[Michele] I am sitting with Carrie Fitzgerald. Carrie please introduce yourself to the audience let them know your title department and campus

[Carrie] Alright well my name is Carrie Fitzgerald i am a professor in the engineering computer science and physical sciences department I've been at Montgomery college for oh my goodness well since 2009 and i normally teach on the Rockville campus

[Michele] Thank you for joining us this afternoon in our personal pedagogical podcast i really appreciate it and i'm really looking forward to talking to you so tell me a little bit about your educational and your professional background and the experiences that you've had

[Carrie] Okay well as an undergraduate I was a physics major and I kind of knew that i wanted to do something in astronomy and it's pretty common for astronomers to be physics majors and so I went on to grad school with the intention of doing observational astronomy like going to telescopes taking data and I did that for a few years but had this random chance event where I visited our nuclear lab and I saw what research they were doing on this in this lab for nuclear astrophysics and I was hooked. I was like this is what I want to do and so I completed my masters in the observational astronomy and then I switched to the nuclear physics group and i did research into nuclear reactions that take place in a certain type of star so we're measuring in the laboratory these nuclear reactions at an accelerator or figuring out how long does you know how fast these reactions happen and it allows us to say something about the, the evolution of the stars that we're in, and so it was a great experience and after that I was offered a NRC associate ship with national research…research academies in Washington DC and it was at the naval research laboratory and I did more nuclear work there but primarily with the detection technologies. So developing detector technologies for gamma rays which come from the nuclei of elements um from space and so we worked on developing a detector system there and from there…I you know I always wanted to teach but I was still kind of getting my footing and I took a job doing more nuclear physics and detection work and then finally it all worked out when I was offered a position at Montgomery college and uh could finally start teaching physics and astronomy which is um been the perfect fit for me.

[Michele] so you said so you always wanted to be a teacher growing up

[Carrie] Yeah I..I did um I always kind of knew like I wanted to teach and you know even as an undergrad and into uh graduate school i did a lot of tutoring a lot of teaching and it was where i felt happiest um for me i have this thing like when i find something that I'm really, really excited about i have to share it and so a lot of it is less like oh my goodness i have to tell you about this thing because it's so exciting i think you'll love it too and so for me teaching is a little bit hardwired and that i can't sometimes help myself from talking about the thing sometimes too much I maybe people stop asking me about the stars because they know i will go on and on about it but yeah I I've kind of always known that that was the, the right path for me

[Michele] I think that is awesome it's so awesome when you early in your life figure out what you're destined to do and you kind of align yourself that way and so i see you as a little kid and you may not have been this way with your little dolls trying to teach them

[Carrie] oh yeah so I did like we did play school a lot in the neighborhood and it was just you know like making up little lesson plans and just always kind of getting into something and then once I learned how to do it I felt like the urge to tell other people like how to do a thing um and two you know for volunteer stuff you know I've been a docent um I was a docent at air and space museum I'm a docent now at National Cathedral i just you know when i find something interesting i just want to talk about it

[Michele] Um and give my ignorance but what is a docent?

[Carrie] Oh like a museum guide it's like a tour guide okay yeah, yeah so it's just kind of like oh you know the first time I went to the air and space museum I was blown away and then my next thought was I wanna I wanna volunteer here and give tours and so I was like I did that for a while and the same thing I went to um for the first time after living in dc for years and years Washington National Cathedral with the gothic architecture and I was like this place is amazing I need to give tours here so I started giving um tours on gothic architecture so it's kind of like a genetic I think predisposition to like I have to share with you what I know or else I will lose my mind I can't keep it in

[Michele] So how do you think that your experiences your background and your perspective how has that shaped your views on classroom teaching and learning?

[Carrie] Well you know I come from a pretty um kind of a humble background and I feel like the odds were against me being where I am because I was the first in my family to go to college and so nobody really expected that much less like to go to grad school and then you know to keep you know keep going in this academic track and so I think perhaps it helps with you know understanding everybody has so many challenges even if you can't see them um directly you know like people have a lot to get through and I've always appreciated the teachers that have treated me with kindness and encouragement and you know haven't judged me um because of my background when they could have so as far as how I apply that I…I guess i feel like i just try to…to be kind and know that people have things going on that I can't begin to imagine and um just to…to…to help them succeed

[Michele] So I want to ask you um because this is a good segue into this what do you think are the biggest challenges then in helping students succeed?

[Carrie] Yeah I think for, for us a lot of the challenges we have especially at a community college is just competition with the students time and energies um you know so many of our students work so many of our students have family responsibilities and then to ask them to, to devote all of their mental energies to our classes um it's, it's difficult when they have a lot going on so i

think it's a big challenge to um get them in a place where they're, they're able to spend the time that they need to spend on their academics-

[Michele] Are there any strategies that you have to get students hooked so that they are able to prioritize your class with all of the stuff that is going on and i know your class is interesting because I've seen it.

[Carrie] Yeah it's, it's hard right because you know they have a lot going on and I, I usually will say that to them I know you have a lot going on but I'm asking you to devote this many hours per week to my, my class and I try to be as flexible and understanding as possible when students do have issues as far as trying to keep them engaged um I do try to have a really good attitude uh with, with teaching and you know some of my favorite teachers were the teachers that i could tell liked teaching like you can always tell when somebody doesn't like what they're doing and they're just there but if you really feel the person likes what they're doing and they're happy to see you um it makes a difference so you know I start out every single class I thank them for being there and i tell them i am delighted to see you today and it's true I am really honestly sincerely delighted to see them and happy to see them and excited to get to talk to them about astronomy and so I'm hoping like if they can see I'm really here enjoying this loving this, that it will maybe help them to prioritize um their time so that you know they can get their work done and and succeed

[Michele] So you mentioned something very good which is um that people know if you really want to be there if you really want to be a teacher can you think of any teachers that you may have had you could have been school age you could be in high school or college that really influenced you and your teaching style and the way you think about school?

[Carrie] Yeah you know one that comes to mind is my high school physics teacher and it was just serendipity that I got put into this class I wasn't planning to take physics in high school and so I did kind of change my trajectory of what I plan to do um I liked astronomy as like a kid and like looking at the stars but I didn't make the connection between physics and astronomy and I had this high school teacher Mrs Maynes who like really even though I wasn't very good at physics at the time she really helped me out and I never got the sense that I couldn't do it and she seemed to really like talking about stuff so I'd ask her off the wall questions about oh you know this is I read this thing about special relativity the speed of light can we talk about this and she just seemed delighted to want to talk about it and so and I ended up continuing in physics where maybe I may have you know never have made the connection um that oh yeah physics is astronomy and I can you know study this and get a job in this if it wasn't for her.

[Michele] Did you feel any pressure as a woman in STEM or a young girl in STEM?

[Carrie] No, it's weird I…looking back I definitely see times where I was probably not treated as well as I should have been treated be honest I was so ignorant of this of, of like being discriminated against as a female that I honestly I wasn't paying attention to it and I think this is a double-edged sword for, for women for students of color who are in the sciences because on

one hand if you don't see it, it won't bother you but on the other hand it still can affect your trajectory and I'm not sure what the solution is other than you know to, to keep moving forward generation by generation, um that would just get better at this um but it is I mean it could get uncomfortable. I was a lot of times the only female in the class or you know all of my mentors were men I never had um outside of Mrs Mayne's in my high school physics class i=I never had a female instructor in college or in grad school um so it does I'm sure it affected me but I'm not..not exactly sure how at this point I still look back and I see things that oh you know what that person really wasn't very good to me but at the time I didn't I didn't realize it and on one hand I'm glad I didn't because it might have been more upsetting than um it was. On the other hand it's just like oh things need to change

[Michele] Right yeah right. Are there any classroom activities or practices that you strongly believe in and if so what are they?

[Carrie] Well i really think students learn best when they're able to, to kind of teach it themselves so I'm a big proponent of okay first i have to give them the the knowledge in some some form and then try to lead them through it with like some guided activities so they can't do you know they're not they can't do independent research but they can work through guided activities and then if you can get them to explain stuff to their neighbor that's even better so it's kind of like this okay this is what this this is the basics let's like guide you through something and now let's see if you can tell it to somebody else um and that seems to work mostly.

[Michele] Yeah I agree with that the…the strongest way to learn something is to be able to internalize it enough to teach it to someone else i agree with you there. If there if you could go back in time is there anything that you would have done differently in your classroom teaching knowing what you know now as a sage instructor

[Carrie] I feel like I'm still learning uh but yeah uh I'm grateful for the experiences I've had in the and you know the opportunity to grow as an instructor I think at first I didn't know anything about like say what a good example medical technician it wasn't until I came to Montgomery College and was here a few years and you know learned about the concept of metacognition and how we can get students to use it to improve their learning and so I think you know earlier on it might have been useful to have those sorts of activities um from the very beginning um I also wish I…I…I don't know so keeping things simple is one thing I've learned over the years. I have tried all sorts of crazy ideas uh you probably know from working with me I have talked with you about many crazy ideas and teaching and you know on one hand i think it's really great that I have tried all sorts of different things but now like knowing what I know I think if I knew everything I could have kept things much more simple all along so I sometimes feel for my early students who had to um endure some unusual assignments and more unusual ways of..of assessment so keeping things simple is one thing I've learned

[Michele] So is there anything that i haven't asked you yet that you would like for me to know about your philosophy of teaching and learning and if so, what would that be?

[Carrie] Well I,I do have a philosophy of teaching and I know it's probably not a very popular one but I will I will share it with you um I feel truly that I am responsible for my students learning. Like it the…the…the buck rests here ,essentially it stops here with me, because I'm the one who is, is being paid to teach you and i always tell my students that I I take this responsibility seriously i feel responsible but the same time I can't I'm not psychic which means I can't read their minds and know when they need help so I asked of them please tell me when you don't understand something and I always say there is no shame in under not understanding I don't expect you to understand anything in this class , um and if you don't understand it don't blame yourself blame me. I'm the one who's getting paid to,to get you to understand it so just tell me and I will explain it in as many different ways as it takes for you to get it um I I do feel responsible I know maybe that's not a super popular thing to be um because you know we want students to be responsible too, but i think it's...it's mutual that we have this shared responsibility student and teacher with the bulk of that responsibility on the teacher and then the students kind of reaching out and doing their part too.

[Michele] Thank you so much for interviewing with me this afternoon, Carrie I Really, Really appreciate it.

[Carrie] You are very welcome and thank you for all the years of help and service that you've given me as an instructional designer it's really a gift to have someone like you to go to when, when i need help with my class that i can send you an email and, and get help so thank you. I truly appreciate you

[Michele] It is such a pleasure to work with you