Liesl Riddle:

Welcome to GWSB Proud, a podcast all about why are you proud of GWSB? My name is Liesl Riddle, and I am the Associate Dean for Graduate Programs here at George Washington University School of Business. And I have the great pleasure of sitting down with GW alumni, faculty, staff and students, to hear why they are GWSB proud.

Liesl Riddle:

Welcome to the podcast studio. I am Liesl Riddle and I am joined here today by one of my very dear colleagues, Dr. Murat Tarimcilar, and he has brought some of his faculty and advisory board members here today. Professor Tarimcilar is the Faculty Director for our Master of Science and Business Analytics program, as well as overseas, our two graduate certificates in the area. Welcome to the podcast studio, Murat.

Murat Tarimcilar:

Hey, great to be here. Thanks for facilitating this.

Liesl Riddle:

So who did you bring in here to talk to us today?

Murat Tarimcilar:

I have actually two of my advisory board members. And one of them also is an adjunct professor and teaches a very important course for us. I have Brian Morrow and Alfred with me today, to talk about what's going on with the program. But, more importantly, I think what they bring into us is what the marketplace expects from these programs.

Murat Tarimcilar:

Obviously as academics, we have a pretty good idea about what we can teach well, and what's important for them to learn. But that doesn't necessarily overlap with what the expectations from the marketplace ... And that's why the advisory board is an important component of our program. And, actually, interestingly enough, about two years ago, I was having breakfast with Brian and Brian talking about the changes in the corporate world about the way the analytics is being perceived, made me to start this re-modifying the curriculum. And I'm going to let both Brian and Alfred talk about their backgrounds, their relationship to analytics, and then we'll come back and what we're doing with the program. Hopefully that will be useful for the students. Brian, why don't you take first?

Brian Murrow:

Thank you, Murat. So, I have actually over 30 years of experience in business analytics. It didn't used to be cool as it is today. We used to be relegated to the basement and the real small cubicle, but now really, business analytics is built into everything. And so over the past 30 years, it's been in consulting, it's been within industry. It's been in multiple sectors, public sector, financial services and it's a real exciting place to be.

Alfred Hull:

Yeah. And I'll go ahead and follow that, Brian. So Alfred Hull. Hey, I'm a newcomer to the field. Started off in a decision science at ODU. Worked at companies like Target Corporation, Dollar Tree corporation and then eventually Amazon.com.

Alfred Hull:

Now working for the Department of Defense, I definitely echo some of the sentiments that Brian mentioned about business analytics. It's actually almost like an ether. Right? It touches every single field, it touches everything. And with Industry 4.0 coming on, it's just going to grow. It's cheaper to store data. More companies are seeing that it's better to keep the data versus get rid of it. So business analytics is going to be needed to be the glue in the organization, to bring these pieces together. Murat? [inaudible 00:04:01] that back over to you.

Murat Tarimcilar:

Exactly. Well, I'm going to actually tell a bit of a story about how the program came along. And maybe that would give some perspective to students who are right now considering whether business analytics or data analytics or data science or informatics programs are what they are looking for. Because, there is a variety of programs that deals with data right now and different aspects of it. And I think that they all have great value to the organization. It just depends on what you like to do with the organization, which program the students should choose.

Murat Tarimcilar:

We started this very early, actually. Not as early as Brian, not 40 years ago. But in 2010, it seems like we started talking about offering either a track in MBA that concentrates on data analysis, or at that time we even called it statistics. But then, eventually, we came back and in 2012, we started our Masters in Business Analytics. And at that time we were the first one in DC area. And certainly the only one in GW. Right now, DC has 11 business analytics programs with different universities. Georgetown, Maryland, Virginia Tech, [inaudible 00:05:20] all those universities are now offering business analytics program or some kind of analytics program.

Murat Tarimcilar:

But not only the analytics programs. For example, GWB itself right now has four programs in healthcare informatics, data analytics, data sciences and our business analytics. So when we first started, we tried to be a program for everyone. We taught them how to code, we taught them how to write programs, understand statistics, learn decision support systems and know everything. And, actually, at time when we first started, it was a 39-credit program.

Murat Tarimcilar:

Slowly as the others came into the platform, we started focusing more on the management of analytics and management of data in the companies. And what we realized is, people were finding these people who would code, who would write the algorithms and everything, but they didn't necessarily understand why the organization needed this, or what the organization exactly needed this. And, again, I'm going to give Brian a huge credit on this. Two years ago, he told me that there's a huge gap between those people who know the needs of the organization and those people who could write the code, find the algorithm. And nobody really knows whether those things are the solutions to the problem your organization was having. So with that in mind, we try to redo the curriculum. And that I'm going to let, actually Brian and Alfred to take over on that one and talk about that evolution in the market. In the corporation, what the needs were and what it is right now.

Alfred Hull:

Yeah, Murat. So I think you touched on a couple important points there. I see that organizations are starting to get into this Capability Maturity Model of decision sciences. And what's happening is, they're moving out of the descriptive realm of decision science and into predictive, and into prescriptive. And with more data coming online, I think it's more important that organizations start to shift away from having all these data puddles. And what these are is, these one-off analysis that some of the statistician teams are doing, or some of the data scientists that are working with tools like Anaconda or Jupiter, or even on Hadoop File Distributed clusters and stuff like this. But they're creating all these little pockets of goodness.

Alfred Hull:

I think what happens with some of the MBAs, or some of the more technical MBAs coming into the fold, what they're doing is helping to pivot the organization to where value is actually created across that Capability Maturity Model. And I think it's important. Without that, I think those data puddles just get lost in the ether. I'll go ahead and pass it over.

Brian Murrow:

Yeah. And just building on that Alfred, in the marketplace, our point of view is there's a difference between a professional in data science and business analytics. Understanding the business problem and having a point of view around that business problem is what really differentiates the value that professionals can make in working with clients. Internal clients within an organization, or clients if you're in consulting outside of organizations. It's bringing that expertise in and then saying, "Okay, now let's quantify how we understand the solution. Let's look and come up with a way to be able to say-

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Brian Murrow:

And the solution. Let's look and come up with a way to be able to say, here are some paths forward that we can take to leadership to be able to make decisions and drive success within the organization. And there seems to be a gap there, is where I was saying in one of our earlier conversations, was around, hey, you got people that can program. They can build out the Python, but understanding the models, I mean, understanding the business and being able to put models around the business decisions has been a gap in this space, but it's beginning to be filled. And it's very fulfilling working with our students, because we can now see folks coming into the program that understand business and that then can apply analytics solutions in that decision-making process.

Alfred Hull:

Absolutely. Brian, another thing that I see, another trend happening is with the data science piece. In order to do data science, it's like you've got to have that domain expertise. You also have to have the computer science background, but then also traditional research piece. The thing I see with a lot of data scientists, actually being one, is the domain piece. It seems like the business analytics guys, they have like the business in the back of their mind. They know what's important to that business. And when data scientists actually work with the business analytics folks in the organization, I see great things happening.

Alfred Hull:

But I'll go ahead and pass that back over to Murat, because I think he touched on a lot of important things that I think that the program at GW is going to offer for students looking to get into this space.

Murat Tarimcilar:

Now of course, all these things pose challenges for an academic, right? I mean, there's a lot of material to cover, because you want your students to know about how to code, how to understand the algorithm, know the stochastic modeling or neural networks, and AI, and deep learning and all those things. Then on the other hand, the programs are getting smaller and smaller. You look at your competition. Like everyone is offering 30 credits, 36 credits. Actually there is a program with one of our competitors with only 27 credit program. And we just didn't want to give up from like need and from the kind of the theoretical part of it, we still teach foundations of stochastic modeling. I mean, we still have faculty members who are doing matrix algebra in our classes, but then the beautiful part of it is we were able to manage a 12 credit elective set that almost all electives are taught by people like Brian and Alfred, who are people who did this in the organizations in the corporate world.

Murat Tarimcilar:

For example, one of the changes we did, Brian used to teach a one and a half credit practicum course. Now we combine that course with consultancy and made it semester long class. And I mean, look how fortunate this student is coming to a program, gets about 18 credits of required courses and then goes and spends a semester with Brian about how to take all that knowledge and now implement it in an organization and in a business environment.

Murat Tarimcilar:

And he leads them from making the proposal to the presentation type of process. So at the end, I think we put together a program that's solid, both in the theoretical component and also its practical implications, and bringing the marketplace.

Murat Tarimcilar:

All our 12 credits of electives are taught by adjunct faculty who are currently working as consultants in the marketplace, which makes it a huge difference, of course, for the students. So this is not an abstract program, that when you're done with the program, you're kind of there and say, "Okay, what's next?" They know what's in the marketplace.

Liesl Riddle:

One of the things I find really exciting about the Master of Science in Business Analytics is that business analytics is a global need. And so you really end up having very much a global classroom. Can you talk to me a little bit about, or tell our audience a little bit about, how the need for business analytics is growing around the globe and how that sort of played out, both in terms of the students that you recruit into the program, but also where they might go and work and what kind of roles they play in?

Murat Tarimcilar:

Well, obviously data is global. I mean, it's not like only the Western world is collecting data. There is no decision-making, neither in the corporate world nor in the policymaking side of it, without the data right now. You have to know this everywhere. I mean, and actually our cohort is a good reflection of it. The incoming cohort right now is about 50% Asia, [25% global, 25% local, 00:13:58] and 25% other international for us, like Latin America, Europe. And so it's a great group of students. They learn from each other as well. The challenges in different countries are very different. The way these countries deal with data is very different.

Murat Tarimcilar:

One of the first classes they take with one of our other... Actually right now he's a visiting colleague, but he was an adjunct professor with us, Patrick Hall, he talks about the data ethics and how that data ethics is different in different countries.

Murat Tarimcilar:

Why is it so easy for one country in Asia, for example, without asking its citizens, to kind of take videos of every corner in the city, while you cannot do it in the United States without getting the consent of the population. So all these kind of bring great opportunities, but also huge challenges to policymakers as well.

Murat Tarimcilar:

So the students are exposed to all these discussions. And I think both Alfred and Brian would bring a different perspective on this one, but certainly it's a global challenge. It's a global opportunity for us and our cohorts actually nicely reflect that diversity.

Brian Murrow:

Yeah. What's nice about that, Murat, also, is having that global representation in the classroom. And as we're doing the practicum class, we also try to have a global representation in our client base. So as you mentioned earlier, we have actual clients, actual corporate clients, that our students write proposals to and then develop the solutions for, and then present the final results. And we have banks, one of the largest banks on the planet, based over in Asia. We have global insurance companies, US government agencies. And so we try to really make sure that the work that our students are doing is also global in nature, and it's solving global problems or problems that are ubiquitous, irrespective of which country you may need to be in.

Liesl Riddle:

Well, and that's one of the reasons why we need a STEM certified degree as well. Can you talk a little bit about why that's attractive?

Murat Tarimcilar:

Well it's attractive in for different reasons for different groups. Obviously for international students, it gives you a longer OPT period. That's always an attraction for the students as well. But I mean, look, in the states, we always deal with the lack of STEM education and corporate world and the federal government, or the all kinds of organizations, struggling with bringing in decision makers who are comfortable with analysis side of decision-making. and obviously data analysis is one of them.

Murat Tarimcilar:

So a STEM program makes a huge difference in their job search as well. First of all, the market signal from, if you have a degree from a program like this is, look, my critical thinking skill set is very strong. I can deal with data. I can think in a very structured way, I can model things. I can find solutions to your problems.

Murat Tarimcilar:

And we don't want our program to stop there. We want the program to... Actually something Alfred probably would very nicely relate to is, how does it kind of connect to the strategy of the company? Like that complexity, it shouldn't just stop for writing the program or the algorithm and finding the solution to whatever data I have, but what kind of decision that data is going to impact. That's going to be an important issue, and we try to fill that gap. And obviously Brian's course, consulting and practicum course, is a very important one for us. But also, as I was looking at Alfred's-

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Murat Tarimcilar:

So as I was looking at Alfred's CV or bio, he's been talking about the strategic, the connection of strategy to data analysis, how important that is.

Alfred Hull:

Absolutely. I think you touched on this other piece, too, when you talk about agility. So a lot of the students are perspective of people who would probably want to get into a STEM type of certificate education, are already working professionals. And you start seeing these things pop up, nano degrees, micro degrees, small, quick boot camps and stuff like that. Some people were even dubbing those things fast food education. So it's, how do I get people trained up and coached up on business analytics so that they can go back to the workplace tomorrow to be operationalized?

Murat Tarimcilar:

Yeah. Great point. You know, that brings up the biggest challenge from the academic point of view. Obviously if you leave us, if you leave it to the faculty, we'd say, "Okay, this program should be 56 credits because we have so much to teach them."

Murat Tarimcilar:

The problem is how much you can fit in a fast paced world, our particularly our part-time students cannot say, "Okay, I have these three years that I can go and take this degree."

Murat Tarimcilar:

So on one hand, you want to teach them everything. On the other hand, you want to be able to give them an option of finishing this degree in one year, or if they are like part-time, it can take up to 16 months or maybe 24 months. But you have to really pack everything into it very nicely, very efficiently designed curriculum. And I think we've done that this time. And it's only going to be proven after the students go through the curriculum and go to the workplace and see how successful they are.

Murat Tarimcilar:

The unfortunate thing about the academic performance measurement is it is not the grade they get from the program, but what kind of impact they have after they graduate. And you won't know this for the next five to 10 years maybe, but we are quite confident about the new one, the new program, that they will be sought after people in their organizations for finding solutions to business problems by using data and decision models.

Brian Murrow:

And Murat, just kind of double clicking on that for a minute here, I think about the practicum class, because that's kind of at the end of the program where you bring all the pieces together. And what we're really trying to do is to say, "Well, now you have the tools. We may not be able to do a six year program where we teach everything under the sun, but we give the tools that you need as you go out into your career."

Brian Murrow:

Because analytics and business analytics in particular is learning every single day. There's new analytic techniques coming out. There's new business problems coming out or operational business problems or strategic business problems. Technology is advancing obviously every day. Storage prices are going down every day. So, it's a journey that our objective is to provide the tools and the means of looking at your curiosity and then being able to bring the tools to the business problems together and solve these problems.

Liesl Riddle:

Yeah, if ever there was a case for lifelong learning, it's about business analytics. And so that brings me to my next set of questions. I mean, we've talked a lot here about the MS in business analytics degree, but GW School of Business also offers graduate certificates, four courses, 12 credit hours. These are credit bearing graduate certificates that you can either take by themselves, so like for lifelong learning to go back and kind of learn some skills but yet get a real credential for it, or to combine it with some of our degree programs like our MBA or our Master's in Management. We even now have a Master's of Interdisciplinary Business studies where you can actually take any two of our graduate certificates. We now have 27 graduate certificates. And combine two of them with a couple of integrative elective courses and do an Interdisciplinary Business Studies Degree. So we have two, actually, that are within sort of the business analytics realm, one is Analytics for Managers and the other is Business Analytics. So how are these different?

Murat Tarimcilar:

Well, that also comes because we couldn't find a solution of having one program that's going to satisfy every need, so we decided that if you want to be a certificate in business analytics, you need to know about Python, you need to know about R, you need to know about the foundations of stochastic modeling. But for an MBA student, this could be kind of heavy in terms of its quantitative requirements and also in terms of coding requirements.

Murat Tarimcilar:

So we said, "Look, if you're interested in a certificate in business analytics, then you should be comfortable with this mathematical requirements. You should be comfortable with this coding requirements." So we actually give them Python course before they take the others. And they take the courses with the MSBA students. It's challenging. It's a rigorous program, but quite a popular one right now.

Murat Tarimcilar:

But also what we heard from our MBA students and some of the students coming from outside is, "Look, I'm not necessarily going to go and code or write algorithms, but I really want to understand, what does analytics do and how can I use analytics in my corporation or in my organization?"

Murat Tarimcilar:

For them, we designed another 12 credit hour, what we call the Graduate Certificate for Analytics for Managers. So it's a lot lighter in terms of content in terms of its mathematical foundations, but a lot more applied. What the students need to take is the generic data analysis and decision-making class that's required in the MBA curriculum, but then take one data mining for managers and decision modeling for managers. And then we let them choose from three credits of electives from wide variety of electives like visualization, like social network analytics, like big data analytics. That doesn't require coding. So it still gives them quite a bit of flexibility, actually, but it's certainly a different focus. One of them is going to go and do analytics and analysis. The other one is going to be in the managerial position trying to deal with the data scientists.

Liesl Riddle:

So I'm hoping that we have an audience and particularly of prospective students that might be saying that these programs sound very attractive to them. But I'm sure a question on their mind is, "Well, what kind of background do you have to have to apply to these different programs?"

Liesl Riddle:

We've talked about lots of different things here. We've talked about Analytics for Managers is probably a very different input profile then someone that's going to do just the Graduate Certificate in Business Analytics or the full blown master's degree. What are you seeing in terms of the applicant profile differences in each one of these programs?

Murat Tarimcilar:

Well, the applicants for the MSBA program comes from a stronger kind of science, let me say, a STEM background. Now that's the majority of it. That doesn't mean they have to have this. Because if you're interested in this, and if you have, look, I have good data skills. We do have some bootcamps or we do have some suggestions that they can take online before they join the program. Actually, there used to be some requirements that you had to have advanced calculus before you come in. We removed all those requirements. If you don't think your kind of quantitative background is not that strong, then we expect you to take some online courses to prepare yourself, maybe learn a little about Python and maybe learn a little about the kind of statistical software such as R, so that when you come in, we do have a class in Python that they have to take actually. So they learn it here, but it would be a lot easier if you had some exposure.

Murat Tarimcilar:

In the GCAM, the Graduate Certificate for Analytics for Managers, we have no requirements. The only requirement is when they take their introductory data analysis and decision-making course in MBA, all we ask that they would get B plus and higher in that course, and then you ready. Because we don't really expect any coding languages or there's no heavy math in any of those courses.

Liesl Riddle:

Well, I imagine the Analytics for Managers would be also really popular with our new Masters in Management since that's a program really sort of designed for the students that are coming either right out of undergrad, often from STEM backgrounds or international affairs backgrounds or liberal arts backgrounds, but they need that one extra year to get their basic business fundamentals and skills under their belt, and they're required to choose a certificate.

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Liesl Riddle:

... the basic business fundamentals and skills under their belt, and they're required to choose a certificate. I imagine that will be also very attractive for that population, not just the MBAs.

Murat Tarimcilar:

That was the intention at the beginning, to make it a little user-friendly, let's say.

Liesl Riddle:

Yeah.

Murat Tarimcilar:

Because there was a lot of... people were intimidated with the name of analytics and when they saw our requirements saying, "Well, make sure you have calculus, or you have some exposure to coding before you come in." But I think the G chem auction is very student friendly. It doesn't require any prior preparation for that. The courses are quite appliable to decision modeling and the machine learning or the data mining course right now, so it's a very much of an open alternative for people to dip their toes to analytics, see how they like it.

Murat Tarimcilar:

Obviously, it has management. It's for more management-focused, but they may decide that after they get into this, they may say, "Hey, I think I'm ready to go and get a master's degree in business analytics. It's not as bad as I thought it would be." It's not like people just constantly doing differential equations or integrations, but they are actually doing some practical stuff, there. They are getting the data and finding solutions for businesses.

Brian Murrow:

And along those lines, I would just highlight that as I watch the teams in the practicum program... so we usually divide up into teams of five students for each project in the practicum class. And what I love to see is the diverse thinking and backgrounds coming together, and by very nature of the self-selection, if you will, those folks are expressing interest in topics. You will have folks that are a little more quantitative on a given team of five, maybe two or three of them, and folks that are a little bit more business savvy, maybe two or three of those together.

Brian Murrow:

And it's so satisfying watching them come together where the more business savvy, less quantitative folks may feel like, "Hey, what am I contributing?" And they really realize that coming together... which is exactly like real life projects in the professional world, where those that aren't as technical will be leaning on the more technically inclined team members and vice versa. So just, I would just put a plug in for the certificate programs, but also, if you feel as though that you know you want to accelerate in business analytics, if you're not as technical from the very beginning, that, as Murat said, taking a couple primers and then diving right into the master's program.

Liesl Riddle:

So, Alfred you've had experience working in business analytics now across many different industry sectors, and can you talk to us a little bit about what has been similar or different, or what do you see as similar or different, in the world of business analytics and, say, a public sector job versus a private sector job, or is there really a difference?

Alfred Hull:

That is a good question, and I started off earlier saying something about like this whole either concept of business analytics. Believe it or not, the methodology in itself actually stays the same. The place that you do it changes, but I think the biggest problem that I see with business analytics or organizations getting started in business analytics, both in a private and a public sector, is framing the business problem.

Alfred Hull:

Even if they utilize the cross industry standard for data mining or some other methodology, the Venn diagram or swim lane, their capability maturity, or how they transfer information and operationalize it, I see that they skip that step, and even Gardner mentioned that 80% of data science projects are failing, right? And a lot of them fail because people get a piece of data, they rush over to step four, and they try to operationalize that information without context, and they deploy it, and it collapses.

Alfred Hull:

I think the business people, what they do is help tie that back to a business use case as to, why aren't we doing this to begin with? Are we thinking about this in the right way before we start? Let's tee up the project in a right way, and then follow the process, and then we'll have a good product at the end. So I don't think that business analytics changes. I just think that it's the same, it's just applied in different places, and people are getting used to it. I mean, people are waking up to this.

Liesl Riddle:

You have any thoughts to add to that, Brian?

Brian Murrow:

So I think Alfred's spot on. It's making sure that there's business acumen, and one of the things I like to do with the students, as well as in my projects and other professional life, is making sure that we're going into it with our business hypothesis in mind. What are specifically we trying to do? And as a business professional, and maybe you're a public policy expert, and you're trying to further a policy, maybe you're a financial services expert, maybe you're a counter fraud expert. What are you trying to achieve? What is that hypothesis? And now, what data do I need to prove or disprove that hypothesis, and then to be able to operationalize the decision science solution?

Liesl Riddle:

Well, that's great. We could talk here for a long time about this. There's so much going on in the field of business analytics. There has been so much innovation. I'm so grateful to our faculty and the decision sciences department. They've spent so much time really working hard about thinking about how to really bring industry advances and academic advances together in a meaningful and useful way for different populations of students. And so, I'm really, really very proud. That's why we put it on GWS Be Proud to feature this particular set of programs. Grateful to you, our industry advisory board members. Without your input, we couldn't have the great programs that we do. Thank you all for joining me in the studio today.

Murat Tarimcilar:

Thank you.

Alfred Hull:

Thank you. (silence)

Speaker 1:

That's all for this episode. Thanks for listening today. Shout-out for music credit to Plantain Papi, also known as Michael Ferrier, GW class of 2020. See you next time to learn more ways we are GWS Be Proud. (silence)

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