Where are They Now?

Jeff Douglas (Mathematics, 2006), from way back when, is now an officer in the National Oceanic and Atmospheric Administration (NOAA) Corps. He joined NOAA after serving as an analyst in the US Army for several years, and he now serves on the NOAA Ship Fairweather.

With respect to his studies in mathematics and how this helped in pursuing these two very different careers, Jeff writes

> *Learning how to think in a logical and quantitative manner prepared me for my work early on in the army... The communication skills I learned working closely with my professors (at UAS), and tutoring in the Learning Center prepared me to clearly and succinctly communicate concepts and technical nuances to audiences that were unfamiliar with my area of expertise.*

And, for his current career with NOAA, Jeff says

> *Any degree other than a B.S. in mathematics would have made me less competitive in my current career. Taking aside for a moment the strong emphasis in quantitative education, the B.S. in mathematics communicates a level of focus and dedication to a specific and challenging discipline.*

He concludes with

> *If I could give any advice to your (UAS) future graduates, it would be to figure out how to find happiness in your studies. I really enjoyed my time at UAS, ... I loved exploring different disciplines and ideas, ... If I could have done anything differently, it would have been to worry less about a specific career or graduate program. I have found that getting a B.S. in mathematics did in no way pigeon-hole me to a specific career path. If anything, I have found that jobs and training programs have an "or math" caveat; that is, where they will request a degree and background in a specific discipline, or a math background.*

The Fairweather, and Jeff, will be visiting Juneau this summer from May 30th till June 6th. Apparently tours of the ship (a hydrographic survey vessel) will be possible!

Jon Bower (Environmental Sciences & Mathematics, 2006) is still with the (San Francisco) Bay Area Air Quality Management District, but now as an Air Monitoring Supervisor. He has a small staff and manages the data systems for the entire network of air monitoring stations (about 30 stations with quite a bit of programming), the meteorological network (about 19 stations), and special projects ("*everything that doesn't fit somewhere else*").

He writes

> *Needless to say, I am keeping really busy and putting my math skills to work daily!*

As for his decision to pursue a double major, he says

> *I think my double major (Math/Env. Sci) was pivotal in completing my PhD* (Atmospheric Sciences, UC Davis, 2012) as *well as my subsequent position as a Post Doc and now at the Air District. The environmental science side allowed for understanding of earth systems---how things tie together and why we care. The math side of things allowed approaching challenges logically and provided the ability to solve complex problems. The two go hand in hand. The full math degree (e.g., instead of a minor)*

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provided the ability to gain a broad understanding of numeric and logical systems. Getting the double major was actually quite easy, too. I think it took an extra year, but the wrap up and ability to focus solely on math that last year was extremely beneficial. So much fun!

Side Note: In Jon's day the "double major" involved getting a second degree *after* completing one - hence the "extra year." Nowadays it is *possible*, with *careful planning*, to get two degrees (for example, a BS in mathematics and environmental sciences) simultaneously.

Josh Galbraith (Mathematics, 2008) has moved on to becoming CEO of his own startup, Seastar. He also serves as the Chief Data Scientist and Head of R&D at its parent company, Network Redux. He describes Seastar as a cloud database service built around an open-source, distributed database called Cassandra. About his work, he writes

The two programming languages I work with the most are Go (a systems language) and R (a statistical language). I didn't study computer science at UAS, but I was able to pick up some modest programming skills after graduation while working as a Research Technician under Matt Heavner. My math background has helped me to fill in the rest of the gaps relatively quickly and over the past few years I've been able to work side-by-side with software engineers that hold advanced degrees in CS.

He goes on to say

I recommend getting a degree in any STEM field to prospective undergraduates or those looking to go back to school. Math is a great choice because it is applied to so many fields. Having a degree in math can unlock a wide variety of job opportunities across many industries. I think a math degree is one of the most versatile degrees you can graduate with. I don't know if I realized that at the time of my graduation, but it seems to be increasingly true as so many companies rely on data-driven decision making.

Side Note: Some of you might recall Josh and his "String Theory" partners - see 2008 Newsletter.

James Bauman (Mathematics, 2008) earned his J.D. from Oklahoma City University School of Law and now lives with his wife and their 7 month old son in Houston, Alaska. Work-wise, he writes

I just recently decided to hang a shingle and open my own practice, mainly criminal law and family law in the Mat-Su Valley (Palmer and Wasilla area for those not familiar with the area north of Anchorage).

James recalls his first mathematics class at UAS,

I walked into Ron Seater's Math 055 class thinking I was the dumbest thing in Juneau. However, after a semester of asking questions and doing the work I was rewarded with a passing grade. This meant that I could finally take college level math classes. This first semester laid the foundation for my success at UAS.

and what followed,

Under the guidance of Ron Seater I enrolled into the BS in Mathematics Degree program. The classes were tough. It took time to understand and then learn the material. ... It was hard but rewarding. Just like life, you get out of it what you put in.

In conclusion, he says

I have since moved away from the study and discipline of mathematics, but I have not moved on from the discipline that the study of mathematics has instilled in me. I have taken that discipline and have

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applied it to the study of law. ... This would not have been possible without the math program and the support of the dedicated professors there at UAS.

Derrick Grimes (Mathematics, 2009) took yet another direction. For the past six years he has worked in tour management and advertising at Coastal Helicopters in Juneau, and the six years prior to that he was involved in front line work for another helicopter company, Temsco Helicopters, also in Juneau. In response to the question about what skills he came away with from studies in mathematics, he says in his signature succinct manner.

Primarily problem solving and reasoning. There's very few complications, with people or schedules, that can't be reduced and refined into some very basic concepts of reasoning, and once you've done that, the solutions tend to present themselves.

His advice to current mathematics majors?

To persevere! I definitely took my time, and had my ups and downs with classes and concepts, but at the end of the process, I felt accomplished and fulfilled by the program. Even if I never crack another text book in my life, I feel like I came away with some excellent day to day skills that I put in practice on a regular basis.

And, for those considering mathematics at UAS he suggests,

Get interested, talk to active participants in the program, seek out and find others that are excited about the field. Math can be dry and tedious, but there's another side of it that's absolutely riveting and it's worth your time to find it.

Micaela Martinez-Bakker (Biology & Mathematics, 2009) earned her PhD in Ecology and Evolutionary Biology from the University of Michigan in August 2015. She is now a postdoctoral fellow in the Department of Ecology & Evolutionary Biology at Princeton University, supported by a US National Science Foundation Postdoctoral Fellowship in Biology. To find out more about what Micaela is up to, check out her website at https://memartinez.org/.

Concerning mathematics, and its usefulness, she writes

I am an infectious disease ecologist and my expertise is mathematical modeling of infectious disease transmission. The solid foundation I received in pure mathematics as an undergraduate at UAS allowed me to learn applied mathematics research skills in graduate school. PhD programs in Ecology & Evolution have very discipline-specific course work because they are research focused; therefore, all my formal math training came from the UAS math program.

Micaela also earned two BS degrees (as opposed to a double major). About this she says

I did two B.S. degrees at UAS, math and biology. I was accepted into a lab with an applied math focus in graduate school because of my dual degrees. Many of the people in my field have PhDs in applied math or physics, but having the dual undergraduate degrees gave me the ability to work at the interface of biology and mathematics while doing a PhD in Ecology & Evolution. I would not be in the position I am in without the dual degree.

It takes time, but it wasn't particularly difficult. It took me 6 years to do the dual degree, which I think is reasonable and beneficial for students doing undergraduate research to prepare for a PhD.

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But, she added,

If I could do it again, I would have put more effort into learning a programming language in undergrad as part of my senior project and I would have also learned more statistics (probability in particular).

In her opinion, there were benefits to attending UAS.

The small class size and personal interaction with UAS math professors is essential. Having been at large universities after finishing undergrad, it is amazing to see how many students struggle with mathematics as undergrads because they are learning calculus or linear algebra from graduate students who are just trying to keep their heads above water, or they are in a mega-class where their professor will never know their name. The one-on-one interactions with professors who are actually professional teachers and not just professional mathematicians is priceless; UAS offers that.

Eric Keller (Marine Biology & Mathematics, 2013) has been working at ADF&G's Commercial Fisheries Division as a Data Processing Technician for the past two years, at the same time dabbling in tasks closely associated with those of a Research Analyst. In response to the question about skills acquired from his background in mathematics, Eric writes

Problem solving and critical thinking for sure. I learned to reframe questions, to think about the 'domain' of a problem, the assumptions involved, and how to structure my attempts to solve it.

And, have these skills helped him?

Yes, absolutely. I work with fisheries data every day. In order to properly analyze and interpret these data, I not only need to understand how to work with numbers, but also the biology those numbers represent. I know that my training in Marine Biology and Mathematics has helped me with my work.

About the double major,

I can't say that getting a double major was easy, but the process was very smooth. Brian Blitz helped me plan my courses usually a year or two years in advance. All I had to do was pass them…

As for advice for current majors, Eric has much to say:

1. *TUTOR OTHER STUDENTS!!!!! You don't truly know something until you have to teach it. I probably learned as much or more from tutoring people (at the Learning Center) as I did from my classes.*
2. *Ask questions all the time.*
3. *Be a double major (at least in spirit) - even if you want to be a theoretical mathematician, you should learn about something else. Not because math isn't enough, but because you can learn a lot about mathematics by using 'it' to explore other subjects.*

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4. *Learn some programming - I do a lot of programming in different languages, even though I have little formal training in programming. You may find a job in mathematics that doesn't involve a computer, but I suspect you will be one of a very small group.*
5. *Be relentless in your pursuit of understanding. You may never find a closed form function for the primes, but I guarantee you will learn a lot about prime numbers if you ever really try.*

And, for prospective majors,

> *If you're not sure if mathematics is the right course of study for you, I would talk to professors and current students. Ask about the program, what they (students) have learned, and what their (students) plans are after graduation.*

Sean O' Neal (Mathematics and English, 2010) started his secondary school teaching career in Idaho almost immediately after earning his MAT in secondary school teaching from UAS. He is now in his fifth year of teaching and has been contemplating new adventures in learning. Useful skills acquired during his studies at UAS include:

> *Just about everything! I learned more about how to be tenacious and yet tactful, how to work with people who come from a variety of mindsets, and most of all, I learned how to assimilate information and apply that information and how to accept a method that isn't exactly the one taught.*

His advice for current majors,

> *Space things out. Don't try to do more than 2-3 math courses a semester while mixing in classes from other subject areas, especially the humanities. Math uses up a lot of brain power, so give those areas a rest while still learning other things and you'll find your time in the math program to be much more pleasant. Also... don't ever be afraid to ask questions. If you have a question there's a high probability that others in the room are thinking the same thing but are too afraid to ask.*

And, for those thinking about pursuing a career in mathematics,

> *Being a math major is about a lot more than just learning mathematics. You learn tools on how to attack insurmountable problems and make them look easy. You learn about how to open your mind to other possibilities, and you learn how to analyze problems in a logical manner, often coming up with solutions that are counter-intuitive but especially effective.*

Dustin Raymond (Mathematics, 2009), another graduate of the MAT program at UAS has been teaching mathematics at Green River College in the greater Seattle area for the past several years.

After serving as the Math Specialist/Testing Supervisor/IT Liaison for the UAS Learning Center for three years, ***Gabriel Wechter*** (Mathematics, 2012) took a year off to get in some traveling and climbing.

Gabe will begin graduate studies in mathematics at Western Washington University Bellingham in the Fall of 2016. Gabe came to UAS as an exchange student and decided to stay on.

He echoes the spirit of the thoughts of other graduates in his response to the question about skills gained through the mathematics BS.

> *In addition to achieving a well-rounded competency in mathematics. I believe that the emphasis on projects, especially the senior capstone, gave me strong research skills. I feel that I possess above average problem solving skills, and I attribute this to my hours of problem solving in UAS math classes. An unexpected skill that I left UAS with is a comfort with public speaking. I think the small class sizes took the edge off the first few presentations and made it easier to build confidence.*

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For current mathematics majors, he suggests

> *Try to have fun with your math projects. I remember having a lot of freedom in choosing topics for projects in many of the upper division math classes, and I suspect that is still the case. Look around online for topics, you can find fun "math puzzles", and also problems related to applied fields (Anything! Even sports or games!). The math faculty and math specialist(s) at the Learning Center never seem to have a shortage of fun and challenging problems to work on, so definitely ask! I also highly recommend working as a math tutor at the UAS Learning Center, it will give you the chance to solidify everything you learned in your calculus and pre-calc classes, it will boost your mathematical confidence, and it always feels good to help people.*

And, for prospective mathematics majors, he speaks from the perspective of a former participant of the National Student Exchange Program.

> *Moving to Juneau to enroll in the Math program at UAS was one of the best decisions I have ever made. I suggest you give it a try, if you are from out of state look into doing a NSE student exchange for a semester or a full year, I am willing to bet you stay at UAS.*

There are a few graduates who fall under the category of "when last we heard."

Last news of ***Stephen Perry*** (Mathematics, 2006) was that he was pursuing a doctoral degree in mathematics in Freiberg, Germany. ***Nicholas Axmaker*** (Mathematics, 2009) earned his MS in mathematics from Wright State University, taught classes at Dayton University, and recently took over as the Interim-Director of the Math Learning Center at Wright University. ***Anthony Gaussoin*** (Mathematics, 2010) earned his MS in mathematics at Montana State University, Bozeman and is now working toward his Ph.D. also in mathematics and also at Bozeman. ***Stephen Ellison*** (Mathematics, 2011) will have just completed his first year at the University of Washington School Of Medicine. ***Patty Gerdes*** (Marine Biology & Mathematics, 2014) leaves Juneau this Summer to begin studying mechanical engineering at University of Alaska Fairbanks in Fall 2016. Her goal is to work toward a graduate degree. ***Niki Jacobs*** (Mathematics, 2015) has been working toward a Ph.D. in environmental chemistry at University of Alaska, Fairbanks. Similarly, ***Erin Rausch VanHouten*** (Mathematics, 2011) is pursuing a graduate degree in mathematics, also at UAF.

For the past four years ***Alicia Hughes-Skandijs*** (Mathematics, 2010) has been working in Juneau for the Alaska Department of Health and Social Services as a Grants Administrator in the Division of Finance and Management Services. She continues to partake in Alaska Folk Festival performances/activities each Spring. Also working for the State of Alaska in Juneau, as a Research Analyst in the Department of Education and Early Development, is ***Amanda Mosher*** (Mathematics, 2013). Last news of ***Kevin Schriver*** (Mathematics, 2008) is that after spending some time as a CAD technician in Juneau he went on to earn a BS in mechanical engineering from UAF in 2013.

Like Sean, ***Lai Hinckle*** (Mathematics, 2010) began his teaching career at Floyd Dryden Middle School, Juneau, almost immediately after earning his MAT in secondary school teaching from UAS. He also tried his hand out at teaching evening classes of pre-algebra (MATH 054) at UAS. These days Lai teaches at Thunder Mountain High School (the new high school in "the valley"). ***Samantha Jenkins*** (Mathematics & English, 2014) also went into the UAS MAT program. She hopes to secure a teaching position in the Juneau School District.

As for the most recent graduates, ***Joanne Baranski***, ***Andre Bunton***, and ***Matt Sperber*** (Mathematics, 2015), they all took the year off to take a break from classes and also think about future plans.