

THE CURRENT

AN ALUMNI PUBLICATION OF THE MISSISSIPPI SCHOOL FOR MATHEMATICS AND SCIENCE FOUNDATION DEC. 2014 ISSUE 1

MISSISSIPPI ENTREPRENEURSHIP

THE YELLOW BRICK ROAD

A pair of MSMS alumni share their journey to becoming successful entrepreneurs in Mississippi

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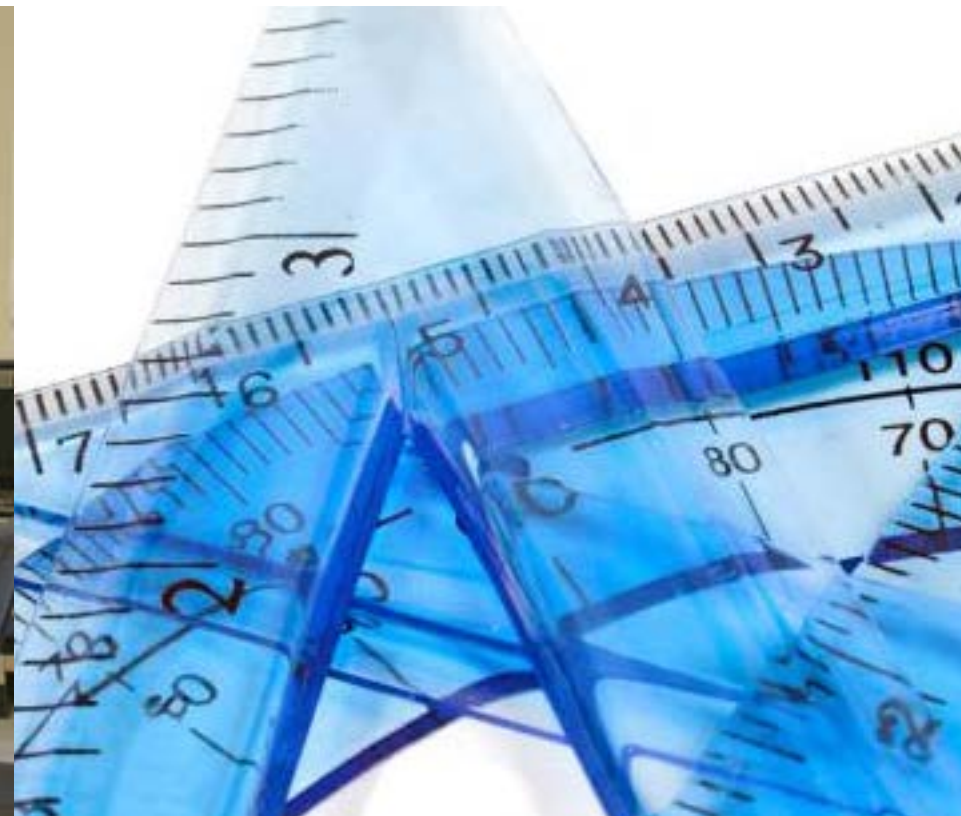


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THE CURRENT

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Dear Reader:

As President of the MSMS Foundation Board, I've seen the MSMS Foundation evolve and mature over the years to an organization actively working to provide more value to MSMS; the current MSMS students, faculty, and administration; and to our many donors. We are pleased to publish "The Current," an alumni magazine for the Mississippi School for Mathematics & Science. This magazine is part of our effort to provide value for MSMS Alumni.

We've named this magazine "The Current" as a nod both to the Blue Wave mascot of MSMS, the currents that move us through life, and the current events in your lives. This publication is the first of what is intended to be an annual publication that highlights some of the fascinating alumni of MSMS. By far the hardest part about producing a publication like this is deciding which alumni stories to include. There are many interesting alumni doing diverse things and it truly was a challenge to focus on just a few.

A magazine like this is an immense effort to create, organize and design and is only possible with a large and sustained group effort. From the MSMS Foundation Board, a huge thanks to Owen McGuire and Crystal Lauderdale who took an idea and gave it life. Thanks also to the MSMS Foundation Board for making this project possible.

Additionally, many people have contributed stories, information, and photos to the magazine. A sincere thank you to Karen Sergent, Katie Carter, Wade Leonard, Jack Carter, Kassie Brooks, the Mississippi State University Engineering School's Momentum Magazine Staff, Lauren King, Mark Henderson, Leslie Hatcher Henderson, Sharon Groat McDonald, Ryan Kim, Adrian Wilson Cartier, Monica Kala, India Yarborough, Stan Wise and Dr. Germain McConnell.

We hope you enjoy this magazine. If you would like to support the MSMS Foundation as it seeks to add value to MSMS, the students and the alumni of MSMS, please send a donation via the included envelop or through an online donation at the Foundation's website: www.msmsfoundation.com.

If you have comments or thoughts on a future publication, please contact us at info@msmsfoundation.com.

Sincerely,

Cynthia J. Henderson

MSMS Foundation Board President



PURPOSE OF THE FOUNDATION

What does the MSMS Foundation do?

The MSMS Foundation supports the Mission of MSMS and seeks to provide value to the school, the faculty and staff, the students, the alumni, and our donors. Each year, our goal is to spend \$.85 of each dollar on program services. We support MSMS in many ways and some examples include:



In 2013, we provided travel funds to Rachel Jones, one of Dr. Emma Richardson's students, who had won the Scholastic Art & Writing Program for her essay in the personal memoir category. She received the award at Carnegie Hall in New York City.

"After receiving my medal from the Scholastic Art and Writing competition in person, I know that if I had not done so, I would have missed a paradigm shifting experience... I could not have stepped into Carnegie Hall without help; I am thankful that the MSMS Foundation assisted me in getting there." Rachel Jones, Class of 2014

Every year, we provide Room and Board Fee Assistance to 10-20 current MSMS students. While some students qualify for a waiver of the school's fee due to low income, some families will make a few thousand more than the waiver cutoff. That cutoff was just \$36,612 for a family of three this year. The MSMS Foundation makes sure that those students can attend MSMS without creating a hardship for their families.

"By awarding me this financial assistance, I am one step closer to my goal and can focus more on the most important aspect of school, learning. This generous act has inspired me to help others and give back to the community. I hope one day I will be able to help students achieve their goals just as you have helped me."

Room and Board Fee Recipient



In 2013, we enabled MSMS to conduct a camp for 6th, 7th, 8th, and 9th graders from across Mississippi. This academic camp was designed to encourage and engage students in math and science at younger ages in a residential setting. The camp was wildly successful with students and parents and was expanded in 2014.

In 2013, we also held MSMS Alumni On The Road Events in Jackson, Mississippi, and Atlanta, Georgia.

In 2013, we provided scholarships to nine graduating MSMS seniors to assist with their college expenses.

These are just a few of the projects and activities we have funded in the recent past. More detailed information is available on the website at www.msmsfoundation.com.

The Unique Vision of JACK CARTER

By: Crystal L. Lauderdale, Class of 2000

It was 1988, the year Microsoft released Windows 2.1 and Stephen Hawking released “A Brief History of Time.” Jack Carter and his wife Claudia were sitting in a Vicksburg kitchen belonging to Johnny Franklin, the Inaugural Director of the Mississippi School for Mathematics and Science.

“We were looking for two things,” said Carter. “We were looking for a place to settle and something we felt would be really exciting and that we could be a part of.”

MSMS had been established through legislative enactment just a year prior, and the first class was expected to begin that September. But the school so far had no faculty, no curriculum and a fixer-upper for a classroom building. Franklin was looking for academics with vision and a sense of adventure to bring the school quickly to life.

“It was certainly an adventure,” said Carter. “When we walked in on July 5, the halls in Hooper had no ceiling, and wires were hanging down. Between then and September 10, we put a school together.”

Achieving that involved more than just planning courses, ordering books and getting Hooper Hall, the school’s primary

classroom building, in workable condition. Because MSMS was not just a day school, but a public residential high school – only the fourth in the nation at the time – launching it also required getting living spaces and student life policies in order and quickly establishing a culture that was both inviting to students and reassuring to their families.

“We literally had to make decisions about everything,” said Carter, who recalls a great sense of team spirit and collaboration that carried the efforts of that inaugural staff. “It was quite a collegial sort of thing and a communal sort of thing. Johnny [Franklin] was really good about establishing that.”

On schedule, the very first MSMS students arrived. There were about 135 of them and less than a dozen faculty. Carter recalls about three in math, four in science, two in English and one or two in History. Together, those trailblazing students and teachers established traditions that have carried on for more than a quarter century including the Ceremony of Lights, The Vision and many of the clubs and organizations that round out the MSMS experience.

That year, Carter launched his own famous (students may say



25 Years of Teaching at MSMS

“infamous”) tradition, which he says made headlines around the state. “I handed out nine books,” he said, chuckling. That reading load, including a two-volume Norton Anthology, raised many eyebrows, Franklin’s among them, but Carter won his case. “I convinced Johnny that you had lab time for science courses, and the books were my lab.”

Carter doesn’t ask his students to read any more than he would. He has about 9 GB of e-books on his laptop and estimates that he reads 200 to 500 pages a week. He also likes to read four or five different books at a time. “I get bored if I read too long in any one thing,” he said. “Currently, I’m trying to absorb the history that was along the Silk Road between Germany and Japan.” He’s also

working his way through a book about the quantum brain.

Through his courses in British Literature, American Literature, World Literature and University English, Carter has introduced thousands of high school students to written works that span the planet and time, history – and thought – shaping material that few young scholars encounter until college, if ever.

“I try to get people to think,” said Carter, “and that’s been the most rewarding thing for me on a regular basis.”

Like his interests, Carter’s courses have varied far beyond literature. During his tenure at MSMS, he has taught Basic Programming, High-

Performance Computing, Creative Media and Journalism. He launched The Vision, a student news publication, which is entering its 26th year along with the school itself, and with his wife Claudia, who teaches math courses at MSMS, he has even been involved with Mu Alpha Theta, a national mathematics honor society.

Because his wide-ranging interests, Carter doesn’t think of himself as just an English teacher, just a journalism coach or just a technology professor. “My field is really cosmology,” Carter explained. “It’s a complex of ideas that defines a moment in time. It includes everything from the science of nanobots to the conflict between fundamental world religions to expanding

knowledge about the brain to current theories in physics and fractals in math.”

Carter’s hope for the future of education reflects his cross-disciplinary interests. He believes education must move beyond individual courses taken in academic silos. “We have to rethink how courses interact with each other,” he says. And as online courses and virtual learning programs emerge at every grade level, Carter believes, “We must find a way of studying what it means to have a [physical] community of scholars in this day and age.”

MSMS has been such a community for more than 25 years, and Carter hopes it will be a thought leader in education for years to come.



MSMS MEMOIR

by Lauren King, Class of 2002

“Living is easy with eyes closed, misunderstanding all you see.” From my roommate’s and my perspective, spread-eagled on the low-pile stain-resistant gray carpet of our room in Fant, head to head, staring at the ceiling and whispering Beatles lyrics into the darkness, a song had never spoken so truly to anyone in the world. It was the midway mark in a tumultuous semester, our last semester

at MSMS, and we were in that sort of hazy heady delirium that follows a midterm exam in physics that you’re pretty sure kicked your butt but you just can’t muster up enough energy to care. You’d think we were under the influence of something other than pure exhaustion the way we let the music seep into our bones, the way we murmured along so earnestly, tears pricking our eyes at the utter

confusion and desperation that Lennon mirrored so perfectly a decade and a half before we were even born. “It’s getting hard to be someone, but it all works out.” I’m pretty sure that sort of existential angst can only be born of a physics exam (or Taylor Hanson getting engaged).

MSMS was the sort of experience that changed our perspectives permanently, that altered our world-views and how we approached our futures.

It is hard to be someone, but our eyes were opened to the fact that we had an obligation to figure out exactly what sort of “someone” we were supposed to be and find some way to become that. For me, it turned out to be a scientist someone. My junior year at MSMS, I took microbiology only because it was a prerequisite to the class I really wanted to take—a truly horrifying (and exquisitely interesting) class called Human Infectious Diseases that would have never been offered at my home school. I figured micro was just something I would slog through (much like physics, if we’re being honest) in order to get to the good stuff. That’s when, thanks to a couple of brilliant educators (I’m looking at you, Katz and Odom), the tiny bugs got their proverbial hooks in me and never let go. I did eventually pass physics, graduate from MSMS, and go on to spend four years on a mountain in Tennessee getting concurrent degrees in Biology and English, five years at the University of Mississippi Medical Center getting Master’s and Doctoral degrees, and two years at Wake Forest University in North Carolina doing postdoctoral research and teaching



“It’s getting hard TO BE SOMEONE, but IT ALL WORKS OUT.”

undergraduate nursing students.

This fall I joined the biology faculty at Columbus State University and have spent the last couple of weeks trying to adjust to this new role, shrugging and shifting and tugging at the hem—waiting for that grownup costume to settle on my shoulders and turn me into someone with the wisdom and brevity to inspire students as I was inspired. MSMS caught me, along with a swath of Mississippi’s best and brightest children, at the perfect point in our trajectory and whispered in our ears, “this is the time of your lives to earnestly seek the truth and make it your own”. Up until that point, we thought finding our purpose entailed staring at ourselves in the mirror and mouthing, “who am I?” but most of us, MSMS gave us the decoder ring to actually figure out the answer to that question. So once again, for guidance I go back to the lessons I learned in Hooper, in Fant Hall, and in Friendship Cemetery while wearing a hoop skirt. For now, I’ll settle for ushering 96 freshmen through a Principles of Biology class without them openly eschewing the scientific method or the existence of outer space (yes, I had a student tell me once that she didn’t believe in it). *Eventually, though, I aspire to be the sort of educator and mentor that I had so many of on that small campus in Columbus, Mississippi—the kind that acknowledges that while living is easy with eyes closed, it’s much more exciting and fulfilling when they’re wide open.*

Student and Alumni Q&A

What about the school most attracted you to MSMS?

Honestly, the anticipated environment attracted me to MSMS. I had heard so many memorable stories from people who attended the school, and I wanted to experience all that MSMS had to offer.

Describe your very first day on campus.

Upon moving into MSMS, obviously I was nervous; this was a new place and a new experience. I didn't know, at the time, if I would succeed or struggle or if I would make many friends. Fortunately, I did not come to MSMS alone, as three other students from my home school and one of my close friends from church were accepted. This and the fact that all of my classmates were enduring this journey with me definitely made the transition bearable. I don't ever remember dreading or being sad about what was to come.

How has your experience at MSMS changed this year compared to your junior year?

I feel so much more prepared and laid-back about my senior year, and I know that I have matured exponentially over the past year. Last year, I would always hear about how much my seniors missed their seniors. I hadn't understood that until the beginning of this year; it was almost hard to get really close to my juniors at first because I had this mentality that they would never replace my seniors. It's okay now, though! It is hard to believe, but your peers at MSMS really do become a second family. You spend every day with them (whether you like it or not), and you can't help but grow closer because of it.

What has been your favorite student life (e.g., clubs, activities, dorm life, etc.) experience so far?

Participating on the Lady Waves soccer team has been my favorite student life extracurricular activity. I have played soccer for ten years, and it is a stress-reliever for me. I love team sports because everyone on the team is working together to achieve a common goal, and being able to work with girls that I have gotten to know so well, just

Class of 2015



India Yarborough, 17, of Columbus, MS.

makes achieving that goal so much more enjoyable.

What are you hoping to study in college, if you've decided, and what do you ultimately hope to do professionally?

I plan to major in a branch of journalism and eventually pursue journalism as a career.

What aspect(s) of MSMS would you recommend changing or improving?

I think the most obvious, physical answer here is "the dorms!" Better dorms would most likely attract more students, or at least not scare as many off. As far as student life goes, I would have the school be more supportive of athletics. Studies have shown that student athletes are more apt to tackle academic challenges, and some students need competitive sports. However, our school does not properly fund and support our athletics programs enough for them to be more competitive. Furthering our athletic programs would, again, attract more diverse students.

What aspect(s) of MSMS do you hope never change? I hope MSMS's spirit and attitude about academia never changes, and I hope that MSMS remains for as long as Mississippi's students need it. I also hope that this school never stops encouraging its students, promoting a positive learning environment where diversity is praised, and pushing its students to be the absolute best that they can be.

Is there anything you would like to say to MSMS alumni?

Alumni, I hope you will continue to give back to MSMS because it is always worth it.

Class of 2014



Monica Kala, 18, of Clinton, MS

What year did you graduate, and where are you now? If in college, what are you studying?

I'm a recent graduate of the class of 2014. I'm now at Tulane University in New Orleans studying biomedical engineering.

What are your professional goals?

As of now, I would like to attend medical school and become a doctor someday.

What about the school most attracted you to MSMS?

When I was applying to MSMS, I was mostly captivated by the academics. I probably read the course catalog three times during my application process, and I was extremely excited about all of the different classes I could take. I wanted to be absolutely prepared for college, and I felt as though MSMS would be the best way for me to get that experience through both the academics and the residential life. I also had always dreamed of going to a boarding school, so MSMS was really appealing.

Describe your first day at MSMS. How did your senior year compare to your junior year?

I remember feeling really nervous before the first day. I think I anticipated it being hard to make friends quickly, but that was not at all an issue almost immediately. Everyone was extremely enthusiastic about being at MSMS even in the insane heat (another thing I remember specifically about my first day—being very, very hot), which made the transition much easier than I anticipated, and I began to feel comfortable almost immediately. I also remember the first couple of days as being very overwhelming in terms of the amount of information we had to absorb, but I really was happy to be there almost

immediately. However, I did cry on my first night, just from slight homesickness, but I got over that pretty fast, thanks to my emissary. Both of my years at MSMS were amazing, but in completely different ways. I was much more stressed about the academic aspects of MSMS junior year whereas senior year I was more stressed about the college process. Junior year, I had fantastic seniors, and I felt as though they helped guide me throughout the year. It was crazy to be a senior and have juniors to help out the next year. I remember when one of my seniors sat with me for over two hours helping me with physics homework during my junior year, and it's weird to think that a year later I was helping some of my juniors with Mastering Chemistry (an online homework program). My entire time at MSMS was a learning experience, though, and although I loved both of my years at the school, it's very hard to compare the two years I was there just because they were both very different because I had different priorities.

What aspect(s) of MSMS do you hope never change?

I hope the camaraderie of the MSMS students will always be the same. I always appreciated how the atmosphere was never "cutthroat," rather, everyone wanted everyone to succeed. That family feeling is extremely unique to MSMS, and the school wouldn't be the same without it. I also appreciated that I never felt like I was learning for a test. All of my teachers taught with the idea that knowledge was something that should be actively pursued and gained simply for the purpose of learning new ideas, never to just be spit back on a test.

Do you have any hopes for MSMS alumni, present and future?

I would really like there to be some sort of alumni network so that it would be easier to connect with alumni in different parts of the country. The alumni association is clearly filled with brilliant minds, and I think it would be worthwhile for newer alums to be able to ask others for advice.

Is there anything else you would like to share?

I am honored to be an MSMS alum, and I think it's safe to say that it's pretty darn amazing to have attended the 57th school in the nation, and one of the top 25 high schools in the South. Also, even though I haven't been a graduate for a long time, I know that the memories and some of the friends I made at the school are going to be lifelong, which is not something many other high schools' students can boast about. MSMS was by far the best experience of my life thus far.

Q&A

What university did you attend, what was your major, and what degrees did you receive?

University of Mississippi (Ole Miss)

Bachelor of Arts: Mathematics

Doctor of Philosophy: Topological Group Theory (Mathematics)

What do you do now?

I am currently an RD IT Analytics Research Lead (Genotype and Environmental Modeling) for Monsanto Company. My day to day activities consist of facilitating the statistical work, proofreading my team's technical documents, and holding/attending analytics strategy meetings to map out 1-3 year plans. Actually it's somewhat familiar to advising research students.

What is the best/most exciting thing about what you do now?

I get to work with some of the brightest mathematicians, statisticians, and engineers leveraging cutting edge academic research in Machine learning, Bayesian Spatio-Temporal modeling, Image Processing, and Mathematics to design and build statistical and mathematical models for optimisation of and sustainability in agriculture. Most exciting of all, I get to use mathematics to help feed the world.

You've worked in both academia and private industries. What are the positives and negatives of those situations?

The obvious differences between the two are the holidays (vacation structures). Academia certainly affords more time to explore independent research. But I truly think you need to have a calling to truly enjoy the academic lifestyle. The difference, and why I ultimately chose to leave academia for industry, is industrial mathematics provides a direct connection to what impacts mathematical

modeling can make on our society.

Why did you go to MSMS?

The plan was always to attend MSMS from its opening in 1987. Mathematics has always been a passion and something that came naturally. I knew that I needed to have an environment where I could be challenged and exposed to higher level mathematics that I would otherwise.

Describe your first day at MSMS. Was it exactly what you expected, or did anything surprise you? Is there one feeling that stands out in your memory?

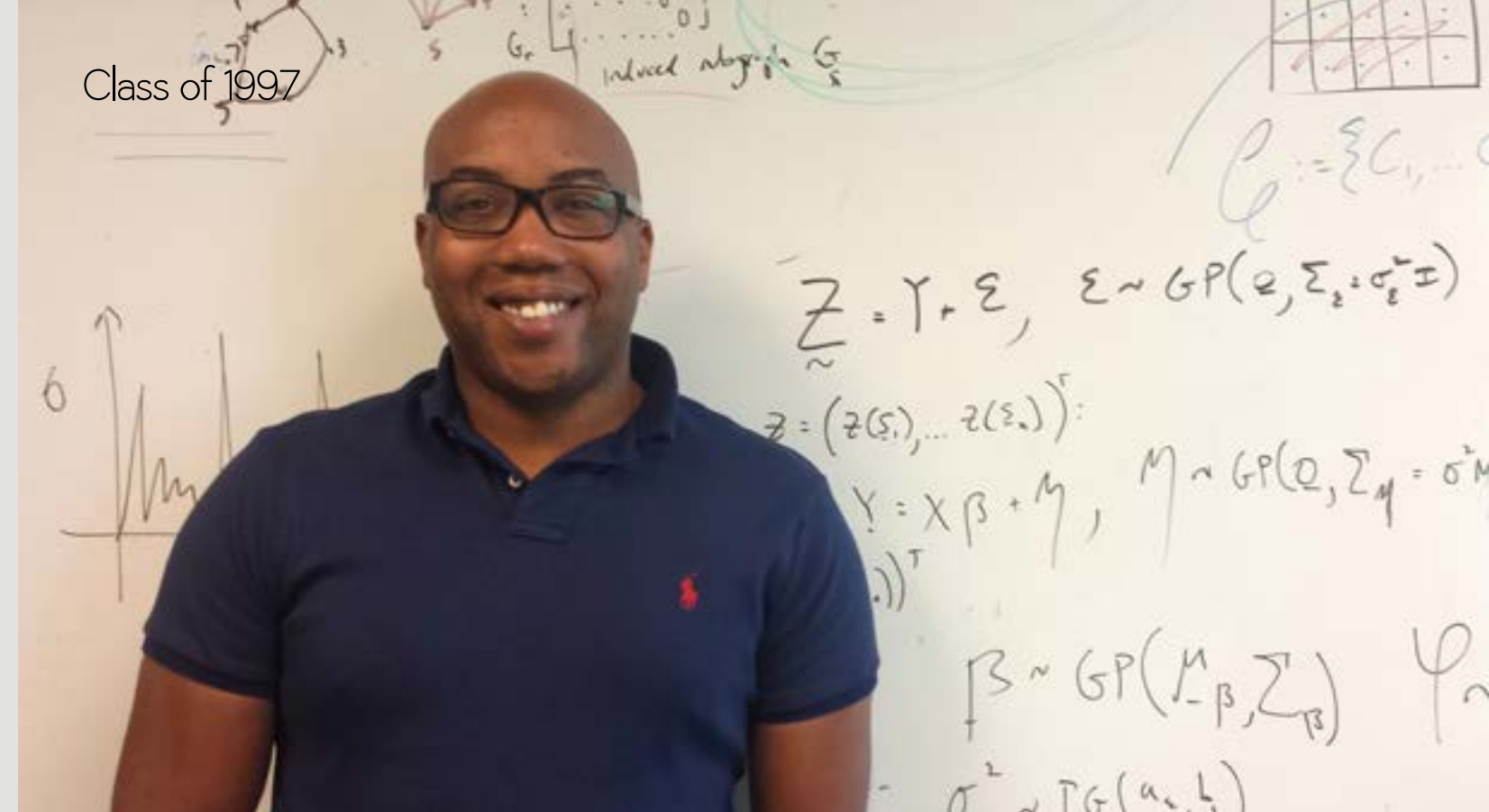
It wasn't exactly like the movie "Real Genius" as I had hoped. I had this notion that I would immediately be playing with lasers and a man named Laszlo would be lingering the halls. But in all seriousness, my initial impression was what I had imagined. I immediately felt at home with incredibly bright minds. I think the first thing that came to mind was that my life was going to change in ways that I would never imagine.

What MSMS experience or teacher (academic or residential) at MSMS impacted you the most?

By far the most impactful teaching who has forever left a lasting impression on me, was Dr. Lily Doty (Chemistry). I served as her TA my senior year. I felt privileged to get to know her on a personal and professional level. She gave me insights into the academic research process and what it took to be an effective innovator.

Do you think MSMS is important to Mississippi's students, the city of Columbus and/or the state itself? If so or if not, why?

MSMS is probably most important to the students. In times like these, with inadequate funding for our public schools in economically depressed states like Mississippi, having an institution like MSMS provides students the academic rigor and exposure



Adrian Aloysius Wilson Cartier, 36, of Jackson, MS

to first class curriculum and instruction giving them the tools and skills necessary to compete on the national level.

What aspect(s) of MSMS would you recommend changing or improving?

I think moving to a four year model would be an interesting approach. Considering some of the prep schools in New England, they seem to have great success having students matriculate through for longer periods of time.

What aspect(s) of MSMS do you hope never change?

I hope admission to the school always remains merit based and the funding model remains scholarship based through tuition waivers subsidized by the state or endowed funding sources.

Do you have any advice for future applicants and students?

I think what served me well was staying true to myself. Always be creative. Intelligence is assumed, as trite as it may sounds outside the box thinking is valued at MSMS as well as in the real world. These

are the things I tell my analyst regularly.

Do you have any hopes for MSMS alumni, present and future?

I hope that our group as it continues to increase in size can foster the connections and networking capabilities as our New England prep school counterparts.

How did MSMS help you professionally?

I definitely was thrown into the deep end quicker than most of my contemporaries which allowed me to understand the value of being a self-started, self-motivated, and an independent thinker.

If someone at MSMS were interested in following your career path, what advice would you give?

Two pieces of wisdom I can give anyone looking to pursue mathematics then ultimately analytics, 1) take as many computer programming courses as you can. Actually, I would advise all students to do that, 2) Network, network, network the people you know are going to be more valuable than you might realise. Maintain the relationships you make at MSMS and college. You may be the connection someone else needs and vice versa.

MSMS among the 25 best high schools in the American South

MSMS continues to shatter records and expectations despite budgetary woes



MSMS is also currently ranked #57 of the top 1,000 high schools in the nation, according to Newsweek and The Daily Beast.

State of the School

School Year 2014-2015

Total Number of Students: 256

Total Number of Seniors (Class of 2014): 117

Total Number of Juniors (Class of 2015): 139

Total Number of Counties Represented: 55

Despite budgetary woes, MSMS continues to shatter records and expectations. The graduates of the class of 2014 alone were offered more than \$20 million in scholarships from universities all over America. That's up from the \$13.5 million offered to the class of 2013, and up from \$2 million offered to the class of 2010. MSMS also recently learned that The Daily Beast named it one of the top American high schools for the third year straight. Even more impressively, the school bounded nearly 300 spots in the rankings, from 352 in 2013 to 57 this year. The publication also named MSMS among the very best 25 high schools in the American South.

"I mean, just imagine what we could do if we were fully funded," said MSMS Coordinator for Alumni and Public Relations, Wade Leonard. "I don't mean to sound corny, but this school is a beacon of hope and progress for a state, which frankly, doesn't have the best reputation in education. We've proven time and time again that this investment in Mississippi's gifted students pays back huge dividends not only to the students who attend the school, but to the entire state itself."

The fact is, however, MSMS is facing some tough financial challenges. If these challenges are not met, it could mean that the school will be able to accept fewer students each year, be forced to cut important programs, and push back vital maintenance and upgrade projects that have been planned.

The current budget for fiscal year 2015 is about \$5.2 million. The state will provide about \$4.5 million, leaving it up to the school to determine how it will locate the remaining \$700,000. Other sources of income for MSMS include the room and board fee, which works out to about \$185,000 and the MSMS activities fee, which equals \$30,000. In the past, all students have paid the activities fee,

but recent rule changes have mandated that those who have waivers for the room and board fee (by being eligible for free or reduced lunch) will not pay the activities fee either. Currently, 55 of the school's 244 students have room and board fee waivers.

"We actually support this decision," said Dr. McConnell. "Nonetheless, it means we will be receiving less money from those students who obtain the waivers."

The biggest change in the budget will come from the school's plant fund account. For the past several years, MSMS has dipped into that account to cover some of the school's costs. However, after this year, Dr. McConnell has decided that that account will be off limits. This year, \$421,000 will be taken from that account, but that money will not be available after this year.

"While we are in no danger of depleting the plant fund we need to make sure that money is there in case of an emergency," he said. "We are not touching it after this year."

The majority of the school's financial obligation is directed toward the school's pay roll, and much of the rest is consumed by operational and maintenance costs. The remainder is allocated to the budgets of different departments on campus, some of which may be cut in the coming years if a solution to this financial issue is not found.

If a solution is not found, the first cut will come in the form of the number of students the school can accept each year. The current junior class is 135 students strong, but future classes could be comprised of class bodies of 100 students or fewer. This comes at a time when interest in MSMS has never been higher. As of this writing, nearly 60 students from the Class of 2016 have begun

continued next page...

State of the School, continued...

work on their MSMS applications. At this same time last year, barely a dozen students had begun applications.

“I want to be clear about this,” said Dr. McConnell. “As long as I am here we will never compromise on the quality of instruction that this school provides, even if that means we have to accept fewer students.”

Other areas of the school that may take financial hits are the funds used to purchase instructional supplies, scientific supplies, and computer equipment. “That concerns me more than anything else,” said Dr. McConnell. “In order to fulfill our mission, we have to be cutting edge and that means maintaining top notch-technology.”

Student travel may also take a big hit. This means that the school will be able to participate in fewer national competitions like the International Science and Engineering Fair in California or the National Rocketry Competition in Washington, D.C. Even if the school were able to participate, the students and their families would be responsible for their travel costs.

“Sure we have some students for whom that would not be a problem,” said Dr. McConnell. “But we also have several whose families could never afford a trip to California.”

Facility upgrades and maintenance, especially in the student residence halls, is also desperately needed. In many of the school’s facilities, no significant work has been done in more than 15 years. The facilities need new furniture, new bathroom fixtures and new flooring. Over the summer, MSMS was able to allocate the funds to remove the old carpet from Goen Hall and begin replacing it with tile, but was only able to afford completion of half the project.

As dire as some of this might sound, it is not hopeless. MSMS does have her advocates. The school is supported and governed by the Mississippi Department of Education., and last year, MDE recommended that the legislature



allocate an additional \$1 million to the school. That recommendation was not adopted, but MSMS expects MDE to make a similar recommendation this year.

“This is why it is so important for our constituents to reach out to their local legislators,” said Dr. McConnell. “We need them to be reminded that we are here and that we provide an incredible service that the people of this state care about.”

MUW has also been a strong supporter of MSMS. The university is working to undertake massive facility refurbishment and the school has been assured that the needs of MSMS are being taken into close consideration during this planning phase.

Finally, and most critically, there is the MSMS Foundation. The Foundation is the largest financial supporter of the school. In coming years, it is clear that MSMS will rely on the organization more heavily for support than it has in the past.

“I am cautious, but I am also optimistic,” said Dr. McConnell. “This school has done some amazing things over our history and will continue to do amazing things. There are enough people out there who benefited from and care about MSMS that I am confident they will step up to the plate when we need them.”



WANT TO SUPPORT MSMS?



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CHEERS Y'ALL

THE YELLOW BRICK ROAD

By Cynthia Henderson, Class of 1995
& Kassie Brooks

We've all heard the story about the pigtailed little girl who, through a series of seemingly unfortunate events, ends up following the path of a mysterious yellow brick road. The journey of a lifetime transpires. There is a wonderful mystery behind this enchanted, winding road. The warm, yellow hued bricks of fulfillment seem to call out to wondering minds and the discontent at heart. With twists and turns of uncharted territory, this path promises nothing but uncertainty. In many

ways, entrepreneurship is this wonderful and mysterious path. The unknown possibilities beckon to entrepreneurial spirits to pack up dreams and life experiences and begin the treasure hunting road trip to success.

What lies beyond the field of view of this intricate path to entrepreneurship depends on many factors. We had a fascinating conversation with Mark Henderson and Leslie Hatcher Henderson to find out how the mystery of the yellow brick road led them to become the owners of two successful Mississippi businesses.

Mark and Leslie are the owners of Lazy Magnolia Brewery, LLC, in Kiln, Miss. It was the first of what is now a burgeoning craft beer industry in the state. Upon entering this dimly lit brewery, the sounds of the heavy operating machinery zipping by are overlaid with the rich and peculiar smell of roasted grains and yeast. They also own Log Linear Group, LLC, in Bay St. Louis, Miss. LLG is a very different business that prides itself on bridging the gap between real-world physics, implementable electronics, and custom algorithm development to take innovative projects from inception through production.

Mark and Leslie's journey began in two small communities. Mark lived in the community of Tucker's Crossing and transferred from Northeast Jones High School in Jones County. He went on to graduate from The Mississippi School for Mathematics and Science (MSMS) in 1991. Leslie lived in the community of Nanih Waiya and transferred from Neshoba Central High School in Philadelphia, Miss. She went on to graduate from MSMS in 1994.

Both of their journeys continued at Mississippi

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THE YELLOW BRICK ROAD

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State University (MSU) with undergraduate and graduate degrees. Mark worked at the MSU Digital Instrumentation Lab (DIAL) and then at Professional Service Industries (PSI) as a young engineer. At both jobs, he worked primarily on the development of prototypes for a variety of government and commercial clients applying electrical engineering principles. Leslie got her professional start at Mississippi Polymer Technologies, Inc. (MPT) working on the development of space age polymers.

Then that yellow brick road beckoned the Hendersons. Their Lazy Magnolia Brewery, LLC, adventure got started when Leslie bought Mark a beer home brewing kit for Christmas. Mark describes his initial reaction. "Like when your sister buys you a Cabbage Patch Doll – it isn't really for you." He brewed one batch, and then Leslie took over, relying on her education and experience as a chemical engineer to optimize the process. Mark got to design the gadgets to make the process better, relying on his electrical engineering background. Before long, it was a hobby run amuck that had consumed the house and their free time. Friends and family encouraged them to go professional, and after investigating the pitfalls and promise of a beer brewery in Mississippi, they decided to go for it.

Leslie pursued more training, and Mark developed the business plan. In September 2004 they secured

a location, and in January 2005 the first batch of beer was brewed at Lazy Magnolia Brewery. Hurricane Katrina paused things in August 2005, but they quickly cleaned up and moved on. Their beer is now available in numerous styles in 14 states. As of July 2014, they employ 30 individuals full-time inclusive of their facility in Kiln and field sales staff spread across their sales area.

Mark's journey has also included LLG, a technology company with a highly technical staff developing state-of-the-art implementable electronics in various applications, many of them related to the military. LLG was established in 2006 by Mark and a fellow scientist based on their shared background of applied mathematics. Among many other projects, they have developed a state-of-the-art radar system to use in wind profiling within the convective boundary layer. A real-world application of this technology would allow a pilot to more accurately deliver a load being delivered by parachute to field personnel.

Mark and Leslie both had early influences that inspired them to embark on the yellow brick road journey. They both recall memories of parents and grandparents working in businesses such as a retail craft shop and farming. Mark humorously recounts a tale of an early business venture in junior high. "In junior high, darts were the hot item. Kids had started making darts out of a piece of paper, a straight pin and a pencil eraser. I set up shop, selling kits and teaching people how to fold the wings." He went on to say that "Business was good, until one day, while everyone was throwing darts at each other, one kid had a dart shot right into his cheek at exactly the same time as the teacher came into the room." With laughter, he said that ended his initial business venture.

For Leslie, she recalls an influential mentor at the beginning of her career. "Robert Gagne was a highly successful serial entrepreneur who had built businesses ranging from growing orchids, to making high performance plastics, to formulating candles with unique wax designs. His model was to go into something highly specialized, to the point

of being nearly impossible, build a business, create a bunch of budding new entrepreneurs in his wake, then move on to generate prosperity in another state in another field. Robert "fathered" hundreds of entrepreneurs including me."

Among their influential experiences, both Mark and Leslie cite MSMS. Mark thinks one of the most influential aspects of MSMS was that it expanded horizons and took kids out of their comfort zones. He recalled Mrs. Claudia Carter asking in her game theory class, "What else can you do with that?" He said those sorts of experiences had a huge impact on him. Leslie enjoyed the challenge of the academics, but she said the biggest impact was that she met Mark at MSMS.

When asked what advice they would give someone interested in following the yellow brick road to success, they gave advice both practical and pragmatic. Mark stated that, "If you are potentially interested in a business, go work for someone in that field. Be the best employee you can imagine. Be engaged. Do the hard work. Understand the job." He went on to say, "You can be an entrepreneur inside someone else's company, and get paid to learn it. The best experience is experience you don't have to buy." He also said that at the end of the day, entrepreneurship is about tenacity, with a firm grounding in reality. He said, "You have to believe in yourself and the path you have chosen."

Leslie added to Mark's thoughts and emphasized that "Academic experience and grades are not very important. Bankers, investors and potential customers are NOT going to look at your transcript, care what college you graduated from, or care what your degree is." She further elaborated that "Work ethic and relationships are the key to success of any kind, but most important when it comes to being an entrepreneur."

Leslie also said that volunteering was an important aspect of success. She encouraged everyone to "Volunteer in the community-that's how you learn truly valuable skills, meet some amazingly influential people, and show the world what you're made of."

Overall, it was a fascinating conversation with two alumni who obviously have a true passion for what they do. We look forward to more great beer and amazing devices. You can find out more about Lazy Magnolia at www.lazymagnolia.com and Log Linear Group at www.loglineargroup.com.



From Classroom to Cadet

by Owen McGuire, Class of 2005

Every day, brave men and women in uniform work countless hours away from their friends and family to protect the United States of America. A member of the United States Army, 2006 MSMS graduate Ryan Kim is one of those brave men.

Ryan lived in Ridgeland, Miss., before making his way to Columbus to attend MSMS. He graduated in 2006 and set his sights on the United States Military Academy in West Point, N.Y. Most recent MSMS graduates have a couple of months to prepare for the transition from a high school classroom to a college classroom, but Ryan?

“A few weeks after graduation, I started field training.”

After graduating from West Point in 2010, Ryan moved around a few bases, including Fort Knox in Kentucky,

Fort Bliss in Texas, and Fort Leonard Wood in Missouri, where he is currently stationed. It was during his three-year stint at Fort Bliss that Ryan was deployed to Afghanistan for nine months.

Ryan headed to Afghanistan to serve as a logistics personnel, taking on a new responsibility as an executive officer of a headquarters company to support their combat operations. Eventually, his role changed to a logistics officer for an infantry battalion.

“I did logistics for about seven or eight different bases,” Ryan said. “We made sure they had food, water, latrines, utility stuff. Anything they needed supply wise, on top of their daily consumption, we took care of it.”

Ryan also helped close down bases and redeploy gear

and equipment back to Fort Bliss. His responsibilities resulted in 12-14 hours of work a day, every day.

It is easy to draw a direct line of influence between MSMS and many professions, and Ryan’s current career is no exception.

“MSMS gave me the opportunity to get into West Point. It also helped me out with my first year. It made it so easy to be a freshman. I took a lot of classes that were similar, or on the exact same level.”

As part of the unique military culture, Ryan explained that freshman year at West Point is usually treated like an initiation process. This can include anything from memorizing facts to doing grunt work, such as taking out the trash. Most freshmen

have to deal with the initiation activities on top of their regular schoolwork, but not Ryan.

“I did not have to stress over the academics, so I was able to focus on learning the military culture.”

Ryan majored in engineering management at West Point. From his junior year in 2008 until the end of 2013, he worked as an armor officer, a position usually in charge of commanding tanks or scouts and reconnaissance. However, since the beginning of this year, he has worked as an army engineer, a job he described as being more beneficial for when he returned to civilian life.

“Engineers are basically a Swiss Army knife: constructing or destroying buildings, bridges, or roads during

combat, clearing a mine field, setting up base camp. If there is an obstacle in the way, engineers take care of it.”

Like most people in the military, Ryan has moved around the country a number of times, but he still holds MSMS close to his heart.

“MSMS is an experience of my life that I will always remember. The people that I met there, the friends that I made there, it’s just hard to reproduce anywhere else. I know that being there opened so many door up for me that I would have never been able to go through otherwise.”

Ryan is also quick to heap praise on the MSMS faculty.

“The teachers are what make the school fun and worth going to. All of my teachers were smart and engaging. To me, it does not matter if they have advanced degrees to teach their subjects, they just need the right personality.”

Ryan’s contract with the army ends in 2018. At that point, he will be able to decide if he wants to remain in the service, or return to civilian life. When it comes time to make that choice, Ryan can be certain that his time at MSMS, even 12 years prior, will have an impact.

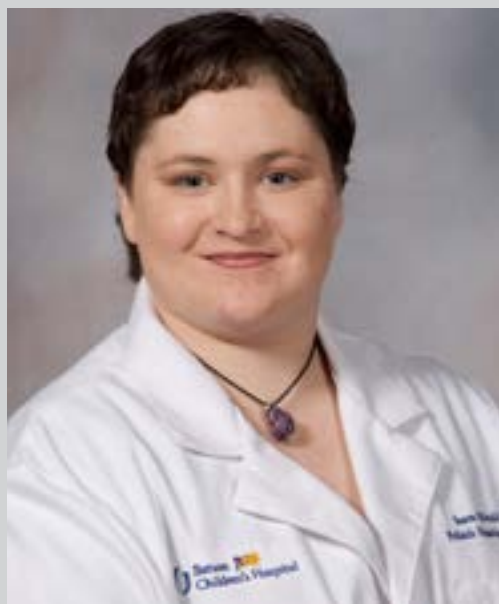
“MSMS was a huge stepping stone to start this process. Without MSMS, I would not have been able to go to the military academy. Because of that, it helped me get to where I am in the military.”





The Creative & Innovative Spirit of MSMS

by Owen McGuire, Class of 2005



All it took was her slightly-out-of-breath voice on the phone to prove that Sharon is a busy person. We had scheduled this call for a rare empty spot on her schedule: just after a long meeting at work, and just before

heading home to her duties as a mother. What I had promised would wrap up in less than 30 minutes turned into nearly an hour. Sharon proved that, once you get an MSMS alum to start talking about the school, it is hard to get them to stop.

Sharon Groat McDonald graduated from MSMS in 1996. Originally from Rankin County, she

remembers how she learned about a unique opportunity a few hours drive north.

“Someone from MSMS came to visit my class and talk about the school. I remember my math teacher telling me I should go, because at the rate I was working, I was going to max out of my classes if I stayed where I was.”

When Sharon speaks about MSMS, she finds it hard to put her finger on any one thing that makes it a different place. Rather, it takes all the pieces working together to create the school’s unique atmosphere.

“I am taking a leadership course, and we sometimes talk about corporate cultures. In the early stages of a corporation, there is a culture of creative spirit. It was very much that spirit at MSMS. Let’s take the best and brightest and give them a chance to foster that development and see what advances their educational interest.”

After graduating, Sharon was accepted into the early entry program to attend pharmacy school at Ole Miss. She eventually graduated from medical

school at the University of Mississippi Medical Center in Jackson in 2004. While she pursued a high level of education in college, Sharon says that MSMS has a quality that not even the university setting can seem to replicate.

“At MSMS, the idea that I could walk to the school at 6:30 in the evening and ask a question or get help on my homework was amazing. Nobody made fun of you for doing extra work. I didn’t get that spirit in college.”

Sharon also cites MSMS for allowing her to broaden her educational experience.

“The school’s name may include ‘math and science,’ but it has everything. I had the opportunity to take courses that I wouldn’t have been able to take otherwise. In college, you have to have a major, which limits the classes you can take, but there is no one at MSMS saying ‘don’t do that.’ For example, I made a robot. I was in a robotics competition. I took physics and advanced calculus and modern American literature.”

Sharon’s professional life has taken her to the edge of the Southeast. After medical school, she joined the pediatric medicine program at Arkansas Children’s Hospital in Little Rock. From there, she went into a hematology/oncology fellowship program at Washington University in St. Louis. When she was finishing her third year there, a family illness made her decide to come home to Mississippi.

Sharon now works as a pediatric hematologist oncologist and clinical informaticist at the University of Mississippi Medical Center. Half of her time is spent caring for children with cancer and hematologic illnesses. The other half of her job involves the integration of information technology and healthcare in the emerging field of clinical informatics.

As our call was approaching the one-hour mark, I asked Sharon what is one thing that she hopes has not changed about the culture about MSMS.

“That innovative spirit,” she replied without hesitation. “Sometimes things can get stale and stagnant, and I really hope they have maintained that same innovative spirit. When I visited campus for my 10 year reunion, I still felt that sense of ‘We’re here to change the world.’”



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