2008 Math Graduates

Thomas Adams (BS Mathematics Education, Physics minor, Pi Mu Epsilon) is a Math Instructor at Niles Senior High School in Niles, MI, and a Math Instructor at Niles Adult Education Program. When Tom is not teaching, he is spending time with his wife and four kids in Bridgman, MI.

Danielle Burton (BA English Literature, BA French Studies, Mathematical Studies, Pi Mu Epsilon, J. N. Andrews Scholar) is currently in Tucson, Arizona, working for the Southwest Conservation Corps as a Technical Trails Crew member. The Crew, which builds and maintains wilderness trails, goes out on 12 day hitches, living in the field and building fresh tread, cutting corridors, repairing disused or old trails, and building rock structures. Next year Danielle will study Mandarin in China and possibly stay in China for a second year teaching English. After that she may go to graduate

High school teaching—wilderness trail building—grad school in econ, physics—medical physics—NASA's Jet Propulsion Laboratory

school—but the country and subject are as yet unknown. Danielle says, "Arizona is hot!" She got hyponatremia on November 1 while working in White Canyon near Phoenix in 100 degree heat. But she loves her job!

Brian Ibanez (BA Economics, Mathematical Studies, Pi Mu Epsilon, J. N. Andrews Scholar) is still in Berrien Springs; he will graduate in December of 2008. Brian plans to teach a GRE Quantitative Prep course at Andrews this spring for Student Success. He also plans on looking for an internship at a central bank. Brian is currently applying to graduate schools; he plans to do a PhD in economics.

Laura Nelsen (BS Mathematics Education, Computer Science minor, Pi Mu Epsilon) is teaching 7-10th grade math and science at Adventist Christian Academy in Charlotte, NC. She plans to do a master's in math. Things are going well and she loves teaching!

Jeffery Riess (BS Physics, Mathematical Studies) is working with Global Physics Solutions commissioning Linear Accelerators that are used for treating patients with cancer. He plans to eventually return to graduate school and do a master's in medical physics so that he can work clinically as a medical physicist.

Nicholas Valles (BS Mathematics, BS Physics, Pi Mu Epsilon, J. N. Andrews Scholar) is working on a PhD in physics at Cornell University. Currently, he is working as a research assistant for Matthias Liepe in a Superconducting Radio Frequency Group. Right now they are finding the maximum superheating magnetic field for superconducting cavities below their critical temperatures. Nick plans to be a university research professor in accelerator physics. He has some advice for the majors still at Andrews: "Enjoy undergraduate problem sets while you still can, and make sure that you write up your current homeworks clearly and keep them organized. I've been able to save a lot of work by taking that advice and the problems have proved useful already."

Danielle Wuchenich (BS Physics, Mathematical Studies, BA Spanish Studies, Pi Mu Epsilon, J. N. Andrews Scholar) is currently working on the Laser Interferometer Space Antenna (LISA) at NASA's Jet Propulsion Laboratory in Pasadena, CA. In January she begins PhD studies in experimental physics at the Australian National University in Canberra. Danielle loves working at JPL and has the possibility of working there again after graduate school. She really enjoys lab work, but she also enjoyed tutoring at Andrews, so teaching may be in her horizon as well. □

What's up with Alums

Alums, say hey! Send updates and photos to Shandelle Henson at henson@andrews.edu. Don't forget to give the Alumni Office your current address if you move (alumni@andrews.edu).

Vanessa (Land) Pujic (Mathematics, 2006) married her high school sweetheart, Goran Pujic, on July 22, 2007. She is in her third year of teaching middle school and high school math and Spanish at River Valley High School in Three Oaks, MI. This

past summer Vanessa took a group of Spanish students to Spain.

Andrea Moore (MS Mathematics and Science, 2006) is working on a PhD in Environmental Modeling at Oklahoma State University. The research paper resulting from her master's thesis recently appeared: A. L. Moore et al. 2008. Modeling the daily activities of breeding colonial seabirds: dynamic occupancy patterns in multiple habitat patches. *Mathematical Biosciences and Engineering* 5:831-842.

Galina and Merlynd Nestell (Mathematics, 1957)

Curtis Wiltse (MS Mathematics, 1972) recently sent us an update. He wrote: "For both years I was in the (masters) program, I taught a calculus class under Dr. Harold T. Jones, from whom I learned much about teaching. After teaching junior high math for a year, I went on to earn an MSPH (Master of Science in Public Health) from Loma Linda University and a PhD from the University of Iowa (both in biostatistics). After working as a statistician in medical research and clinical trials for 30 years, the last 20 being at Eli Lilly and Company in Indianapolis, I am retiring at the end of 2007."

Math majors, class of 1955, at 50th reunion in 2005. From back left: Bruce Zimmerman, Jim Gooch, Bob Wonderly; Ed Specht, Mary Specht. This was the first time in 50 years that the three grads had been together.

Bob Wonderly (Mathematics 1955) recently sent an update. He wrote: "(At the time of my graduation), Evelyn and I were already married and we had a small baby. In the 50-some years since we became parents again, foster parents, then grandparents and now great-grandparents. My career was as a computer specialist and, among other places, I worked at the Universities of Minnesota and North Carolina, plus at AU and LLU. Before retiring I did computer consulting. Now I have time to pursue interests in mathematics (number theory) and

computing." About Harold Jones, he wrote: "I finally managed to pass the Morse code test for my general class radio operator's license circa 1993. After that Harold and I had a few short wave QSO's. As I recall he had the highest class license (two clicks beyond me) because he could do the Morse code so fast. He once told me he would hear whole words at a time. For me it was a struggle to recognize individual letters. Did you know that he was translating Russian mathematical papers into English for republication?" □

2007-2008 Math Awards

At the end of each academic year the Department holds an awards ceremony at which outstanding students from each mathematics course are honored. In April 2008 we granted 43 awards to 35 people. Math major awardees were **Ben Chase** (Advanced Calculus), **Brian Ibanez** (Discrete Mathematics, Linear Algebra, Calculus III), **Sereres Johnston** (Advanced Calculus), **Daniel Moskala** (Intro to Linear Algebra, Probability Theory, Discrete Mathematics, Linear Algebra), and **Nick Valles** (Advanced Calculus).

The Department awarded the Edward J. Specht Endowed Scholarship to **Sereres Johnston** and **Eric Shull**. The Harold T. Jones Endowed Scholarship was awarded to **Ben Chase** and **Brian Ibanez**, and the Louis Ulloth Scholarship went to **Kiana Binford**. □

ΠΜΕ

The Michigan Gamma Chapter of Pi Mu Epsilon was chartered at Andrews University in 1970.

Sixteen members were inducted into the Michigan Gamma Chapter of Pi Mu Epsilon on April 16, 2008 in a ceremony held in the Department. President Tom Adams presided over the meeting and led the initiation ceremony. He was assisted by Eric Shull, Vice President, and Danielle Wuchenich, Secretary-Treasurer.

Pi Mu Epsilon inductees, 2008

The new student members are Danielle Burton, Michael Castelbuono, Benjamin Chase, Jackie Diah, Kenneth Fletcher, Benjamin Hamon, Peter Hutauruk, Brian Ibanez, Jason Lee, Daniel Moskala, Emmanuel Scott, and Aaron Seibold. The

new faculty members are George Agoki, Lee Davidson, Ronald Johnson, and William Wolfer.

The newly elected officers for 2008-2009 are Eric Shull, President, and Daniel Moskala, Vice President. Kiana Binford has been appointed Secretary-Treasurer. Dr. Robert Moore continues to serve as faculty advisor, but Dr. Joon Hyuk Kang will be taking the reins as the year progresses.

Department professor Shandelle Henson presented a short talk on continued fractions, and, as April was Mathematics Awareness Month and the theme was the Mathematics of Voting, Department chair Robert Moore presented a conundrum on dividing up the U.S. House of Representatives according to state populations. □

Mary Specht, 1915-2008

Mary Josephine Michel Specht, 92, died March 26, 2008 at the Garden Villa nursing home in Bloomington, Indiana. She was born in Farmington, Washington on August 18, 1915, the youngest of ten children, and married Edward John Specht on December 25, 1938. Surviving are her husband Edward, a son, Frederick, of Bloomington, a daughter Lahna, of South Bend, one grandchild and two great-grandchildren.

Her husband Edward is Professor Emeritus of Mathematics. He served Andrews University from 1947 to 1972 as chair of the Department of Mathematics. He resides in Garden Villa nursing home in Bloomington, Indiana. □

Research Updates

Recent Publications

- **Kang, J. H.** and Lee, J. 2008. The non-existence and existence of positive solution to the cooperation model with general cooperation rates. *Korean Journal of Mathematics* 16 No.3:391-401.

- **Kang, J. H.** 2008. A cooperative biological model with combined self-limitation and cooperation terms. *Journal of Computational Mathematics and Optimization* 4 No.2:113-126.

Former graduate students Andrea Moore (MS Mathematics and Physical Science) and Smruti Damania (MS Biology) appear as coauthors.

- **Moore, A. L.**, **Damania, S. P., Henson, S. M., and Hayward, J. L.** 2008. Modeling the daily activities of breeding colonial seabirds: dynamic occupancy patterns in multiple habitat patches. *Mathematical Biosciences and Engineering* 5:831-842.

- Stern, H. A. and **Calkins, K. G.** 2008. On mesh-based Ewald methods: Optimal parameters for two

differentiation schemes. *Journal of Chemical Physics* 128:214106.

Recent Presentations

- Shandelle Henson, Colloquium, Department of Mathematics, Furman University, Greenville, SC, November 13, 2008.

- Shandelle Henson, Lecture, Cultural Life Program, Furman University, Greenville, SC, November 13, 2008.

- Shandelle Henson, AMS Sectional Meeting, Special Session on "Mathematical Biology: Modeling, Analysis, and Simulations", Huntsville, AL, October 24, 2008.

- Shandelle Henson, John F. Stout Symposium, Biology Department, Andrews University, Berrien Springs, MI, September 26, 2008.

- Shandelle Henson, Lecture, Marine Science Center, Port Townsend, WA, July 17, 2008.

- Shandelle Henson, Colloquium, Department of Biological Sciences, Walla Walla University, Walla Walla, WA, May 6, 2008.

- Shandelle Henson, AMS National Meeting, Special Session on "Recent Advances in Mathematical Biology, Ecology, and Epidemiology", San Diego, CA, January 6, 2008.

- Yun Myung Oh, AMS Sectional Meeting, "Lagragian H-umblical submanifold in a quaternion Euclidean space", Claremont, CA, May 4, 2008. □

Featured Alumnus: David L. Russell

In my senior year at Emmanuel Missionary College (1957-58) I became aware of a fellow student named David L. Russell, who had recently arrived on campus. Dave graduated from EMC in 1960 and went on to one of the most illustrious mathematical careers of any Andrews graduate. Dave has been a professor at the University of Wisconsin, Madison, and is currently Professor of Mathematics at Virginia Tech. He has published 118 research papers. The Math Genealogy Project shows that he has had 24 doctoral students and has 47 "descendants". He has served on the editorial boards of five scholarly journals, held visiting appointments at 10 major universities and technical institutes around the world, and is the recipient of numerous research grants, honors and awards. In 2009, the Chinese Academy of Sciences is holding an International Conference on Mathematical Control Theory in Dave's honor. Recently I asked Dave to write up something about how he came to Andrews University and how his experience at Andrews affected his life. Here is the result. –Don Rhoads, Emeritus and Former Chair

In the spring months of 1957 my parents and I were busily trying to arrange for me to attend an Adventist college in the fall. I'm not sure why Emmanuel Missionary College was not our first choice, since it was only 450 miles from where I lived in Oshawa, Ontario, but I do remember that another Adventist college had first offered financial aid (without which I had no chance at anything) and then lost track of it. It is hard to realize in these relatively affluent times how impoverished we were then, now fifty years ago. We ultimately had no choice; we had to try EMC and it was late in the year.

And so it was that, one day early in June, 1957, I drove to downtown Oshawa in the '47 Ford with my Dad to take the Grey Coach to Toronto. I gave the keys to him and he drove away. To this day I can still see, in my mind's eye, the old blue Ford driving away—and my familiar life with it. I sensed then that nothing would ever be the same again—and it never was. In Toronto I boarded a Greyhound bus, one of those with the glass top providing a view of the countryside, marvelous at the time, bound for Detroit. In Detroit I boarded another Greyhound which took me to Jackson, Michigan, where I waited for the bus to Niles. The bus showed up at 2:30 in the morning. At Niles, I found there was no bus going to Berrien Springs, so I spent nearly all my money on a nine-dollar taxi ride, which dumped me at the south end of the campus, as totally unannounced as imaginable.

When I go back to Andrews University, as EMC was renamed a couple of years later, it seems small compared with giants like the Universities of Minnesota and Wisconsin and Virginia Tech I became familiar with later. But fresh out of Oshawa Missionary College, with its four main buildings at the time, EMC with its dozen seemed outlandishly large. I wandered around in a daze with no sense of where I was going or who I was supposed to meet. Eric Greentree, 20 years old and a couple of years ahead of me at OMC, was working at EMC for the summer months. Just before I left Oshawa his mother had mentioned to my mom that I should look him up. I found Birch Hall, the smaller of the two men's dormitories, and eventually found Eric. Eric introduced me to EMC's business manager, Wilson Trickett, who remains in my memory as one the Almighty's terrestrial angels.

Trickett got me a job in the Wood Shop, arranged for me to apply for admission (incredibly, we hadn't done that) and helped, then and later, in many other ways. I thought I did well at the College Woodworks but the foreman did not. I ran a Diehl saw, cutting cleats for furniture drawers. I had no trouble keeping up but, because of my bad hip, needed to sit on something. The foreman would have none of it—I had to stand and, after a week or so, the strain on my hip was too much and I had to quit. I wouldn't wish my boss out of his station in Heaven but I hope he occasionally gets tired and has nowhere to sit down. The rest of the summer I fixed roller

skates in the college maintenance facility, hardly earning enough to pay for the cafeteria and nowhere near enough to support myself during the academic year to come. It was a crisis; not the last.

Wilson Trickett sent me to interview with Dr. Herwarth F. Halenz, Chair of Chemistry. He was an outwardly gruff Teutonic, not given to idle praise, who came to America just after the First World War—but he had a good heart and, as luck or providence would have it, found himself in the summer of 1957 without a lab assistant. I had done extremely well in the grade 13 chemistry course at OMC taught by Richard Banks and I hoped to get a degree and pursue a career in chemistry. That record, and perhaps Banks' recommendation, landed me the job, which paid much better than fixing roller skates and even better than the College Woodwork.

I received the PhD in Mathematics at the University of Minnesota in 1964 and went to Madison, where I spent 22 years, finishing there as Full Professor.

I have always been grateful to the memory of Dr. Halenz even though I later disappointed him by switching to mathematics at the end of the first semester of my junior year. I did very well with the theoretical side of chemistry but qualitative and quantitative analysis, and finally Organic Chemistry, revealed serious weaknesses in my laboratory technique. On one occasion, pulling out a drawer, I pulled it too far and it, with $300 worth of laboratory glassware, crashed to the floor. Dr. Halenz didn't make me pay for it but my confidence chemistry-wise was shattered and I felt the world, and I, would be safer if I pursued mathematics instead.

I had started uncertainly with Calculus in the fall semester of 1957. The course was taught by Harold Jones, who was teaching at EMC and simultaneously trying to finish his PhD at Brown University. Harold Jones was a wonderful guy but that first semester I thought he seemed bookish and somewhat severe. He used the calculus book by Karl Menger of the Illinois Institute of Technology. Menger was a stickler for accurate mathematical notation. It was not enough to denote the identity function taking x into x just by x; it had to be j — and not $j(x)$, just j.

Numerous instances of much the same thing tended somewhat to obscure the main points and I was running into lots of new mathematical ideas in that course: limits, continuity, differentiation, integration, sets of numbers. The mathematical instruction at OMC under Gus Streifling had been good but it had been rather classical. I had a strong background in trigonometry, logarithms, geometric progressions, etc., but none in the more modern notions of mathematics. On the first midterm I did miserably and not so great on the second midterm either. During the Thanksgiving break, back in Oshawa, I asked my dad if he had ever flunked

a course. No, he hadn't, but he had gotten a D in physics. It was not reassuring.

Between Thanksgiving and Christmas, the famous "lame duck" session of American academia, I began to catch on to things a bit. I used the Christmas break to fortify my understanding of the calculus and to my joy and amazement I scored a clean 100 on the final exam. From that point on I did very well in mathematics.

Most of my later, junior and senior level, courses were taken from Professor Edward J. Specht, who had done a thesis at the University of Minnesota under the supervision of Stefan Warschawski, after whom the Mathematics building at University of California, San Diego, is now named. Ed Specht went far more than the second mile in conveying his mathematical knowledge to us. Complex Variables class consisted of two people, Fred Meseraull and myself, but Ed put his heart into it nevertheless. Advanced Calculus proceeded on much the same basis.

Dr. Jones taught us Linear Algebra from Paul Halmos' book "Finite Dimensional Vector Spaces". Despite the very abstract treatment I was able to absorb it fairly well but later, I found that there were many standard techniques, like diagonalizing a matrix, that I had no idea how to do. But I blame that on Halmos, not Harold Jones.

During the spring of 1959 I worked for Jones in connection with his Brown University thesis, which concerned the equilibrium distribution of electric charge on a system of conducting bodies. Finding that equilibrium distribution required solving an integral equation by iteration, I ground away on it, at $2 an hour, using an old Marchant electrical/mechanical calculator over a period of three months. It converged. Some ten or fifteen years later I asked Harold if he had ever subsequently put the problem on a computer. He said that he had and it took all of 9 seconds.

I hope and trust that Andrews University still treats young people like that, and always will.

That spring I had a pretty reasonable offer from Michigan State but chose instead to go to the University of Minnesota, where Ed Specht had been able to persuade Warschawski to award me a National Defense Education Act (NDEA) Fellowship. That gave me three years of support which I capped off with a final year consulting with Honeywell in Minneapolis. The NDEA was a response to the Russian launch of Sputnik in 1957 and the work at Honeywell was related to the Apollo Moon Project. I have always figured that I largely owe what success I achieved to Ed Specht and the Russians, in that order.

I received the PhD in Mathematics at the University of Minnesota in 1964 and went to Madison, where I spent 22 years, finishing there as Full Professor. I had a wonderful time

at UW and loved Wisconsin very much, but later, as I viewed turning 50, the Wisconsin winters began to lose their charm and I succumbed to an offer from Virginia Tech, where I moved in 1988 and have been working since. It has been a great mathematical life but none of it would have been possible except for the amazing understanding shown by EMC in the summer of 1957 to a very confused and scared 18 year old—I will never forget that. I hope and trust that Andrews University still treats young people like that, and always will. □

Gina Creek Joins Dept

by Robert C. Moore, Department Chair

We welcomed Gina Creek to our department in August. Gina is teaching AP Calculus for the gifted high school students in the Berrien County Mathematics and Science Center, as well as Arithmetic and Algebra Review in the Department of Mathematics. Shirleen Luttrell left a gaping hole when she left us in the summer of 2007, so we are delighted to have Gina here to fill the hole.

After earning a BA in Mathematics Education at Union College, Gina taught math at Central Vermont Academy. She then transitioned into human resources, and held various positions, including that of technical writer for Actuarial Resource Corporation in Overland Park, KS. Last May she completed an MS degree in Organizational Development at Avila University in Kansas City, MO.

But Gina's first love is mathematics teaching. Her energy, enthusiasm, insight, and concern for students were evident during the interview process, and we have not been disappointed. When I asked her how her first semester has gone, she replied, "Just great! I love it. When I tell my friends about my job, they say it's perfect for me, and I agree – it is!"

Gina's husband, Greg Creek, is a seminary student. Together they have a wealth of experience in spiritual ministry. In fact, as an undergraduate Gina worked as a research assistant and authored a book, *Crafting a Culture: A Guide to Successful Campus Ministries.* □

Ex Cathedra

From the Chair

As reported last year, an Endowed Chair of Mathematics fund has been established. "The purpose of the Endowed Chair is to honor and support an outstanding research mathematician and to encourage and enhance excellence in teaching and research in mathematics."

To date we have received $3,050 in donations, which have been placed in an interest-bearing account. *Many thanks to those of you who contributed!* To actually establish the Chair, we need about $1.5 million. In the event we do not achieve that amount, the funds will be transferred to a restricted fund to be controlled by the Department of Mathematics and used at the discretion of the math faculty for the support of the Department. Donors of $10,000 or more will have the opportunity to redirect their contributions to a different university project. Please consider making a contribution to this project.

Well, it seems to me that a math newsletter ought to include a problem or two. Here are two questions I enjoyed some years ago.

1. Geometry: Given a square region, partition it into acute triangular regions. What is the minimum number of acute triangles that will work?

2. Brain teaser: You have two identical jars of ink, except that one has red ink and the other has blue. You transfer a tablespoonful of red ink from the red jar to the blue jar, mix thoroughly, and then transfer a tablespoonful of the mixture back to the red jar. Is there more red ink in the blue jar, or more blue ink in the red jar?

Merry Christmas and may the Lord bless you and yours in the New Year!

Bob