

Ep139 BS-MD Program

Neda Frayha: [00:00:00] Hello and welcome to the OSA Insider, a podcast about medical student life and the journey to becoming a physician. I'm your producer and host, Dr. Neda Frayha. I'm an internist and a member of the Office of Student Affairs at the University of Maryland School of Medicine. A really exciting new program at the University of Maryland is a combined bachelor's of science and MD program in which undergraduates at the University of Maryland College Park can embark on a path that takes them directly to the University of Maryland School of Medicine with a lot of dedicated mentorship along the way from people on both campuses.

It's an integrated program with lots of support structures built in. It was originally Dean Gladwin's idea, and medical school leaders like Dr. Donna Parker, Dr. Sandra Quezada, and Dr. Katherine Robinette have been deeply involved in shaping the program from the very beginning. In this episode, I get to interview the two [00:01:00] directors of the BS/MD program, Dr.

Ian White at the University of Maryland College Park, and Dr. Nitin Seam at the University of Maryland School of Medicine. Dr. White got his PhD from Stanford University, and his current work specializes in bioengineering. Among many other leadership roles, he is the BS/MD program director at College Park, and he has been deeply involved with this program since its inception as well.

Dr. Nitin Seam is a pulmonary critical care physician, assistant dean for innovation and educational technologies. He's the vice chair for education in the Division of Pulmonary, Critical Care, and Sleep Medicine, and he's a professor of medicine at the University of Maryland School of Medicine. He's also the co-director of the University of Maryland BS/MD program, and he's the one on the School of Medicine's campus.

Together, they'll share the BS/MD program's origin story, goals, logistics, and what's excited them the most about this connection between the two [00:02:00] University of Maryland campuses, and also the students that they're recruiting and getting to work with. You'll hear Dr. White's voice first in response to my first question, and then you'll hear Dr.

Seam's voice a little bit later in response to the second question. All right, so let's start at the beginning. What is the BS/MD program at the University of Maryland?

Ian White: Yeah. So BS/MD program, this is a program created to recruit the most extraordinary students in math, computer science, and engineering who wanna practice medicine into a cohort and nurture them, encourage them, uh, through unique opportunities to contribute to their community, to, uh, get exposure to clinical experiences, to get involved in research, and really to prepare them for excelling in medical school.

[00:03:00] Um, and of course, bring them into the family and put them on a path towards University of Maryland School of Medicine.

Neda Frayha: Please tell us a little bit about yourselves and how each of you came to be leaders of this particular combined program.

Ian White: So, uh, I've been a professor in bioengineering at University of Maryland for almost 20 years or so.

Um, and so I've certainly-- my academic career has really, uh, emphasized both engineering as well as thinking about translation for medical applications. Um, and a couple years or so ago when, uh, the two universities got together and decided to explore the idea for this program, uh, I got asked to be on the committee to help define what the program would look like.

Um, and it got me really excited about the idea. Um, so, uh, after the committee had wrapped up and made [00:04:00] its recommendation, uh, there was a need for, uh, College Park representation on the leadership team, and, uh, I was excited about the idea, so I, I quickly volunteered to, to serve as, as director on the College Park side.

Nitin Seam: Yeah. And, and, and for me, I, uh, started at the University of Maryland just last August, and I've always, uh, been very excited about the education and training of our physicians and future physicians. So, uh, my leadership roles have been related to education for our fellows at a pulmonary critical care level, and then also our students.

But I hadn't had, um, experience with such a unique program with, with college students. So when I was approached about working with Dr. White, I was really excited to do so 'cause, you know, my background and prior work relates to innovations and training, uh, and also helping developing programs for training physician scientists and, and in-innovating.

[00:05:00] So the idea was incredibly exciting to me, uh, and I just couldn't, uh, turn down the opportunity to build it with Dr. White.

Neda Frayha: You've touched on this a little bit, but can we talk about the origin story of the BS/MD program? Like, how-- who came up with the first idea that let's have a pathway that goes straight from undergrad to medical school?

Ian White: Sure, yeah. This-- the initial push came from Dean Gladwin at the School of Medicine. Um, this was something he cared a lot about, was clearly very passionate about. And so he and Dean Graham in the School of Engineering had some initial conversations of let's, let's make this happen. Um, and so then that, uh, began kind of a delegation process down, uh, through the faculty in both College Park and in Baltimore.

Um, and ultimately, Dean Graham said, "Okay, let's assemble an exploratory committee and figure out how we should do [00:06:00] this." A committee was put together. Uh, we spent probably about six months, uh, debating different ways to go about doing this. And at, around the end of twenty twenty-four, uh, that's when the committee documented its set of recommendations on what the program should generally look like.

Um, and then Dr. Seaman and I have had the, the opportunity to really write out the specifics, the, the specifics of what the program would look like. And, uh, of course, we continue to work with faculty, uh, on the medical school side to make sure that what we're doing makes sense, and we continue to communicate with our deans to make sure that what we're doing makes sense.

But

yeah, that put us kind of into the first half of twenty twenty-five, and then that's when we recruited in our first cohort, was that, uh, starting in summer twenty twenty-five

Neda Frayha: And so now as we're recording in June 2026, that first cohort just completed their first year of [00:07:00] undergraduate studies at the University of Maryland College Park.

Ian White: That's right. Exactly. So they finished their first year of the BS/MD program, but they finished their second year of college. And we're really excited about how they've done and, and our interactions with them.

Neda Frayha: And we're going to be interviewing one of them for a future episode, so we'll get to hear the student perspective on this program.

Um, how many students are currently enrolled in that first cohort?

Ian White: Yeah, so cohort one has seven students. Um, that's gonna be our steady state, uh, size, uh, in-- through the initial years of the program at least. Um, and I think it was-- I think that size really led to a great community of students. Um, fewer would not have generated the same kind of, of support that they had for each other, and I think if we allow it to get too big too quick, then, uh, we run some risk of also not having that same feel of the [00:08:00] community.

So I think it was really a great size, and those seven students are just tremendous students, tremendous people, and tremendous future physicians as well.

Neda Frayha: What would you say are the program's primary goals that go beyond providing an undergraduate education and then an undergraduate medical education?

Ian White: Yeah. Uh, there's two angles that, uh, that I can think about the goals. So just purely from an institutional perspective, we would like to see these extraordinary students that we have in College Park, we'd like to see them go to the School of Medicine in Baltimore. Um, so this program gives us an opportunity to, uh, bring them into a community, help them get all the experiences they need to excel at medical school, and, yeah, make them feel really part of a, of a University of Maryland [00:09:00] family, and get them to go to the School of Medicine in Baltimore.

I think that's-- Like I said, that's the institutional perspective. Thinking more about from the student perspective, um, uh, we're talking about students who

are in very challenging majors, who have, uh, more credit requirements than the typical student, and then on top of that, they're adding pre-med requirements to that. Um They also, of course, have many interests, many other things they excel at, so these are particularly taxed students. This program helps us focus all that energy towards going to the School of Medicine while being trained in computer science, engineering, and math.

So we can give them better access to clinical experiences, better access to research experiences, and that cohort-based support [00:10:00] helps these students who are not in majors where there's a lot of pre-meds, so kind of interconnects them in a better way to give them a support system, gives them additional access to the admissions faculty at the University of Maryland School

of Medicine, really puts them on a path to help them be successful in getting into med school and excelling in med school.

Nitin Seam: And then the other thing is, you know, going back to when we were undergraduate students, uh, we didn't have that sort of level of support that Dr. White's describing. And then we're really developing a structure where we're also providing them med student mentors who have similar backgrounds who they can talk to about their common stresses and problems, and pairing them with mentors who have the similar training backgrounds for clinical and research, uh, at, at the School of Medicine so they can really be efficient in finding their passions, finding people who understand and can maximize all [00:11:00] their interests and expertise, and really grow at a very early age as opposed to trying to find disparate, you know, uh, clinical and research experiences like we did, at least I did, when I was going through that time in my training.

Neda Frayha: Let's stay sort of broad for another moment and talk about the three pillars of the program at the undergraduate level. These are service activity, clinical experience, and research experience. Can you share some examples of how the undergraduate students are going to gain exposure to each of these three areas, and why that's so important leading into medical school?

Ian White: Sure. I wanna talk quickly about service and research, and then I think maybe the most special part of this program may be the clinical access, and I'd like to ask Dr. Seam to talk about that. Um, in terms of service, of course, medical schools want to see applicants who demonstrate [00:12:00] empathy for their community, especially those in need.

Um, that's a sign that they're gonna be a, a good clinician. Um, so in the first year of the program, uh, we had the cohort, uh, engage as a cohort in a service experience. So, uh, this last year, uh, the students got involved with a program, uh, that does after school time with unhoused children. Um, so on a weekly basis, our students would go to shelters and just provide some, uh, some adult care, uh, some playtime, some STEM activities, things like that.

Um, and in terms of the research aspect, also very important to demonstrate, uh, research acumen on the way to medical school. So we can work with our students to connect them with the, the type of research experiences that will have relevant technical components, relevant clinical components, um, [00:13:00] and really give them what they need, uh, to, you know, have their application and their experiences the way it should be.

But again, I really wanna emphasize the value of those clinical experiences that, that Dr. Seam has been leading.

Nitin Seam: Yeah. So thanks, Dr. White. So I think one of the things is, again, is getting-- you know, leveraging their unique skills and also their interests as this cohort. And we're-- You know, because we have a, a seven, uh, student cohort, we're able to curate it for them.

And so, um, what we've tried to do is so we sent out a survey to faculty and asked those who would be interesting in-- interested in mentoring, and also specifically for, uh, clinical mentors who have similar backgrounds in engineering, math, computer science. And so we received a great response. And then based on kind of what our cohort now, it's obviously early in their career, but what they're thinking about they'd like to get exposures to, we've been partnering them with some of those motivated mentors who really can understand them.

So whether it's in an [00:14:00] inpatient setting like emergency medicine or, or critical care or outpatient clinics, um, we've been really trying to set that up to, to light that spark for them clinically, and in a perfect world, also relate to where they're going to do research or, or innovation. So I think that that's the real opportunity that, again, is, is pretty unique for this group.

Neda Frayha: I love the idea of that mentorship from both faculty and also medical students for an undergrad. That would be such a benefit to any undergrad considering a f- career in medicine.

Nitin Seam: Yeah. Yeah

Neda Frayha: I'd love to now get a little bit granular and talk about some of the logistics. So when can a student apply to be a part of this program?

Ian White: Yeah. So, uh, the program is designed for students in their second, third, and fourth years of undergraduate. So at the end of the first year of their undergraduate time, uh, in College Park, uh, then they would apply to join the program. So, uh, in fact, [00:15:00] we're right, uh, near the deadline to receive our cohort two applications.

And so we'll review those over the summer, do interviews, and then bring them in, uh, at the end of the summer into the program.

Neda Frayha: Do they have to major in any specific discipline in order to be a part of this program?

Ian White: Yeah. In fact, this, this program, um, going back to, to Dean Gladwin's vision, uh, he really wants to see extraordinary students coming to the med school who are well-trained in engineering, data science, computer science, uh, things like that, um, because that's becoming ever more pervasive in medical practice.

And so Dean Gladwin wants to see cohorts like that coming to the med school and hopefully staying in Baltimore. Um, so yeah, we, we accept applications from students who are majoring in engineering, math, and computer [00:16:00] science.

Nitin Seam: Yeah. And just to, to piggyback on what, what Dr. White said, you know, even at, at graduation, uh, Dr.

Gladwin's always talking about what's the future of medicine gonna look like. And I think that there's so much, we're in a time of technological innovation, to have people with these backgrounds leading that innovation with the, the backgrounds in engineering, math, and computer science, and coupling that with the medical training, and then being able to partner with, again, College Park engineering experts like Dr.

White and physicians especially who have some background in innovation and kinda understand, uh, what, what they bring to the table, is really where this is a unique group who can help lead that innovation in the future.

Neda Frayha: So if an undergraduate student wants to go to medical school one day, but wants to major in the arts or the humanities, fantastic, and they can still go to medical school, but this program is not the right program for them.

Nitin Seam: Yep, that's right.

Neda Frayha: When a student in one of these cohorts as [00:17:00] part of the program is going through their undergraduate education, do they apply to medical school just like anyone else? Is that timing the same?

Nitin Seam: So they apply at the end of that first year, as Dr. White said, to be part of the cohort, right? And that cohort is guaranteed an interview and is, you know, likely to be joining, uh, us at the University of Maryland.

Um, uh, they have to obviously meet, uh, GPA, MCAT standards, and interview standards that the University of Medi- uh, Maryland Medical School has for, for, for all students. Uh- But, you know, obviously we're highly invested in that cohort. Um, but then they, uh, will be applying, uh, subsequent cohorts now will be applying early decision first, uh, after their third year of, of college to Maryland, and they'll get that decision in a timely manner

Neda Frayha: Is there an opportunity at any point or a room in the curriculum for students to ever take a [00:18:00] gap year if they should want?

And if so, when would be the recommended timeframe?

Ian White: The, the gap year is a possibility. Um, generally it would be something that the student would wanna negotiate with the med school admissions team. The great part about-- One of the many great parts about the program is that these students will have regular interactions with the admissions faculty at the School of Medicine.

Um, so if they have a unique circumstance and there's an experience out there that's just too good to pass up, then they can have direct conversations with the admissions faculty about whether that's the right thing to do. I think that one of the true advantages of the program is, I think we're living in a day now where there's a gap year arms race when it comes to- Yes

medical school. Enough students are taking gap years that that means everybody has to take a gap year to be competitive with everybody else who's taking gap years.

Neda Frayha: Yes.

Ian White: Um, but students in the BS/MD [00:19:00] program can know that they did everything they needed to do to have the perfect application for University of Maryland School of Medicine.

And so they don't need to feel pressure to structure their lives around a gap year to catch up with everybody else. I think that's, that's one of the great things. But the-- on the flip side of that, because they've got this relationship with the admissions team, let's say there's some great overseas opportunity they have, then they can work that out with the admissions team and not have to pass up such an opportunity.

Neda Frayha: What if a student who is part of the program decides partway through their undergraduate studies that maybe they don't want to go to medical school after all? What options are open to that student?

Ian White: Uh, it's certainly a possibility, of course, and in designing the program, we certainly knew that, that that could happen.

If a student decides at some point in the program that either maybe the University of [00:20:00] Maryland School of Medicine is not the right place for them, or even that medical school is not the right place for them, then we're open to having the honest conversations with the student and just help them transition out of that pathway and into a pathway that makes the, the most sense for their career.

Um, we certainly will-- we hope to have 100% retention through the program, but yeah, we also-- we, we understand, uh, that we're dealing with extraordinary minds here who have many, many opportunities in front of them, and it could certainly happen that, uh, that one of our students decides that there's a better opportunity w- for them, and we would be happy to see them be successful where- wherever they go.

But yeah, we do understand that, um We, we will potentially have some students choose a different path, and that's okay

Neda Frayha: You're not like, "No, you must continue. You must [00:21:00] graduate from medical school at all costs."

Ian White: No. We, uh ... It's such a great group of students, it really is. We, we always enjoy talking to them.

We're, uh, I mean, we're inspired by them. These, these students are just incredible students, and, uh, I, I, I really should emphasize that to get into the program takes more than just being a good student. We're really reading their applications to see that they are good people. Um, and yeah, we just love being around them, and if they decide that there's a different course that's better for their lives, we're gonna be happy to see them find whoever it is that they are.

Neda Frayha: On that exact note, thinking about what awesome people are in the program already, who do you think of as being kind of an ideal candidate for this program?

Ian White: Sure. So thinking about how we select the students, um, number one, we wanna see [00:22:00] great academic success in that first year of undergraduate, and we can look at the courses they took, the grades they got, and we also get recommendations from their instructors.

So that's number one. We wanna see that they're gonna be very, very successful in their academic coursework. We also wanna see that they have a mature outlook on how they are approaching their life as a student in their major and as a potential researcher in their major, so, um, we give them a prompt for a statement that, that, uh, gives them an opportunity to tell us why they love what they study and what they wanna do with it.

Um, we're also looking for somebody who we know is committed to a career in medicine. Um, and of course, they are 18, 19 years old, so it's certainly hard to, to know exactly, but when we look at these applications, uh, and we [00:23:00] hear the reasoning behind why these students wanna study medicine and we look at what they've done so far in terms of getting clinical experiences or time with patients, things like that, then we can get a good idea of who really is, uh, going to continue to push their way through this and go to medical school.

And finally, yeah, we really are looking for quality of, of a person. Um, so we look for, we ask them about their, uh, service experiences and we ask them to reflect on what impact they are having on the world and what impact the world is having on them. And so we're gonna be selecting students who we've seen a record of doing what they can in whatever power they have to make the world around them a better place.

Um- And it's been amazing to see what teenagers are doing these days to, to make the world a better [00:24:00] place, and they've-- this cohort in particular has, has really impressed us with that.

Nitin Seam: Yeah. Uh, and, and just one more thing to add, I think Dr. White hit on, on all the high, on the high notes there. The only thing is obviously, you know, the cohorts will be early decision to Maryland, so they should be, you know, the people who wanna put down roots, uh, uh, in this area.

And then I think, as you said, they're, they're such empathic human beings. By putting down those roots, you can really make a big impact in, in the community, and you can see the passion in them

Neda Frayha: What excites you the most about this program?

Nitin Seam: Ooh, uh, where do I begin? Uh, I, I think, you know, like, the, the thing that's really exciting and, you know, you can see, you know, Dean Gladwin's initial vision, uh, as we talked to the, uh, about, uh, as we talked about earlier, it's really the opportunity to collaborate, right?

When we talk about team science and we talk about the future of medicine, big breakthroughs are, are made by teams with [00:25:00] expertise in different areas. You know, they partner, they work well to innovate, and that's where the opportunity here to bring engineers, computer scientists, and mathematicians working with physicians to solve big problems of healthcare for the future.

But we're training the next generation who are gonna have those combined backgrounds. That's incredibly exciting and, and we are kind of, uh, having the opportunity to build it intentionally. And I think that then that, that opportunity that I, I had mentioned before, partnering them with several levels of mentors, so a med student mentor who's from a similar background who can help them 'cause they were just a couple years ago going through the same challenges in how they organize their undergraduate coursework or prepare for MCATs or all that stress.

And then physician mentors who are actually established in their career and may, may give a s- specific spark of, "Okay, how does this, my engineering study relate to how I can impact medicine?" [00:26:00] And so, um, again, having similar backgrounds. It's just really exciting to say this is aligned with kind of sol- trying to tackle those big future problems in medicine and working together as a team.

Ian White: As a faculty, I get so much enjoyment of watching students grow and synthesize everything into becoming a, a better scientist, a better engineer, a better person. And The idea that we've had the opportunity to put a program together to take extraordinary students and watch them, uh, bring it all together in a way that also brings great rewards to these students.

They're all clearly so happy to be a part of the program, so excited to, to grow themselves on this pathway towards University of Maryland School of Medicine, and I think just watching them grow and get better is, it's just so exciting.

Neda Frayha: [00:27:00] Any closing words of advice for any students who might be listening?

Ian White: Yeah. I, I think, um, for, for those who, who are interested, maybe that means those are young students who are thinking about, uh, where to go to college and what to study or even, uh, parents who have students who may be on this pathway at, at some point. Um, certainly we would remind everybody that this is a highly specific program, uh, to bring in those who have a passion for both, uh, advanced technology as well as practicing medicine.

Um, but yeah, for those who really wanna get into this program, um, I, I would really encourage them to, uh Think about emphasizing not only their, their academic, uh, skills and, and their acumen for, for their topic areas, but really to [00:28:00] think about emphasizing why it is that they want to practice medicine and what is the impact on people they want to have.

Because as, as we've emphasized throughout this conversation, um, those are the students we really wanna see come into this program.

Nitin Seam: Yeah. Yeah. And I would also say, you know, obviously it's a new program, so there's often questions. Uh, Dr. White and I host, uh, info sessions for people interested in both the fall and the spring.

We have a slide deck and we talk through the program, but then we take time for anybody's questions. We stick around for that. So, um, I think that encourage people to, to feel free to, to do that 'cause a- again, a new program, it can be confusing to people.

Neda Frayha: And I think, too, even for the current medical students at the University of Maryland School of Medicine, it's really great to know that this program exists.

Number one, they may be mentoring some of those BS/MD students. Number two, it's nice to know what broader initiatives your own [00:29:00] school is a part of. They all know Dr. Parker and Dr. Quezada and Dr. Robinette really well. It's nice to know what your mentors and professors are working on and how we're kind of connecting these two campuses.

So I think there's a lot here to celebrate for, for students on both campuses, truly. Yeah.

Nitin Seam: Absolutely. And so there is such enthusiasm, and again, I think people are just so thoughtful about how we want the program to grow and succeed, so it's very exciting.

Neda Frayha: Well, Dr. Nitin Seem and Dr. Ian White, thank you both so much for your time.

It's been lovely to have this conversation with you.

Nitin Seem: Thank you.

Ian White: Thank you. It's been great.