it. And he said something about President Derryberry is a friend of my family. I think he was going to be kicked out of school. I said, 'Did you talk to him about this?' He said he did, but that there were no one person decisions around here. I said, 'You're asking me to make one! Get out!'

R. S. You've told me a lot of things I never would even thought of to ask like the grade sheets, for example. I have very much enjoyed this. Thank you, Evelyn.

E. B. Thank you for coming. I've enjoyed it.

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