So might as well start on time, but thank you everyone so much for joining us and happy Friday. My name is Alex. I’m one of the cancer genetic counselors here at Yale, New Haven Health, and I’ll be your moderator today. Anne. We are so excited to have you all here for genetic counselor for a day. We’ve been working on this for months now, so we’re excited to share this all with you, and that’s whether you just heard about genetic counseling yesterday, or you’re already preparing your
NOTE Confidence: 0.86626744
00:00:34.595 --> 00:00:35.660 genetic counseling application
NOTE Confidence: 0.86626744
00:00:35.660 --> 00:00:37.170 for the upcoming cycle.
NOTE Confidence: 0.86626744
00:00:37.170 --> 00:00:41.850 We really hope that this event can serve as.
NOTE Confidence: 0.86626744
00:00:41.850 --> 00:00:43.873 A good solid foundation for what the
NOTE Confidence: 0.86626744
00:00:43.873 --> 00:00:45.928 profession is and what it has to offer.
NOTE Confidence: 0.86626744
00:00:45.930 --> 00:00:48.106 And of course, how did they get there.
NOTE Confidence: 0.86626744
00:00:48.110 --> 00:00:49.190 If you want to.
NOTE Confidence: 0.8842011
00:00:52.420 --> 00:00:54.808 As promised, very jam packed schedule.
NOTE Confidence: 0.8842011
00:00:54.810 --> 00:00:57.066 The first part of our event
NOTE Confidence: 0.8842011
00:00:57.066 --> 00:00:59.485 today will focus more on kind
NOTE Confidence: 0.8842011
00:00:59.485 --> 00:01:01.570 of what genetic counseling is,
NOTE Confidence: 0.8842011
00:01:01.570 --> 00:01:03.560 what different specialties there are,
NOTE Confidence: 0.8842011
00:01:03.560 --> 00:01:06.384 followed by a 15 minute break and then
NOTE Confidence: 0.8842011
00:01:06.384 --> 00:01:09.365 the second half is more so focused
NOTE Confidence: 0.8842011
00:01:09.365 --> 00:01:11.125 on genetic counseling programs.
NOTE Confidence: 0.8842011
What to expect in Graduate School and will wrap up with a question and answer session at the very end. As we go through our presentations today, I'm sure you'll have lots of different questions, so do feel free to write them in the chat and if time allows, I will be posing a couple of questions to each of our speakers at the end of their presentation. But as mentioned before, if we aren’t able to get to your question, we’ll have a fairly generous amount of time at the end of our event to wrap things up there.
Finally, a shameless plug for your feedback.

This is only the second year that we’ve done the genetic counselor for a day event, so we’re absolutely looking for ways to improve and to continue to improve as we host this event in the coming years.

So at the end, or maybe sometime next week, we’ll be sending out a survey with questions about your thoughts on the program and what you would like to see.

And we’ll also be recording the event, so if you complete our survey, you can have a link to the recording of the event, and that’s for whether...
you are able to stay for the entire duration or just a small part of it. But thank you in advance. And I have to say that the views and opinions expressed in these presentations are those of the speakers, and they don’t necessarily reflect the official policy of Yale, New Haven Health, the National Society of Genetic Counselors, and or other genetic counseling programs. So, without further ado, I’ll turn it over to Amanda Ganzak, who will be talking more about the genetic counseling profession.
Alright, there we go. I’m Amanda Ganzak Anne. I’m so happy to be here and welcome everyone for participating in our event today. What I hope to do is give us a little bit of sort of groundwork and provide some baseline information about the field of genetic counseling before we sort of break out into some of the sub specialties here. With our lucky genetic counselors representing Yale, New Haven Health and Yale Medicine today. So I wanted to first give you a little bit about my background so I am a graduate.
of the Arcadia University program, which is now become the University of Pennsylvania genetic counseling program.

I, upon graduation, worked at MD Anderson Cancer Center in Houston, and particularly in the logic oncology department as a part of their clinical cancer genetics program. And so I worked also very closely with the UTI genetic counseling training program. While I was there. As well, I then transitioned to the Hospital of University of Pennsylvania and worked, and the cancer Risk Assessment Program and the Bassar Center for BRCA.
And then joined the team here at Yale, New Haven Health in 2017 and currently serve as a lead genetic counselor in the program.

So what is a genetic counselor? You know, I’m sure you guys landed here because part of what you Googled or heard about the field sounded pretty interesting. But you know, whenever you go into some type of social event or you’re asked, you know what do you do as it? As for your job. And I say genetic counselor. Usually people look sideways and have no clue what that is.
So I thought this was a rather funny representation of the various types of interpretations people make. Or assume when they hear what it is that I do as a genetic counselor, so everything from making the perfect baby to working in a lab to, you know, extracting an altering DNA. So all of those things aren’t necessarily really what we do, and it’s probably quite different than that and hard to explain, so I hope after today you all understand a lot more about what it is to be a genetic counselor and what our day-to-day job really looks like.
So what is a genetic counselor?

Let’s look at sort of the definition here.

So genetic counselors are health care professionals with advanced training and medical genetics and counseling who educate, guide, and support patients seeking information about inherited diseases and conditions in order to provide a better understanding of how genetic information impacts patients, lives and lives of their family members. OK, so let’s unpack all of this.
Really a lot of what genetic counselors do is translate complex genetic information in a way that the average person can understand, digest and really be able to apply what they learned in terms of what their risk might be for a genetic or hereditary condition. To make choices about their medical care as well as understand what that risk might mean for their children and other family members.

But a genetic counselor shop is not merely to explain complex test findings, it’s also to help patients chart a course for how to use that knowledge proactively.
And there was a task force created in 22,003 as part of the National Society of Genetic Counselors to really help develop a definition of genetic counseling. And so they have defined this as a process of helping people understand and adapt to the medical, psychological and familial implications of the genetic contributions to disease. And that process really integrates interpreting medical and family histories to assess the chance of disease. Occurrence or reoccurrence within a family. To educate about the inheritance testing options, medical management,
prevention resources and research.

And the counseling is to really help promote informed choices in patients and how to help that patient adapt to that risk or condition that they might have been found to have.

So really, our job is multifaceted. Everything from performing a risk assessment, providing education might even be delivering a diagnosis for that individual family members or their child or future child help provide the psychological support and really hope to promote advocacy along the way.

So how do we become a genetic counselor? So Jenna counselors obtain a Masters degree,
which is typically a two year program in genetic counseling from a program that’s been accredited by the Accreditation Council for Genetic Counseling or the AC GC. And right now there are about 55 training programs in the US and Canada. Typically the training includes both classroom based learning as well as clinical rotation, so you kind of get a combination of on the job learning from those in the field across various specialties, but also sort of learning that baseline detailed knowledge of genetics, inheritance, results and all the
information that you’re going to need to learn to explain to patients.

Upon graduation, candidates then sit for the American Board of Genetic Counseling or a BGC board certification exam to become a certified genetic counselor, and then on the state level. There is licensure of genetic counselors. Currently in 26 States and three more states have licensure bills that have passed or in the process of rulemaking. So in terms of the history of their profession, so in 1955, Doctor Sheldon Reed presented the concept of genetic counseling at
the first International Congress on Human Genetics in Copenhagen, and he then published a book on counseling and medical genetics. But it really wasn’t until 1969 where the first genetic counseling program was founded at Sarah Lawrence College, right here. In 1979, the National Society of Genetic Counselors was founded in 1981. Certification examinations were developed in conjunction with credentialing of medical geneticists.
which are physicians.

In 1993, the ABG established, and began certifying genetic counselors and accrediting training programs in the USN, Canada.

In 2002 the first state licensure was approved in Utah, and they became the first state to license genetic counselors an in 2021. Now 26 states have licensure and three states are pending.

And if you look at how has the profession grown with time, it seems to be almost exponential. So just 30 years ago there was only just over 400 and counselors.
And as far as this, you know graph takes us. It has now approached 5000 and when I look back as to when when I graduated in 2008, the field has more than doubled, which is absolutely amazing. So there is a lot of career opportunity. Here, as a genetic counselor. Which is just very exciting for the field overall. Yeah, we really have seen that genetic counseling as a career is rated one of the top health care support
00:11:09.675 --> 00:11:11.949 jobs out there, according to U.S. news.
00:11:11.949 --> 00:11:12.292 An reports as well as the US Bureau of Labor Statistics.
00:11:12.292 --> 00:11:16.526 And if you ask most genetic counselors,
00:11:16.530 --> 00:11:19.148 90% of us are really satisfied in the profession that we sit in.
00:11:19.150 --> 00:11:21.562 Which is, you know, not all specialties in all careers and people in various professions can maybe save with that high of.
00:11:21.562 --> 00:11:24.010 in the profession that we sit in.
00:11:24.010 --> 00:11:25.478 Satisfaction score so in terms of demographics,
00:11:25.478 --> 00:11:27.680 in 2018 when we look internationally, there are approximately 7000 genetic counselors in 28 different countries.
And the NSDC does a professional status survey every two years to look at who are genetic counselors. Right now, most genetic counselors are female, but we always look to recruit our male counterparts to be genetic counselors. It’s just sort of been a female-driven field for a very long time.

About 50% of genetic counselors have direct patient care. 2% of responders to the status survey responded that they were part of the disability community as well. If we look at the areas of practice, about 50% of genetic counselors are in positions where they have direct patient care.
And really, what does that mean? OK, they’re looking. You know they’re working with patients face to face. They might be supervising students, participating education and teaching. They do ordering of genetic testing. They might do clinical coordination. And that’s in comparison to non direct patient care genetic counselors and those may be ones who are working on in a lab where they’re writing lab based genetic test reports or answering questions for providers who are ordering genetic testing, they might be doing interpretation
00:13:03.170 --> 00:13:05.220 of variance from genetic testing.

00:13:05.220 --> 00:13:08.440 They might be at liaison between customers and performing their own research.

00:13:10.850 --> 00:13:12.494 And then there is positions that sort of a mixed based approach where they have some direct patient care in clinical coordination.

00:13:18.290 --> 00:13:20.264 But they also might be working more of sort of a lab based or industry stats side of things where not all of their job responsibilities include working directly with patients.

00:13:31.579 --> 00:13:34.057 90% of them work full-time and 10% work part time.
And when we look at positions
and this is before Kovin,
so take this number with a grain of salt.
Genetic counselors are 40% of them were
working remotely as part of their position,
that number has increased,
but slowly we're starting to make our
way back into the clinic full time.
As we all get vaccinated here.
So in terms of current statistics
and areas of practice,
genetic counselors have very different
specialty areas and this is just
sort of further subdivided with time.
Everything from prenatal or reproductive
00:14:15.295 --> 00:14:16.628 genetics, pediatric genetics,
00:14:16.628 --> 00:14:17.960 neurogenetics, metabolic diseases,
00:14:17.960 --> 00:14:20.180 general genetics testing in laboratory,
00:14:20.180 --> 00:14:22.850 adult genetics, cardio, genetics, and cancer.
00:14:22.850 --> 00:14:25.626 So you’re going to hear about a lot
00:14:25.626 --> 00:14:28.618 of these different specialties today,
00:14:28.620 --> 00:14:31.819 which is great to give you a
00:14:31.819 --> 00:14:33.700 good overview of how.
00:14:33.700 --> 00:14:34.716 We’re all genetic counselors,
00:14:34.716 --> 00:14:37.056 but our jobs are sort of a little bit
00:14:37.056 --> 00:14:38.834 different based on what we specialize in.
00:14:38.840 --> 00:14:41.216 And then looking at where we based out
00:14:41.216 --> 00:14:43.516 of where are are who are employers.
00:14:43.520 --> 00:14:45.290 You know many people might be
00:14:45.290 --> 00:14:47.181 working in an academic or university
00:14:47.181 --> 00:14:48.894
based setting like here at Yale,

New Haven Health and Yale Medicine.

They might be just working for

a hospital that’s not affiliated

with an academic setting.

They may be working for nonprofits

or government or in a laboratory.

And when you look at the areas of specialty

or practice among genetic counselors,

this also has changed overtime.

So in the very early years of the

field or the profession,

many more genetic counselors were working

in the prenatal or reproductive side.

Or general genetics side of the field.

But with time, what we’ve notice is
NOTE Confidence: 0.8492262
00:15:27.193 --> 00:15:29.780 that the field of genetic genetic
NOTE Confidence: 0.8492262
00:15:29.780 --> 00:15:32.055 counseling in the specialty of
cancer has increased with time.
NOTE Confidence: 0.8492262
00:15:32.055 --> 00:15:34.568 And it’s actually the highest
NOTE Confidence: 0.8492262
00:15:36.770 --> 00:15:40.569 kind of specialty area currently.
NOTE Confidence: 0.8492262
00:15:40.570 --> 00:15:43.960 Now for genetic counselors,
NOTE Confidence: 0.8492262
00:15:41.926 --> 00:15:43.960 they might not always work in
NOTE Confidence: 0.8492262
00:15:44.025 --> 00:15:46.180 just one single specialty among
NOTE Confidence: 0.8492262
00:15:46.180 --> 00:15:47.473 survey genetic counselors.
NOTE Confidence: 0.8492262
00:15:47.480 --> 00:15:49.400 1/3 of people practice in
NOTE Confidence: 0.8492262
00:15:49.400 --> 00:15:51.320 just one area of specialty.
NOTE Confidence: 0.8492262
00:15:51.320 --> 00:15:51.648 However,
NOTE Confidence: 0.8492262
00:15:51.648 --> 00:15:53.616 they might have a position where
NOTE Confidence: 0.8492262
00:15:53.616 --> 00:15:55.626 they are counseling patients with
NOTE Confidence: 0.8492262
00:15:55.626 --> 00:15:57.078 multiple different specialties,
so they might have patients who they are.

Counseling based on prenatal based
genetic testing and then their next
cancer predisposition syndrome.

So there is some variability and
genetic counseling positions.

In specialty areas,
I commend all the genetic counselor
counselors out there who do have
to more than one practice area,
'cause I don’t know how they do it.
But as you know,
really being as someone who works
in a single single specialty,
but those positions do exist.
If certainly if someone's interested in sort of more than one specialty area through their training.

Now, the majority of direct patient care positions really are a face to face type model for most people, although there were some telephone and Tele health. You know video type Konsult visits that were a part of the counseling model. With COVID we have shifted to probably much more in this phone and Tele health model nowadays. An I really do not think that
that’s going anywhere anytime soon.

I think what that has really also demonstrated to us is we’ve been able to expand our services to patients who might not. Otherwise, have access to a genetic counselor in their geographic area, and also anecdotally, what I have noticed with my patients is that now I can really offer testing in families where I found a genetic risk and identified the gene and the family to more systematically offer testing to their relatives more easily so they might not be
00:17:27.297 --> 00:17:29.591 based out of New Haven or in the Yale New Haven health system.

00:17:30.947 --> 00:17:32.956 But being able to get them registered in our system and seeing them remotely now becomes a much easier possibility and then offering them testing for the no mutation that’s been identified in the family. Has really increased the ability for us to share this information with relatives and we’re actively get them tested.

00:17:40.620 --> 00:17:42.570 been identified in the family. Has really increased the ability for us to share this information with relatives and we’re actively get them tested.

00:17:44.250 --> 00:17:46.156 us to share this information with relatives and we’re actively get them tested.

00:17:48.704 relatives and we’re actively get them tested.

00:17:50.750 --> 00:17:52.832 So we look at the salary of genetic counselors. The average salary for a full time genetic counselor makes just under
$95,000 when surveyed and our salary

has truly increased over the years and

you graduate may expect to make about

you may expect to make about $75,000 a year for full time position.

A lot of that can also depend on geographic area.

Obviously taking a job in a city like New York City, where the cost of living is more expensive, this salary.

Likely it should be more than someone who might be.

Working in a smaller based town or hospital system and those genetic counselors who work for direct care type of positions,
they make about $83,000 on average

in genetic counselor who works in a position with nine direct patient

or maybe more of it is a lab or industry based physician.

They make on average $100,000 and $14,000

and then the positions that are mixed so they have some direct

They make on average $97,000 a year.

So what can you expect when someone has an appointment with a genetic counselor?

So I want to go through a little bit of what
the process and what that appointment typically look like. So the 1st and biggest step is really taking a detailed medical and family history. So here we have Dirk bringing in his family tree to class. Yeah it represents his parents, his siblings, his grandparents. And that’s a lot of what we do. So as we talk through today I want to introduce this, you know. Family history collection tool that we in genetics call a pedigree and get you familiar with what this looks like. Since several of the genetic counselors will share some case examples.
And a pedigree is really a representation of the family tree and it helps to diagram the potential inheritance of a condition or disease through several generations of a family. It also shows the relationships between family members and indicates who in family member who in the family might have certain traits or disease. So on the right hand side, what you’re seeing here is that women are represented by the circles and men are represented by squares. So if this was my patient here who was 34
a male, he had a brother and a sister, so all the children are on one line together here and their parents are the next level above them. So this would be their mom. This would be their dad on Mom’s side of the family. We have an uncle and aunt and then above there are the grandparents to my patient. And anyone who is shaded in so these individuals here are those who have a certain genetic risk or disease. So for my job as a cancer genetic counselor, these might be people in the family who have cancer and so the more people who are shaded in in multiple
generations are all factors that we assess for to determine if there is a hereditary risk within the family.

So I wanted to introduce this so that you have some baseline information as the genetic counselors after me.

Talk more about their family histories that they’ve collected.

So after we’ve collected the family history, we then perform the risk assessment.

We take all those factors together and talk about how likely does that individual or family have a hereditary risk?

We provide education about genetics inheritance,
how this would impact the patient and their family members if we found a certain disease in their family. We would help coordinate consent for genetic testing. When applicable, we coordinate genetic testing and there is different types of medical genetic tests out there and we really sort of focus as genetic counselors in the category here on the left that we would deem medical genetic tests. Those like diagnostic testing. So someone coming in with a cancer diagnosis and doing genetic testing.
to assess for genes that cause cancer.

Carrier testing, you know, looking at subsets of populations to see if they carry a single mutation that when combined with another mutation in that gene could cause risk for children.

Prenatal diagnosis on abnormalities on an ultrasound or through some initial screening tests that looked abnormal and now we’re trying to understand whether the baby in fact is infected.

Newborn screening, so once that baby is born there some testing that can be done, particularly for metabolic diseases to
see if that child could be affected.

Since early intervention and changes to diet are so key to long term survival of those kids.

Predictive diagnosis OK, once we have a known genetic disease in our family, testing those relatives to see who else inherited that disease.

And these are a little bit different from non medical genetic tests like paternity testing or genealogy testing that you might hear about or see in your local pharmacy or forensic based testing.

So what is the process of genetic testing when we most often performed
genetic testing through blood sample?

Or we can use a saliva sample.

Here is an example of what that might look like.

We're in individual, would spit into a tube to collect the sample for genetic testing, but it can be additionally acquired through for newborn screening, a little heel prick where the blood is then withdrawn to do the testing and amniocentesis or CVS, which are two ways that. Testing is performed for prenatal diagnosis and some fine needle aspiration.
In some rare cases where we might need to look at the sort of the bone marrow to help us. So most insurance companies cover the cost of genetic testing, especially for those who have a personal or strong family history that really fit the pattern or condition that is in question. So once we’ve done genetic testing, it’s then our job to contact the patient and disclose those results and explain them in detail. What did we find? What does it mean? Who else in the family might need
testing we go through?

Are there particular follow-up tests or screening measures or medical management recommendations that we’re going to make based on the outcomes of genetic testing?

We hope to identify patient resources and or research opportunities that the individual or family might be eligible to participate in.

Now, given this genetic disease.

We hope to explore who in the family is also at risk to have a genetic condition and explain who else is eligible in the family to do genetic
testing and when we can help to coordinate that testing for those relatives. And then we summarize a plan for follow up. I think. Also for genetic counselors, we can act a little bit like a patient navigator. So now that we’ve identified a genetic risk, how do we plug them into other high risk providers to manage that genetic risk? Now moving forward for them, you know, well, it’s sort of might be a one stop shop. As I say, just have my patients in meeting with me.
I then help to get them plugged in with those resources, so that really have that long term management that can be so key for many of our patients. So now that you’ve learned a little bit of the baseline information about what it is to be a genetic counselor, we hope today to take you through some of the various specialties here at Yale, New Haven Health, Yale Medicine to understand a little bit more about what it
00:25:39.357 --> 00:25:40.887 is from a day-to-day perspective
NOTE Confidence: 0.8573543
00:25:40.887 --> 00:25:42.528 for our genetic counselors.
NOTE Confidence: 0.8573543
00:25:42.528 --> 00:25:45.800 In each of these specialties.
NOTE Confidence: 0.8573543
00:25:45.800 --> 00:25:48.019 So Next up will be Amy Kelly,
NOTE Confidence: 0.8573543
00:25:48.020 --> 00:25:50.162 who is one of our cancer genetic
NOTE Confidence: 0.8573543
00:25:50.162 --> 00:25:51.510 counselors in our smile,
NOTE Confidence: 0.8573543
00:25:51.510 --> 00:25:52.778 cancer genetics and prevention
NOTE Confidence: 0.8573543
00:25:52.778 --> 00:25:54.678 program at Yale, New Haven Health.
NOTE Confidence: 0.87444085
00:25:58.980 --> 00:26:00.460 Amanda, I was hoping
NOTE Confidence: 0.87444085
00:26:00.460 --> 00:26:03.804 to ask you a question before just as we
NOTE Confidence: 0.87444085
00:26:03.804 --> 00:26:06.178 have 3 minutes before Amy’s presentation.
NOTE Confidence: 0.87444085
00:26:06.178 --> 00:26:08.620 One of our participants here had
NOTE Confidence: 0.87444085
00:26:08.620 --> 00:26:10.774 brought up a good point and it
NOTE Confidence: 0.87444085
00:26:10.774 --> 00:26:12.340 said when creating pedigrees,
NOTE Confidence: 0.87444085
00:26:12.340 --> 00:26:14.470 does the family history just come
NOTE Confidence: 0.87444085
00:26:14.470 --> 00:26:16.420 from conversations with the patient?
What is done in cases where there they might not be aware of these problems?

And could you just elaborate on that?

Yeah a lot of times we will ask patients to either contact relatives to learn information about their family history. Ahead of the appointment so that we have as much information going into the appointment as possible from a cancer perspective, we’re mostly dealing with adults, so they usually have a some information either about themselves or their family members.
00:26:43.490 --> 00:26:46.055 But if not, can collect that ahead of time.
NOTE Confidence: 0.87444085

00:26:46.060 --> 00:26:47.686 Looking at things like the types of cancers in their family,
NOTE Confidence: 0.87444085

00:26:49.190 --> 00:26:51.294 the ages of onset now I’m sure in pediatric genetics and prenatal genetics
NOTE Confidence: 0.87444085

00:26:51.294 --> 00:26:52.784 might be a totally different in,
NOTE Confidence: 0.87444085

00:26:52.784 --> 00:26:54.602 you know what information we’re collecting and who’s able to share that information with them.
NOTE Confidence: 0.87444085

00:26:54.610 --> 00:26:55.970 if we’re looking at a baby or child,
NOTE Confidence: 0.87444085

00:26:55.970 --> 00:27:01.730 they’re certainly not going to be the ones who sharing the family history with the genetic counselor.
NOTE Confidence: 0.87444085

00:27:01.730 --> 00:27:03.332 And it’s going to be the parents instead,
NOTE Confidence: 0.87444085

00:27:03.332 --> 00:27:12.320 so I think it’s all in who is the patient,
how old they are,

but we always encourage people to try and reach out to family members prior to the appointment to see if anyone might have similar features that are consistent with what we're being evaluated for in the genetic counseling session.

Thank you.

And some of the other questions,

or at least one of them had to do with cancer genetic counseling.

So I’ll take that as your cue to start your presentation.
Great.

OK, good afternoon everyone.

I am so excited to be talking to you today about cancer, genetic counseling.

My name is Amy Kelly. I am a cancer genetic counselor at the Smilow Cancer Genetics and Prevention program at Yale.

But really, the goal of cancer genetic counseling and testing is to identify a hereditary predisposition.

Two cancer in an individual because that
could be helpful in terms of someone’s cancer treatment? And testing at risk relatives. So if there is a hereditary predisposition to cancer, we know who to test in the family. And depending upon the hereditary predisposition, there are certain cancer screenings management. Preventive surgeries were essentially someone. Could be prevented from developing a cancer, or it could be caught at a much earlier and treatable stage.
To actually change outcomes.

So really, the goal of cancer, genetic testing and counseling is to work with families in identifying hereditary predispositions, coordinating follow-up, and talking about the benefit of cancer prevention and screening.

Now before I talk about specifically what I do today, I want to go over my background. I did my undergraduate degree at Suni Oswego. I got my Bachelors of Science in zoology and I graduated in 2014. I then took a year off after I graduated to apply for genetic
counseling programs and to sensually beef up my application. Our Bay Path students later on today will talk to you more specifically about what they did, but just wanted to put in that is something I did as well. I graduated from the Icahn School of Medicine at Mount Sinai in New York City with My Masters in genetic counseling. I graduated in 2017 and I was board certified as of August 25th, and I remember the date because when you pass your boards,
you don’t forget that date.

And I’ve been with the Smilow Cancer Genetics program since June of 2017.

Sir,

so almost four years and my specialty is direct patient care and cancer only.

So when Amanda was talking about single or multiple specialties, my focus and specialty is cancer.

So Amanda talked about the risk assessment, so with hereditary cancer predispositions we look for red flags that would appear in someone’s personal or family history. That might increase suspicion of a hereditary predisposition to developing cancer.
So one of the biggest red flags that we might see is cancer diagnosed at early ages. It is dependent on cancer type, but when we see cancer at an unexpectedly young age, like for example breast cancer diagnosed at age 45 under 50, an unexpectedly young age, or in someone’s relatives could increase suspicion of a hereditary.
Another thing we see is you might see a family where there’s multiple relatives. Grandparents, aunts, someone’s parents with the same type of cancer like multiple odds with breast cancer. Or we can see associated cancers because what we know about hereditary cancer predispositions is there can be multiple cancer risks associated with a single previous position. So, for example, breast, ovarian, and pancreatic cancer in the family, even though they’re not the same cancer type. Seeing them in one family can increase my suspicion of a predisposition.
because we know there are single genes that can cause risk of multiple cancer types and other associated cancers. That we would talk about might be colon cancer and uterine cancer. In rare cancers, not every single cancer that is rare is necessarily related to hereditary risk, but specific types of rare cancers or tumors might make me suspicious. So ovarian cancer, pancreatic cancer, and breast cancer in a man. Those are quite uncommon, and given that their uncommon when we see them in a family we think about is
their hereditary predisposition causing that.

There’s even rare tumors which are called paraganglioma’s in Pheochromocytomas, which I don’t expect you to know or be able to pronounce when you see them for the first time, but rare there. Essentially rare tumors are usually benign that are found along the access of the body or for the pheochromocytomas found on the adrenal glands, so these are very specific type of tumors. But when your cancer genetic counselor, you know to look for specific tumor types that. If they’re rare, you know that,
OK, this might be indicative of predisposition. In cancers that are unusually aggressive, so specifically prostate cancer, which is common in men to have, but it’s less common for that cancer to become metastatic or aggressive, so something else to think about when we’re doing a family tree or pedigree. Or again kind of similar to the earlier point, but if some one person has bilateral breast cancer or colon and uterine cancer,
that might make me more suspicious
And finally,
And finally,
And finally, 
And finally,
And finally,
And finally,
And finally,
And finally, 
And finally,
And finally,
And finally,
And finally,
And finally,
And finally,
And finally,
And finally, 
And finally,
And finally,
And finally,
And finally,
Which of these individuals which are identical, identified by the arrow pointing below them, is most likely to have a hereditary cancer predisposition? So based on what I talked about with red flags. Which of these individuals needs pedigrees would you be most suspicious? Of having a hereditary cancer risk. And I’ll just give a couple. 30 seconds or so, Alex, Alex and tell me when it’s all set. The votes are pouring in. Let’s give it maybe another 10 seconds, alright?
00:35:09.070 --> 00:35:11.109 Just so folks can have some time to think.
NOTE Confidence: 0.89417976

00:35:24.550 --> 00:35:28.960 Let’s see. So most people said.
NOTE Confidence: 0.89417976

00:35:28.960 --> 00:35:32.848 Said said be which which I know I can see
NOTE Confidence: 0.89417976

00:35:32.848 --> 00:35:35.952 what from my perspective I would say see.
NOTE Confidence: 0.89417976

00:35:35.960 --> 00:35:38.936 Just because there is one person who was
NOTE Confidence: 0.89417976

00:35:38.936 --> 00:35:41.408 diagnosed quite young with breast cancer.
NOTE Confidence: 0.89417976

00:35:41.410 --> 00:35:44.511 But I do see where you’re with with
NOTE Confidence: 0.89417976

00:35:44.511 --> 00:35:47.178 B where there are two women with
NOTE Confidence: 0.89417976

00:35:47.178 --> 00:35:49.700 breast cancer but something that I
NOTE Confidence: 0.89417976

00:35:49.700 --> 00:35:52.214 also think about is that especially
NOTE Confidence: 0.89417976

00:35:52.293 --> 00:35:54.538 breast cancer at more typical.
NOTE Confidence: 0.89417976

00:35:54.540 --> 00:35:58.077 Ages, which would be over the age of 50,
NOTE Confidence: 0.89417976

00:35:58.080 --> 00:36:00.402 when a woman’s after menopause in
NOTE Confidence: 0.89417976

00:36:00.402 --> 00:36:02.803 a couple relatives is not very
NOTE Confidence: 0.89417976

00:36:02.803 --> 00:36:05.470 suspicious of a predisposition, but.
NOTE Confidence: 0.89417976

00:36:05.470 --> 00:36:07.570 Definitely you know it is something
that can raise a flag, but also, especially if it wasn’t multiple generations out. Probably make me a little bit more suspicious for the case of B. So let’s talk about it just to briefly talk about a typical day with cancer, genetic counseling. So I think the best way to illustrate this is just talk through an actual case that I saw. So when I pull up the pedigree, I know it looks like a lot, but the first thing I do when I see a case is a lot of what we
do is we are doing chart prep.

I'm looking at this patient's medical history.

This patient too with the big yellow arrow.

There she is a 63 year old female who was diagnosed with breast cancer at 56.

So I'm looking at pathology records and looking at her treatment I'm looking at other cancer screening like colonoscopy reports does.

Did you see a dermatologist?

Does she take any hormones, any major gynecological surgeries?

I'm taking all this in sharp prep and then I take what I know from the family history.
A prior to the appointment, but during the appointment the mid we collect the majority of the family history where we ask about cancer diagnosis and if there is a cancer diagnosis at what age they diagnosed. In this family she had never had genetic testing before, but she was prompted because she has a cousin on her mom’s side who had breast cancer, who reports has an ATM mutation. ATM is a moderate risk breast cancer gene which possibly could explain why her cousin developed breast cancer.
cancer so she was concerned about her risk of having that seem mutation.

But when we’re looking at the family tree, of course we take limitations into account. I did not have records confirming the genetic test results, but per the patient report, her aunt so her cousins mother tested negative and her uncle who’s not a blood relative. So for Cousins father tested positive for the ATM mutation. So we had this conversation where we don’t have records, but it seems like you’re not at
NOTE Confidence: 0.86037457

00:38:25.255 --> 00:38:27.870 risk for having this ATM mutation.
NOTE Confidence: 0.86037457

00:38:27.870 --> 00:38:30.734 Also reassuring that her mom is living 83,
NOTE Confidence: 0.86037457

00:38:30.740 --> 00:38:32.540 doing well other family history.
NOTE Confidence: 0.86037457

00:38:32.540 --> 00:38:34.598 I would look at is you
NOTE Confidence: 0.86037457

00:38:34.598 --> 00:38:36.490 know on her mom’s side.
NOTE Confidence: 0.86037457

00:38:36.490 --> 00:38:38.375 There is an ovarian cancer
NOTE Confidence: 0.86037457

00:38:38.375 --> 00:38:40.774 and we talked about breast and
NOTE Confidence: 0.86037457

00:38:40.774 --> 00:38:42.969 ovarian cancer can be associated.
NOTE Confidence: 0.86037457

00:38:42.970 --> 00:38:44.542 But a little bit distant
NOTE Confidence: 0.86037457

00:38:44.542 --> 00:38:46.414 to her in a great aunt,
NOTE Confidence: 0.86037457

00:38:46.420 --> 00:38:48.312 so we did talk about that.
NOTE Confidence: 0.86037457

00:38:48.312 --> 00:38:50.194 That you know on moms side
NOTE Confidence: 0.86037457

00:38:50.194 --> 00:38:51.450 we’re seeing some cancer,
NOTE Confidence: 0.86037457

00:38:51.450 --> 00:38:53.508 but a little bit distant to you
NOTE Confidence: 0.86037457

00:38:53.508 --> 00:38:55.437 and this ATM mutation seems like
NOTE Confidence: 0.86037457
it's not a risk of having it.

But we always take both sides the family into account, right?

So on Dad side, we look.

And as I said,

prostate cancer is common in men,

but less common to be meta static,

she reports her uncle died

she reports her uncle died

from prostate cancer.

In Dad side is small.

He only had one brother.

So really when we do this assessment,

we're looking at individuals,

their ages of diagnosis.

What is increasing suspicion and

my patient was not diagnosed at
a young age right now under 50, but we talked about, you know, given that your uncle has metastatic prostate cancer, your history of breast cancer definitely makes sense to do some testing. So we talked about genetic testing, which I know this is all coming all at once. But when we talk about genetic testing, you know we talk about the risks and benefits of genetic testing. Oftentimes we do now in the era of cancer, genetics is we do more comprehensive. We call panel testing.
Looking at genes related to hereditary breast ovarian cancer, uterine cancer, colon cancer, and other cancers so it can be quite broad. Range of cancer risk that we're looking at and we talked through the patient about the benefit of genetic testing. What it means for her relatives and what types of cancer screening and prevention would be. She might be eligible for or recommended to pursue, or what her relatives might be recommended to pursue.
And I know this is a list of long genes, but some people might recognize BRCA one and BRCA two related to hereditary breast and ovarian cancer syndrome, colloquially called the Braca genes. These are often the most common genes people know about. And but there are other genes that we test for related to risk of breast cancer, including high risk of breast cancer. Lynch syndrome is 1 syndrome that might be included related to mainly risk of colon and uterine cancer engines.
related to risk of ovarian cancer.

NOTE Confidence: 0.86179334

So again this is not a test.

NOTE Confidence: 0.86179334

Not expecting to know all these genes

NOTE Confidence: 0.86179334

but we look when we look at these

NOTE Confidence: 0.86179334

jeans were essentially looking at as

NOTE Confidence: 0.86179334

many as possible to rule out as many.

NOTE Confidence: 0.86179334

Possible predispositions to cancer,

NOTE Confidence: 0.86179334

and we talk about the risk and

NOTE Confidence: 0.86179334

benefits of doing testing and this

NOTE Confidence: 0.86179334

patient she wanted to pursue testing.

NOTE Confidence: 0.86179334

I coordinate that with her Center for

NOTE Confidence: 0.86179334

the blood work sent into the lab,

NOTE Confidence: 0.86179334

placed the order,

NOTE Confidence: 0.86179334

sending all the associated paperwork

NOTE Confidence: 0.86179334

for insurance purposes,

NOTE Confidence: 0.86179334

and then I got her results.
And she was positive for a mutation in BRCA one. Which, was a little bit surprising, but if we think back to the family tree her dad side was small, BRCA one does have a slightly increased risk for men for prostate cancer, so possibly could explain why her uncle had prostate cancer. You can see there. There’s another type of result called a variant of uncertain significance which. All genetic counselors deal with is
just variation in a gene that has not yet been classified to cause disease or not. The lab needs to collect more information, but it was not clinically actionable. So for this patient you know it was a very thorough conversation about calling the patient with the results explaining what that means, explaining recommendations for her, and then referring to appropriate providers. So with a BRCA one mutation there is a recommendation for bilateral self pinggu for ectomy to remove the ovaries and fallopian tubes to prevent against ovarian cancer risk.
My patient still had her ovaries and she was only 63, so something that I placed a referral for her. To discuss that surgery. And then meeting with the breast and colleges to talk about her risk of possibly developing a second breast cancer and how she would like to proceed with high risk screening or possibly a prophylactic mastectomy to remove the breasts. And some of her relatives did not live in the area,
so I was able to look up on line where her sister with her sister lived.

Find genetic counselor contact there and send it to the patient and then help coordinate relatives.

I live in the area explaining you know this is our program.

This is our fax number.

Have your relatives primary care providers fax us a referral.

So really coordinating those information to get the relatives in for testing.

Documenting phone conversations.

You know a lot of when we talk to a patient, see a patient.

It’s all documented in the medical record.
Notifying the referring provider of the results just so the provider is aware and then can be plugged into the patient's treatment or screening plan right away.

The results are scanned to the medical record so that can be included, and then I write up a summary. I write up a summary letter which summarizes the results in detail and include a family notification letter, which is just a cover sheet that can be sent to relatives. Might help aid in giving them information and giving them ways...
to pursue their own testing.

And at our program we present all of our cases at a case conference where we review all the cases together and it’s great ’cause we can get multiple perspectives from genetic counselors and breast specialists that we are part of a program gastroenterologist.

Breast specialists that we are part of a program gastroenterologist.

So really, really, just discussing these cases as a team.

Which I find very helpful.

So this is 1. This is 1 case, you know, just one case in the life of a cancer genetic counselor.

But I think this essentially is how I proceed.
NOTE Confidence: 0.86143327
00:44:57.795 --> 00:45:01.590 with all my cases and all my patients.
NOTE Confidence: 0.86143327
00:45:01.590 --> 00:45:04.058 So thank you so much for your attention.
NOTE Confidence: 0.86143327
00:45:04.060 --> 00:45:05.605 I think we’re just just
NOTE Confidence: 0.86143327
00:45:05.605 --> 00:45:07.150 a little bit over time,
NOTE Confidence: 0.86143327
00:45:07.150 --> 00:45:09.922 right on time I will be at the end.
NOTE Confidence: 0.86143327
00:45:09.930 --> 00:45:12.584 If you have any questions, I don’t get too.
NOTE Confidence: 0.86143327
00:45:12.584 --> 00:45:15.022 I will be at the end for the
NOTE Confidence: 0.86143327
00:45:15.022 --> 00:45:16.418 general Q&A at 3:25.
NOTE Confidence: 0.86143327
00:45:16.420 --> 00:45:18.022 That’s also my email if I
NOTE Confidence: 0.86143327
00:45:18.022 --> 00:45:20.130 do not get to your question,
NOTE Confidence: 0.86143327
00:45:20.130 --> 00:45:21.992 write it down and you can just
NOTE Confidence: 0.86143327
00:45:21.992 --> 00:45:23.840 send me an email directly.
NOTE Confidence: 0.86143327
00:45:23.840 --> 00:45:26.304 But thank you so much for your time.
NOTE Confidence: 0.826667
00:45:29.350 --> 00:45:32.820 Thanks Amy, that was a great presentation.
NOTE Confidence: 0.826667
00:45:32.820 --> 00:45:35.290 As a fellow genetic counselor,
00:45:35.290 --> 00:45:36.772 genetic counselor, accurate.
NOTE Confidence: 0.826667
00:45:36.772 --> 00:45:40.230 very accurate and now we have Julie
NOTE Confidence: 0.826667
00:45:40.311 --> 00:45:43.221 Mcclin who will be talking about
NOTE Confidence: 0.826667
00:45:43.221 --> 00:45:46.390 reproductive genetics, Julie. OK.
NOTE Confidence: 0.89085567
00:45:57.620 --> 00:46:00.920 Everyone can see my screen. Perfect.
NOTE Confidence: 0.8476335
00:46:02.850 --> 00:46:05.742 So again, my name is Julie McClain.
NOTE Confidence: 0.8476335
00:46:05.742 --> 00:46:08.214 I'm a reproductive genetic counselor at
NOTE Confidence: 0.8476335
00:46:08.220 --> 00:46:11.332 Yale and I've worked at maternal fetal
NOTE Confidence: 0.8476335
00:46:11.332 --> 00:46:15.069 medicine for a little over four years now.
NOTE Confidence: 0.8476335
00:46:15.070 --> 00:46:18.458 And over 90% of the individuals I
NOTE Confidence: 0.8476335
00:46:18.458 --> 00:46:22.179 work with are considered high risk.
NOTE Confidence: 0.8476335
00:46:22.180 --> 00:46:26.086 With special maternal and or fetal concerns,
NOTE Confidence: 0.8476335
00:46:26.090 --> 00:46:29.084 I previously worked at two different
NOTE Confidence: 0.8476335
00:46:29.084 --> 00:46:31.080 medical centers specializing in
NOTE Confidence: 0.8476335
00:46:31.163 --> 00:46:33.338 prenatal reproductive, cancer,
NOTE Confidence: 0.8476335
00:46:33.338 --> 00:46:35.570 pediatric and adult general
00:46:35.570 --> 00:46:37.244 genetic counseling services.

00:46:37.250 --> 00:46:40.505 So I I feel fortunate that I've had a chance to experience many different specialties.

00:46:40.505 --> 00:46:43.738 and overall my jobs have predominantly involved direct patient care.

00:46:43.738 --> 00:46:46.336 And overall my jobs have predominantly involved direct patient care.

00:46:46.340 --> 00:46:49.466 But I have also engaged in various clinical research studies as they came.

00:46:49.466 --> 00:46:51.550 in the department that I was working.

00:46:51.550 --> 00:46:54.252 in addition, in the past I served as the Director of clinical Training and the Master of Science in Genetic Counseling.

00:46:54.252 --> 00:46:56.332 in the past I served as the Director of clinical Training and the Master of Science in Genetic Counseling.

00:46:56.332 --> 00:46:58.900 in the past I served as the Director of clinical Training and the Master of Science in Genetic Counseling.

00:46:58.900 --> 00:47:02.120 of clinical Training and the Master of Science in Genetic Counseling.

00:47:02.187 --> 00:47:04.431 of clinical Training and the Master of Science in Genetic Counseling.

00:47:04.431 --> 00:47:06.388 at the Icahn School of Medicine at Mount Sinai and in the

80
past 20 years I’ve had the absolute pleasure of supervising over 150 different genetic counseling interns that have been enrolled in various training programs across the US, and they have kept me on my toes, and I think they’ve taught me as much as hopefully I have taught them. So terminology sometimes you’ll hear people use the word prenatal or reproductive and they are referring to something slightly different for prenatal, that’s talking about occurring or existing before birth, and prenatal care is the health care women receive during their pregnancy.
Some genetic counselors refer to themselves as prenatal genetic counselors because they are predominantly working with individuals and their partners while the pregnancy is in progress. And other genetic counselors refer to themselves more broadly as reproductive genetic counselors because they are collectively working with individuals who are pregnant, planning to become pregnant and or interested in discussing concerns that arose during a previous pregnancy. Genetic counselors have played an important role in supporting...
patients to make informed and value
NOTE Confidence: 0.8858245
consistent reproductive decisions.
NOTE Confidence: 0.8858245
Since prenatal screening and
diagnosis first became possible.
NOTE Confidence: 0.8858245
Some common reasons for referral to my
clinic are advanced maternal or paternal age,
meaning that the individual is 35
years or older at the time of delivery.
NOTE Confidence: 0.8858245
Personal or family history of a known
or suspected genetic condition,
intellectual disability or a congenital
structural difference such as a congenital
heart defect or cleft lip or palate,
missing kidney, etc.
NOTE Confidence: 0.8858245
In a typical fetal ultrasound finding or
diagnostic results.
00:49:12.760 --> 00:49:13.808 Teratogen counseling,

00:49:13.808 --> 00:49:16.952 which is when there is concern

00:49:16.952 --> 00:49:19.120 about whether a medication,

00:49:19.120 --> 00:49:20.168 drug, alcohol,

00:49:20.168 --> 00:49:23.312 or environmental exposures prior to or

00:49:23.312 --> 00:49:26.009 during pregnancy may impact fertility,

00:49:26.010 --> 00:49:30.228 fetal development and or pregnancy outcome.

00:49:30.230 --> 00:49:32.250 The individual is a carrier

00:49:32.250 --> 00:49:34.270 for an inherited condition or

00:49:34.346 --> 00:49:36.120 chromosome rearrangement.

00:49:36.120 --> 00:49:38.948 They may have a history of recurrent

00:49:38.948 --> 00:49:41.210 pregnancy loss or subfertility,

00:49:41.210 --> 00:49:43.990 or infertility.

00:49:43.990 --> 00:49:46.870 Sometimes people are planning to

00:49:46.870 --> 00:49:49.174 have assisted reproductive technology

NOTE Confidence: 0.8858245
to achieve pregnancy or they are planning to donate eggs or sperm, either to someone that they know or anonymously or receive donor eggs or sperm. Someone has a multifetal pregnancy like twins, triplets, quadruplets. People who have are from a specific ethnic or racial group or geographic area where there might be a higher incidence of certain conditions, such as Tay Sachs disease, sickle cell disease, or inherited forms of anemia. And the people are interested in having genetic carrier screening. And then those individuals just have
a general interest in discussing their test options, so there's not a particular concern, but they would like to know what is available to them or their reproductive partners prior to or during pregnancy, and that could include the genetic carrier screening. Screening or diagnostic testing for chromosome conditions etc. So many reasons for referral but. There are some common things that happen during a typical counseling session. So that would include obtaining medical, reproductive and environmental
 quirks posure histories.

Obtaining a family history of at least three generations, time permitting.

And documenting all the health concerns and genetic conditions that are reported.

Explaining the risk for or the diagnosis of a genetic disorder or congenital condition.

Educating about the inheritance of the recurrence risk.

Talking about the benefits, limitations and risks of their screening and diagnostic test options.

Perhaps talking about the prognosis of a specific condition, the management or treatment?
Prevention and research options.

We often are interpreting results of tests, discussing the implications, and talking about possible next steps. We educate them about assisted reproductive technologies because we may only be meeting with them once, so we perhaps are talking to them about. The fact that their fetus has been diagnosed with a particular condition but before they leave, we want them to know what they may want to consider prior to a future pregnancy and not depend on the fact that someone else in their
life will relay that information.

And overall we want to support the individual, the couple or the family with their reproductive decision-making.

With regards to the information that they receive and their personal, religious and their ethical and moral values. So the main goals of our genetic counseling sessions include what I think starting with number one is establishing report, because if we don’t establish report, it’s very hard to accomplish all of the other goals of the session if not impossible in some circumstances. We want to assess their needs,
exchange and discuss relevant information,
so we want to provide individualized education,
not make them feel that we’re lecturing to them, or you know,
just going through a script that we provide to every patient.

We try to elicit their thoughts and feelings, support and promote their autonomy and making informed decision making.
We provide short term psychosocial support and patient advocacy and we identify situations in which additional medical or psychological referrals or support services might be indicated.
We try to identify when someone might benefit from a support or advocacy group, individual or group counseling, and when we need to make specialty referrals to other departments and sometimes to other genetic counselors in other specialties. We try to serve as an ongoing resource as their needs and desires evolve over time, so establishing rapport is key in order to encourage them to call us back if they have additional questions or concerns in the future.

What is the typical day like for me? Well, there are two full time reproductive genetic counselors at Yale MFM and
At present we do see over 90% of our patients via video Tele Health. We each have up to four patients per day. And the majority of patients are scheduled in advance and given appointments within 24 to 72 hours of when they contacted our office. Prior to the session, pertinent records are reviewed. We do the appropriate research and this can take anywhere from approximately 10 minutes to over an hour, depending upon the indication for counseling. Some of our patients are added on to the schedule at the last minute.
00:54:56.013 --> 00:54:58.556 and seeing 5 to 10 minutes after
NOTE Confidence: 0.8428075
00:54:58.556 --> 00:55:00.080 they’ve been referred.
NOTE Confidence: 0.8428075
00:55:00.080 --> 00:55:00.696 For example,
NOTE Confidence: 0.8428075
00:55:00.696 --> 00:55:02.852 there could be a patient who came
NOTE Confidence: 0.8428075
00:55:02.852 --> 00:55:05.107 in for a routine ultrasound and
NOTE Confidence: 0.8428075
00:55:05.107 --> 00:55:07.483 unexpectedly found out that the fetus
NOTE Confidence: 0.8428075
00:55:07.483 --> 00:55:09.618 has structural concerns and suddenly
NOTE Confidence: 0.8428075
00:55:09.618 --> 00:55:12.080 they’re being referred to a genetic
NOTE Confidence: 0.8428075
00:55:12.080 --> 00:55:14.705 counselor to talk about what we seen,
NOTE Confidence: 0.8428075
00:55:14.710 --> 00:55:16.338 what it could mean,
NOTE Confidence: 0.8428075
00:55:16.338 --> 00:55:18.780 and what additional testing might be
NOTE Confidence: 0.8428075
00:55:18.858 --> 00:55:21.546 available to them to try to find out.
NOTE Confidence: 0.8428075
NOTE Confidence: 0.8428075
00:55:22.708 --> 00:55:25.885 Of what we’ve seen in order to guide
NOTE Confidence: 0.8428075
00:55:25.885 --> 00:55:28.678 them with regard to prognosis and the
NOTE Confidence: 0.8428075
00:55:28.680 --> 00:55:31.290 chance of a baby having a similar
condition in a future pregnancy.
In those particular sessions where patients are added on at the last minute. As you can imagine, they’re usually very understandably upset. They often have difficulty concentrating and reduced recall after the session. And another challenge is that the genetic counselor often has very minimal prep time and may need to contact the patients after the sessions in order to relay important information that wasn’t available at the time of the meeting. So this is another time where...
establishing report is key and kind of being with the patient where they are in that moment and assessing how much follow-up counseling might be warranted. The average reproductive genetic counseling session takes about 45 to 60 minutes. And after the session, test orders are placed, note that we send to both the referring provider and the patient. Patients might need to be recontacted, and this follow-up can collectively take anywhere from 15 to 20
minutes to well over an hour, depending on the session. And the remainder of my day is spent returning emails and telephone messages from patients and their clinical providers answering questions from my colleagues and community providers. Conducting research for current or future patients calling out test results. Preparing upcoming lectures. Because I lecture every two weeks to the maternal fetal medicine fellows. And I try to obtain data for ongoing clinical research studies. I perform managerial duties, etc.
So my day can be fairly busy, even if on the books it may say I only have 1, two, or three patients sometimes. Even with no patience, the day can be incredibly interesting and busy. Overall teamwork is essential, although I work independently as I provide direct patient care. I’m fortunate to work with a much larger team and maternal fetal medicine. I work with another genetic counselor. Administrative assistance, maternal fetal medicine, attendings, and fellows.
Nurses, including a really special nurse who manage, is the fetal care center program and helps us to coordinate specialty consults and testing for pregnant women. We have a part time social worker who is available usually within minutes. If we have a patient that we're working with that we feel has special needs, that really should be addressed prior to the person exiting our department and getting into their car. I also routinely refer and consult with clinical geneticists in.
the genetics department at Yale.

So I wanted to talk about one case example that I think highlights are genetic counselors roles and how a patient’s needs and desires may evolve over time.

And some background to prepare you for that case is little genetics 101.

It’s estimated that humans have approximately 20 to 25,000 protein coding genes.

And there’s something called expanded genetic carrier screening that is non targeted. Carrier screening that evaluates an individual’s carrier state for multiple conditions at once regardless of ethnicity or racial background.
Some labs offer genetic carrier screening for hundreds of genes on a single test panel, and this is something that many obstetric providers offer to all of their patients, particularly if they’re in the first or early second part of their trimester or ideally, prior to becoming pregnant.

So I do have a question for the audience. An individual in the general US population has a what percent chance of being found to be a carrier for at least one condition on a panel of 274 genes. Less than one percent 5%. 37% or 64%.
01:00:25.620 --> 01:00:29.990 good spread and a lot of you. Were correct.
NOTE Confidence: 0.89498824
01:00:33.300 --> 01:00:35.670 So the correct answer was 37%
NOTE Confidence: 0.89498824
01:00:35.670 --> 01:00:38.650 in a large study were found to
NOTE Confidence: 0.89498824
01:00:38.650 --> 01:00:41.650 be a carrier for one condition.
NOTE Confidence: 0.89498824
01:00:41.650 --> 01:00:44.386 Excuse me, 64 percent is the correct answer.
NOTE Confidence: 0.89498824
01:00:44.390 --> 01:00:47.190 37% were found to be a carrier
NOTE Confidence: 0.89498824
01:00:47.190 --> 01:00:48.390 for one condition.
NOTE Confidence: 0.89498824
01:00:48.390 --> 01:00:50.886 But the question was at least one condition,
NOTE Confidence: 0.89498824
01:00:50.890 --> 01:00:52.857 so overall this is with the spread
NOTE Confidence: 0.89498824
01:00:52.857 --> 01:00:55.450 for how many were found to be a
NOTE Confidence: 0.89498824
01:00:55.450 --> 01:00:56.802 carrier for multiple conditions,
NOTE Confidence: 0.89498824
01:00:56.810 --> 01:00:59.618 which is not as rare as people would think.
NOTE Confidence: 0.8802339
01:01:01.710 --> 01:01:03.320 So I realize that I’m going a
NOTE Confidence: 0.8802339
01:01:03.320 --> 01:01:04.616 little over, so I’m just going
NOTE Confidence: 0.8802339
01:01:04.616 --> 01:01:06.539 to pick up my pace a little bit.
NOTE Confidence: 0.88858265
01:01:07.880 --> 01:01:09.100 I had a 41
01:01:09.100 --> 01:01:10.918 year old woman who was referred
01:01:10.918 --> 01:01:11.827 for preconception counseling.
01:01:11.830 --> 01:01:14.002 After she had expanded genetic carrier
01:01:14.002 --> 01:01:16.700 screening that revealed that she is a carrier
01:01:16.700 --> 01:01:18.482 for a condition called Wilson Disease.
01:01:18.490 --> 01:01:21.196 And as with many genetic conditions,
01:01:21.200 --> 01:01:23.420 particularly those that are inherited
01:01:23.420 --> 01:01:25.640 in an autosomal recessive way
01:01:25.707 --> 01:01:27.957 which Wilson send Wilson diseases,
01:01:27.960 --> 01:01:31.117 carriers are not predicted to be symptomatic,
01:01:31.120 --> 01:01:33.990 so she was not aware.
01:01:33.990 --> 01:01:36.751 She was referred for genetic counseling by
01:01:36.751 --> 01:01:38.379 her reproductive endocrinologist because
01:01:38.379 --> 01:01:41.074 she was planning to pursue in vitro
01:01:41.074 --> 01:01:42.849 fertilization due to secondary infertility.
An the ender Chronologist wanted her to discuss this in advance.

She and her 49 year old partner had two previous spontaneously conceived pregnancies that resulted in full term deliveries.

They have two young sons, two years old and five year olds, five years old and they were reported to be healthy and developmentally typical.

And they’ve been trying to conceive the third pregnancy for over one year without success.

So Wilson Disease is a disorder of copper metabolism that can present with liver, neurologic or psychiatric disturbances, or a combination of all three.

And the symptoms May 1st present between
age 3 to greater than 50 years of age, and the symptoms can vary among and within families. The there is treatment that exists that can prevent the development of liver, neurologic and psychiatric findings in asymptomatic affected individuals. And as I mentioned, Wilson disease is inherited in an autosomal recessive manner. If both members of the couple are carriers with each pregnancy, there would be a 25% chance to have an affected child who inherits one copy of the nonworking gene from each parent.
A 50% chance to have a child that is an unaffected carrier and a 25% chance to have a child that is an unaffected non carrier.

And this table shows you quickly what the carrier frequency is among certain populations, the worldwide carrier frequency is approximately 1 and 90.

So during the genetic counseling session, I obtained the family pregnancy and medical histories. We discussed the clinical features, an autosomal recessive nature, Wilson disease we talked about, currently available treatment and
preimplantation prenatal and postnatal diagnostic test options. And I recommended that her partner have carrier screening for Wilson disease as a non Jewish Caucasian in the general population. He had a one in 90 chance of being a carrier. So prior to him having testing, I did a little math with them and said that their chance of having a child with Wilson disease without having his screening results was. One which is her chance of being a carrier times one in 90.
times one and four.
Note confidence: 0.85637105
The chance that if they were both carriers they would both transmit the disease gene in one pregnancy which came to one out of 360 or .28%.
Note confidence: 0.85637105
A large part of our session was spent with the patient and her partner expressing how much they regretted that she had pursued expanded carrier screening because they felt that. Her being found to be a carrier was unnecessarily delaying their plans to become pregnant via IVF, and they had a lot of anger and frustration and I tried to listen and validate their feelings,
but also explain why they had been referred and help them to understand why their provider thought this was an important step.

The husband elected to have carrier screening. He was found to be a carrier for Wilson disease and now their reproductive risk is one in four or 25%. So we spent the next session discussing their options for having in vitro fertilization with some targeted pre-implantation genetic testing. Which means that they test a fertilized egg for this specific genetic condition prior to transferring unaffected.
01:05:30.852 --> 01:05:33.449 embryos into the woman’s body.
NOTE Confidence: 0.85637105
01:05:33.450 --> 01:05:35.652 And the couple requested that their
NOTE Confidence: 0.85637105
01:05:35.652 --> 01:05:37.871 two children be tested for Wilson
NOTE Confidence: 0.85637105
01:05:37.871 --> 01:05:39.923 disease and a referral to the
NOTE Confidence: 0.85637105
01:05:39.923 --> 01:05:41.810 Department of Genetics was made.
NOTE Confidence: 0.85637105
01:05:41.810 --> 01:05:44.012 Testing of the minor children was
NOTE Confidence: 0.85637105
01:05:44.012 --> 01:05:46.180 coordinated by a genetic counselor,
NOTE Confidence: 0.85637105
01:05:46.180 --> 01:05:48.235 and clinical geneticists in that
NOTE Confidence: 0.85637105
01:05:48.235 --> 01:05:49.879 department and genetic testing
NOTE Confidence: 0.85637105
01:05:49.879 --> 01:05:51.834 revealed that both children are
NOTE Confidence: 0.85637105
01:05:51.834 --> 01:05:53.318 affected with Wilson disease.
NOTE Confidence: 0.85637105
01:05:53.320 --> 01:05:55.160 They were subsequently referred to
NOTE Confidence: 0.85637105
01:05:55.160 --> 01:05:56.632 appropriate specialists for further
NOTE Confidence: 0.85637105
01:05:56.632 --> 01:05:57.923 discussion regarding recommended
NOTE Confidence: 0.85637105
01:05:57.923 --> 01:05:59.679 lifelong treatment and surveillance,
NOTE Confidence: 0.85637105
01:05:59.680 --> 01:06:02.140 and the couple elected to postpone

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expanding their family until after the immediate medical needs of their children were addressed.

Just as a note, we don’t typically test minors for genetic conditions, but there are exceptions to that when there is treatment available so that knowing the diagnosis prior to becoming symptomatic. And in situations where they may become symptomatic during childhood is a real concern, that is when we would absolutely consider testing a minor. So in conclusion, pregnancy can be...
01:06:40.604 --> 01:06:43.894 many things planned and unplanned, 
NOTE Confidence: 0.8835299
01:06:43.900 --> 01:06:45.874 desired or undesired. 
NOTE Confidence: 0.8835299
01:06:45.874 --> 01:06:48.060 Wonderful, exciting, scary, 
NOTE Confidence: 0.8835299
01:06:48.060 --> 01:06:49.800 anxiety provoking, 
NOTE Confidence: 0.8835299
01:06:49.800 --> 01:06:51.540 joyful, depressing. 
NOTE Confidence: 0.8835299
01:06:51.540 --> 01:06:53.144 Medically or genetically uneventful 
NOTE Confidence: 0.8835299
01:06:53.144 --> 01:06:55.348 or complicated, so many things, 
NOTE Confidence: 0.8835299
01:06:55.348 --> 01:07:00.427 and sometimes many of these 
NOTE Confidence: 0.8835299
01:06:57.678 --> 01:07:02.038 descriptors are in the same pregnancy. 
NOTE Confidence: 0.8835299
01:07:02.038 --> 01:07:04.718 Reproductive genetic counselors 
NOTE Confidence: 0.8835299
01:07:04.718 --> 01:07:07.143 have both the responsibility and 
NOTE Confidence: 0.8835299
01:07:07.143 --> 01:07:11.561 the privilege of educating and 
NOTE Confidence: 0.8835299
01:07:11.561 --> 01:07:14.285 supporting patients who are faced 
NOTE Confidence: 0.8835299
01:07:14.285 --> 01:07:17.120 with making difficult decisions prior 
NOTE Confidence: 0.8835299
01:07:17.120 --> 01:07:20.038 and during pregnancy and working 
NOTE Confidence: 0.8835299
01:07:20.038 --> 01:07:22.607 with this patient population can be
challenging and extremely rewarding.
Thank you very much.
Thank you Julie. That was a great presentation. I'm wondering that I went over. That's OK, there's a lot, a lot to talk about. I'm wondering if I could enlist you to help. There's a couple of questions that I think would be best suited for you, but will let Arpita get on with her cardiology presentation if I could just ask you to maybe help me answer those. Yes, it could be the best person. I will
01:07:52.150 --> 01:07:53.430 take a peek, thanks.
NOTE Confidence: 0.9300304
01:07:56.390 --> 01:08:00.210 Alright, can you hear me OK? Perfectly,
NOTE Confidence: 0.8689328
01:08:00.210 --> 01:08:01.578 alright, thank you. Thank
NOTE Confidence: 0.8689328
01:08:01.580 --> 01:08:03.633 you Alex and thank you to
NOTE Confidence: 0.8689328
01:08:03.633 --> 01:08:05.002 everyone for being here.
NOTE Confidence: 0.8689328
01:08:05.002 --> 01:08:07.389 I hope you’re having a great day.
NOTE Confidence: 0.8689328
01:08:07.390 --> 01:08:09.448 Great afternoon of learning so far.
NOTE Confidence: 0.8689328
01:08:09.450 --> 01:08:12.524 I’m going to try and not speak too fast,
NOTE Confidence: 0.8689328
01:08:12.524 --> 01:08:17.626 but I also know who be mindful of the time.
NOTE Confidence: 0.8689328
01:08:17.630 --> 01:08:20.690 I’ll give you an overview of my background
NOTE Confidence: 0.8689328
01:08:20.690 --> 01:08:26.800 or month is structured in cardiology.
NOTE Confidence: 0.8689328
01:08:26.800 --> 01:08:29.467 An example from genetic counseling in clinic,
NOTE Confidence: 0.8689328
01:08:29.470 --> 01:08:33.660 and if we still have time we can go over
NOTE Confidence: 0.8689328
01:08:33.765 --> 01:08:37.845 an example from the research that I do.
NOTE Confidence: 0.8689328
01:08:37.850 --> 01:08:40.274 I graduated from the UC Irvine
program in 2014.

Before that I did my schooling in India and my undergrad degree from Dubai.

I mean, I’m technically an engineer in biotechnology, but I have no engineering skills at this point.

It’s all genetic counseling.

After graduating,

I worked with some of these lovely folks at the Smilow Cancer Genetics and Prevention program for a little over 2 years.

I did give my board exam in 2015 and then from 2017 I’ve been in internal medicine and cardiology specifically.
in the cardiovascular genetics program.

This pie chart shows how my time is supposed to be spent. You know most of it is supposed to be in patient care in research, about 40% each, and then the remaining split between program development and education. Patient care does overflow, so I don’t end up dividing my time as equally as I’m supposed to.

Inpatient care I see patients in the inpatient setting, so if they’ve been admitted to the hospital because of a heart attack or a sudden cardiac arrest,
or if they’ve been referred outpatient so their physician or their general cardiologists picked up on either family history or a personal diagnosis and specifically referred the patient to see one of us in cardiovascular genetics.

I work with one position primarily, but we’ve expanded our services in the last couple of years, and so in a given month I have four to five clinic days, and so that’s not a lot when you think of the number of days, but each day we see anywhere between
01:10:32.854 --> 01:10:35.766 8:00 and 12:00 patients, and so on.
NOTE Confidence: 0.8689328
01:10:35.766 --> 01:10:37.998 Mondays I have a genetic counselor
NOTE Confidence: 0.8689328
01:10:37.998 --> 01:10:38.970 only clinic,
NOTE Confidence: 0.8689328
01:10:38.970 --> 01:10:41.262 which is primarily a phone konsult
NOTE Confidence: 0.8689328
01:10:41.262 --> 01:10:43.400 for patients or family members.
NOTE Confidence: 0.8689328
01:10:43.400 --> 01:10:45.668 And then on Fridays I’m in the
NOTE Confidence: 0.8689328
01:10:45.668 --> 01:10:47.956 MD clinic where you know both of
NOTE Confidence: 0.8689328
01:10:47.956 --> 01:10:49.816 us have to see the patient.
NOTE Confidence: 0.8689328
01:10:49.820 --> 01:10:53.556 We have 40 minutes to complete the konsult.
NOTE Confidence: 0.8689328
01:10:53.560 --> 01:10:55.152 We see primarily adults,
NOTE Confidence: 0.8689328
01:10:55.152 --> 01:10:57.540 but we do see children there.
NOTE Confidence: 0.8689328
01:10:57.540 --> 01:10:59.525 Either the children off our
NOTE Confidence: 0.8689328
01:10:59.525 --> 01:11:01.113 patient or their children,
NOTE Confidence: 0.8689328
01:11:01.120 --> 01:11:03.110 you know referred by the
NOTE Confidence: 0.8689328
01:11:03.110 --> 01:11:04.304 Feed specialty group,
NOTE Confidence: 0.8689328
01:11:04.310 --> 01:11:07.550 and then in our clinics we see all
I’ll talk a little bit more about that later on. There are some cardio GCS that specialize or, you know, tend to focus on one in the indication within cardiology instead of seeing all indications. But mine is a bit more general. For research, it really depends on the project. There are some projects where I am involved from start to finish, but then there are other projects where I only do part of it and so I help develop or manage research.
protocols either for the physician

that I work with or help some other
groups figure out how to get data.

Times consenting patients

for these research studies,

I’m sometimes analyzing

their broad genetic data,

which is the an Excel sheet for the

most part that you get from sequencing.

In this excel sheet can have anywhere

between 60,200 and 20,000 rows.

You can narrow it down using

certain protocols,

but you know we would analyze

to find new jeans or new

mutations for certain indications.
I mean then, sometimes I’m helping draft a paper or a poster. Sometimes I’m only doing the statistical analysis and not really drafting the manuscript. So it depends on the project. Hope so. For program development, the two main things I tend to do are our train admin because a number of referring providers have gone up by help. You know. Develop triage Ng workflows and help them figure out you know which
patient is appropriate for which clinic,

and then we have a weekly case conference that I lead about 15 different positions and advanced practice providers.

Attend that, but up to 27 are part of it and so this is. To discuss important or difficult cases, come to you, know a consensus. If providers have differing opinions on how to follow somebody, I mean, so that’s every Wednesday for an hour. And then in terms of education or supervision, this might include clinical rotations for graduate students.
For example, the Bay Path program sends new students once in awhile. It might include genetics, education for postdoctoral fellows who are working on projects that have a genetics component. So the physician that I work with has a cardiology lab with several postdocs and PhD students. So then I would be involved from an education perspective. And then occasionally mentoring or being part of the committee for a grad students, pieces or Capstone project.
I’ll talk a little bit more about the clinical indications it used to be divided into Mendelian, which is a single gene cause of disease and non Mendelian where there are multiple factors that can increase the chance for somebody to have heart disease. But the lines are blurring many of the Mendelian conditions are being found to have multiple components in the risk, and so you may have heard of Marfan syndrome. That’s the one. People tend to hear about most commonly a lot of times you know. People are told.
If you’re tall and thin, go get evaluated for Marfan syndrome, but there’s a lot more to it than that.

Connective tissue disorders essentially include your bone and your joints in your skin, and there might be complications with bleeding in some forms.

Cardiomyopathies are structural heart diseases, so the heart muscle itself may be too big or too thin or too weak to pump blood efficiently.

Arrhythmias are most commonly called palpitations or A-fib.
but there are specific inherited conditions
NOTE Confidence: 0.83698463
where you could have cardiac based,
NOTE Confidence: 0.83698463
fainting or cardiac arrests.
NOTE Confidence: 0.83698463
Familial hypercholesterolemia
NOTE Confidence: 0.83698463
is the most well known or well
NOTE Confidence: 0.83698463
described inherited heart disease
NOTE Confidence: 0.83698463
where your cholesterol tends to be
NOTE Confidence: 0.83698463
really high from a really young age,
NOTE Confidence: 0.83698463
usually above 190 MG per DL.
NOTE Confidence: 0.83698463
So that’s you know it can be high,
NOTE Confidence: 0.83698463
but that doesn’t mean it’s
NOTE Confidence: 0.83698463
familial hypercholesterolemia.
NOTE Confidence: 0.83698463
There are certain cut offs that we
NOTE Confidence: 0.83698463
use for risk assessment and then
NOTE Confidence: 0.83698463
there are other syndromes where
NOTE Confidence: 0.83698463
the cardiac component is just one
part of it and so we might do the.
Genetic counseling or the genetics evaluation with the cardiac part
in mind and then refer to general genetics for more long term follow-up.

Non mendelian examples.
Hypertension or high blood pressure is a common one coronary artery disease
without familial hypercholesterolemia
is something we see quite often,
and then there are other structural heart diseases that come across we I
personally don’t do congenital heart defects in the newborns or infants.
That’s something either general
genetics or Pediatrics would do.
I believe I don’t do congenital heart defects.
Now that we’ve had some time to look at a few different examples,
I think it’s a good time for the first pole.
So when you think of all the different types of heart diseases,
whether it’s a cardiomyopathy or high cholesterol,
what is the estimated prevalence?
How common do you think these conditions are in the general population?
Is it quite rare that one in 10,000?
Is it one in 1001 and 500 or one and 200? Your best guess?
We get five more seconds.

Results are coming in so most of you said one in 500. The actual numbers one and 200. It's actually a lot more common than we realize when you add all of this together, and so familial hypercholesterolemia goes undiagnosed so often because people may not realize they have high cholesterol and that's about one in 200 to one and 250. So when you add up everything, that's the number we tell people when they're interested in learning.
about inherited heart diseases.

In terms of on my slide,

isn’t there you go in terms of my role?

I do a lot of the standard,

or like tasks in a session that

most other clinical genetic cancer.

Patient facing genetic counselors do.

So I want to go over this and

other speakers have covered this,

but a few things I do in addition,

which I hadn’t before,

are specifically related to.

Image Ng Records and blood tests.

And so a lot of times we

specifically require documentation from
01:18:37.990 --> 01:18:40.440 family members or medical records.

01:18:40.440 --> 01:18:41.104 You know, if they’ve had a MRI or you know

01:18:43.846 --> 01:18:46.360 blood work for their cholesterol will

01:18:46.360 --> 01:18:49.379 ask to see that you know they’ll

01:18:49.379 --> 01:18:52.312 have to give us permission to either

01:18:52.320 --> 01:18:55.875 look in the chart or send it to us,

01:18:55.880 --> 01:18:57.858 because the symptoms and heart

01:18:57.858 --> 01:18:59.442 diseases are so generic,

01:18:59.442 --> 01:19:01.420 you could have palpitations for

01:19:01.420 --> 01:19:03.010 a non genetic visan.

01:19:03.010 --> 01:19:05.585 Or you could have it as part

01:19:05.585 --> 01:19:07.005 of a genetic condition,

01:19:07.010 --> 01:19:09.488 and so the symptoms are quite vague.

01:19:09.490 --> 01:19:10.910 Cardiac arrest means something
very different from heart attack,
but people use it intermittently quite often,
and so if you tell me somebody
had a heart attack,
it was a male that had a heart attack at 55.
That’s not necessarily as concerning to me
as a male that had a cardiac arrest at 55,
and so we will often ask to look
at family members, image Ng,
or Surgical Records.
Or even an autopsy report if that’s possible,
because arrhythmia is a process of exclusion,
and so the autopsy couldn’t find
anything in a deceased family member.
But the medical examiner might
say it was likely an arrhythmia.
We will often ask the patients to get certain screenings before we do genetic testing on them. We might look at their cholesterol panel, glucose and blood pressure. Blood pressure can have an impact on many different heart diseases, including genetics. So the cardiomyopathy, sometimes there is, sometimes blood pressure is a risk factor and then the connective tissue diseases can also be impacted by blood. Pressure levels will often ask them to get an EKG or an MRI. Or calcium score,
which is essentially a CT scan to look for calcium deposits to see if they have any signs of coronary disease. And then I also sometimes call out these results. My scope is very limited in this. I can only call out certain types of results and so for a subset of patients I called them out myself. But then for most other patients I review it with the physician before calling out these results. The case example I have is for arrhythmogenic right ventricular cardiomyopathy. It’s a really long name.
It’s actually short, and nowadays it’s called arrhythmogenic cardiomyopathy. It’s one of the more rare conditions, and it’s inherited in a dominant manner, so one genetic mutation is theoretically enough for somebody to have this condition over their lifetime. Essentially, what happens in this condition is now your heart is a tissue. It’s made up of specialized Cardiac cells, but in this condition that tissue is progressively replaced with fat and scar tissue, and that affects the integrity.
It's not able to pump blood as efficiently, and so maybe it's struggling to, you know, keep a certain rhythm. You can have syncope or presyncope, which are essentially fainting and light-headedness, not the normal fainting that most children have. This you know there are differences in cardiac fainting and vasovagal. Painting you can have palpitations or sudden death and sudden. That doesn't mean that somebody is deceased, but they could be revived or resuscitated, but this is typically what we
ask for in a family history.

There are medications for treatment.

There are lifestyle modifications.

This is 1 specific example where somebody is an athlete.

Bay may get a strong recommendation to either reduce the intensity or frequency of their sport because exercise and activity can be a trigger for a rhythmia and then you know shared decision making. Such is such an important part of all our conversations. Somebody may choose to keep playing that sport but with an ICD which is like a little.
Pacemaker that helps regulate heart rhythm.

And so this particular example, the mail with this arrow here, had come into our clinic. Then 11 years ago I wasn’t part of the team. Then he came in because his son, who is down here, had a sudden cardiac arrest at 29 and did pass away from that. Genetic testing was done on the Pearl Bank, the presenting person in the family. They looked at 10 different genes and it was completely negative.
They came back to us more recently last year because another son had a cardiac arrest at 42 and was in the hospital eventually did possibly, and so you know the concern was that you know this is now clearly inherited. We don’t know what the genetic causes, cause testing was negative and there are all these other family members that were not evaluated in the past. In the past it was just that one person because he had. The connecting relative his brother had a fib, which can sometimes be a symptom and
01:23:55.523 --> 01:23:58.127 His son had the sudden cardiac death.
NOTE Confidence: 0.86358523
01:23:58.130 --> 01:24:01.180 But now we don’t know.
NOTE Confidence: 0.86358523
01:24:01.180 --> 01:24:03.460 And so one question on this,
NOTE Confidence: 0.86358523
01:24:03.460 --> 01:24:06.500 and that’s I think the next poll is,
NOTE Confidence: 0.86358523
01:24:06.500 --> 01:24:07.208 you know,
NOTE Confidence: 0.86358523
01:24:07.208 --> 01:24:09.686 there are so many you know people
NOTE Confidence: 0.86358523
01:24:09.686 --> 01:24:11.819 involved from the next generation,
NOTE Confidence: 0.86358523
01:24:11.820 --> 01:24:14.100 so this is pulled to when
NOTE Confidence: 0.8554804
01:24:14.100 --> 01:24:16.323 do you think clinical screening or
NOTE Confidence: 0.8554804
01:24:16.323 --> 01:24:18.128 treatment typically starts for the
NOTE Confidence: 0.8554804
01:24:18.128 --> 01:24:20.180 most common inherited heart disease?
NOTE Confidence: 0.8554804
01:24:20.180 --> 01:24:23.220 And I know I’ve said this is rare,
NOTE Confidence: 0.8554804
01:24:23.220 --> 01:24:25.880 but in general is it, you know,
NOTE Confidence: 0.8554804
01:24:25.880 --> 01:24:27.780 in infancy and early childhood,
NOTE Confidence: 0.8554804
01:24:27.780 --> 01:24:31.352 so between birth and five years 6 to 12.
NOTE Confidence: 0.8554804
01:24:31.352 --> 01:24:34.726 A dollar since 13 to 18 adulthood.
Early adulthood 18 to 34 or 35 years and older.

And will give five more seconds.

The 18 to 34 years. That’s what I used to think do.

And you know, a lot of times that is the experience.

I guess in cancer genetics, you know it’s primarily adult onset and that was my background.

It’s actually 6 to 12 years in cardiology we can initiate cardiac screening because we are seeing more and more that it goes undetected around age 8.
And our physicians even want to start earlier if they can.

For example, for high cholesterol, you could theoretically start treatment between age 10 and 12.

If they have really high cholesterol because the amount of time you’re exposed to high cholesterol is what determines how much risk you have for coronary disease and then for cardiomyopathies which we’re talking about screening the start around age 8 or so, and you know we plug them in earlier, and so in this particular family.

Like there were many individuals that could benefit from screening even if
there is no genetic cause identified, you would want to screen in the close relatives with EKG’s or Mris in this case.

And so the things we talked about for all of them included the genetic test results from 10 years ago, which were negative know what is their value in repeating that testing now. The answer is yes. We found out that one of the children actually ended up having some genetic testing few years ago, and it was an uncertain result. The VUS is a variant of uncertain significance where there is a variant,
but we just don’t have enough information on it to know whether it’s the cause of the condition or whether it’s completely benign. We may be having just seen it enough number of times before, and so we went over those results. Logistic issues. The 42 year old who had the heart cardiac arrest recently was in a completely different hospital and so we had to figure out how to get a sample which physicians to coordinate with where to even send the testing. Would insurance cover it or not? Thankfully,
we have some free genetic testing options in cardiology that we're able to access for a lot of situations, and so you know that was not a big challenge for us in this case.

That genetic testing from the 42 year old did identify two VUS is the one that had been identified before and another one. So going over the fact that it's still, you know, an uncertain result. Is there any utility in testing other people? We do something called segregation analysis which has a research component
where we're trying to see is it tracking with symptoms in a family.

And then you know, we have to figure out who is the best person to.

Best in this scenario, if we want to do segregation analysis and then psychosocial issues,

the mom of the two sons who passed away, you know she had not been evaluated in the past and so there was a lot of guilt and frustration over the fact that you know there was no follow up for her side of the family.

Clinically, there had not been a
reason previously, but you know, obviously we’re redoing everything at this point and so the focus on one side of the family I had to shift from looking at. All the relatives who are closely related to the individuals that had the sudden cardiac arrest and death. I don’t think we have too much time for the research example. I’m just going to say that you know my role really depends on the project, and these projects can take years. This was started in. This particular example was started in.
2015 and we’re just about submitting revisions for a publication. It started off with one symptom and now you can see from the different colors there are different symptoms in different people. Two different genetic mutations that we’re tracking so it can take a lot of time. But it’s you know, a very enriching experience, and so that’s where I leave it. If we have time for questions, I’m happy to take them. Or you can email me or I’ll be around at the end as well. Thank you.
Things are pretty great talk

and there were a couple

of questions for you. I think.

Same with Julie if I could just
direct you to the Q&A portion.

And of course at the very end will
have more time to talk about it,
but I'll let I think it’s Samantha.

You’re up next.

Right?

Nobody see my screen. Excellent,
so my name is Sam.

I work in the genetics
department here at Yale.
You may have heard some folks say clinical genetics or clinical genetic counselor. That’s my department, so I’ll kind of go into what we do and how we differ maybe from other specialties? Just briefly on my background, I went to undergrad at UConn go Huskies. I then went to the University of Pittsburgh for Graduate School. Created in 2017, I took a job at Connecticut Children’s where I was a Jack of all trades. I was involved in pediatric genetics clinic. Take Children’s Hospital so our pediatric patients.
I also saw patients in the neurology clinic so I was doing a little bit of neurology as well. Also doing a utilization management type of role where there was essentially a consultation service. They would other providers in different specialty areas would contact me. Say hey, what’s the best genetic test for XY and Z symptom or for this patient and I would kind of help navigate that. Process. I also did a little bit of qualitative research there too,
and just last year I tried to simplify my role as being more of a general genetics genetic counselor. So here working at the School of Medicine. So briefly. General Genetics is kind of a catchall phrase. We really see individuals with genetic conditions really throughout the lifespan. Arbiter was talking about. She sees patients and they have Cardiology manifestations, Cancer genetic counselors have patients that they’ll see with a Personal or family history of cancer.
We see pretty much everything else outside of that, so we don’t necessarily specialize in a disease area or a group of diseases. We see patients from birth until the oldest patient I’ve ever seen was 85 years old. So we see, you know, throughout the lifespan, for sure. General genetics can sometimes be broken up into pediatric and adult genetics, depending on the health care system and how it’s broken down. We here at Yale we just works called General Genetics.
One thing I really like about general clinical genetics is we were the folks that kind of manage the ultra rare diseases. So the cases where there are 15 reported cases in the literature or what have you. So we have the opportunity to serve those patients. The goal for us is we’re really trying to answer this question. Is there an underlying or a unifying diagnosis for a person’s medical or family history? So I kind of have that emphasized down here in this little pedigree.
So this was a patient who had two, you know, seemingly unrelated medical issues, low calcium in her blood, and a congenital heart defect with a father that had a history of a cleft pallet so they don’t really seem related. From a medical standpoint, but there’s actually a pretty common genetic condition that you know that’s almost pathognomonic for that condition. So we see like I said, we see a lot of different things. One of the some of the more common
referrals will see are folks who aren’t little kiddos who aren’t meeting their developmental milestones. Folks that have a diagnosis of autism or intellectual disability. Children who have congenital anomalies or congenital structural differences. Folks that have inborn errors of metabolism are not really going to get into the meat and potatoes of today, but those folks have a hard time breaking down certain fats, proteins, or carbohydrates. And also many control disorders. Mitochondria, the powerhouse of the cell. As we all know.
There are specific management condition options for those patients that we follow and then also connective tissue disorders that are put out talked about.

Just a minute ago. So I’m just going to talk to you a little bit about the nuts and bolts of what we do on a daily ish basis. So I have three half day clinics where I will see patients for a variety of indications that I just talked about. I see them with a Jeanette Assist and I think it may have talked about this briefly.
work with physician who has either specialized training in a special disease.

For her cardiology for us we work with geneticists.

We see probably an average of 20 patients a week, so it’s a pretty good volume.

We also have the opportunity to do inpatient consultations, so if there is a baby that’s born with congenital structural differences and the team in the inpatient unit wants to start working them up for a genetic cause, we’ll go and do a consultation for them for that.
And what’s really nice is that in general genetics we have a bunch of different types of healthcare professionals working with us, so not only genetic counselors and geneticists, but nurses dieticians like I sent for those metabolic conditions where there might be certain dietary management options. We also have social workers that work with us really closely and doctors in other specialties that we work with pretty closely as well. We also work with researchers.
01:36:21.965 --> 01:36:25.410 genetics here at Yale we have.

NOTE Confidence: 0.8635221

01:36:25.410 --> 01:36:26.376 Researchers you know,

NOTE Confidence: 0.8635221

01:36:26.376 --> 01:36:27.986 kind of at our disposal,

NOTE Confidence: 0.8635221

01:36:27.990 --> 01:36:31.198 which is really nice too to get patients

NOTE Confidence: 0.8635221

01:36:31.198 --> 01:36:33.778 involved in research if they like.

NOTE Confidence: 0.8635221

01:36:33.780 --> 01:36:35.916 Some of the other admin stuff

NOTE Confidence: 0.8635221

01:36:35.916 --> 01:36:38.582 that we do when we’re not seeing

NOTE Confidence: 0.8635221

01:36:38.582 --> 01:36:41.291 patients like Julie said we do a

NOTE Confidence: 0.8635221

01:36:41.378 --> 01:36:43.989 lot of pre charting in case prep.

NOTE Confidence: 0.8635221

01:36:43.990 --> 01:36:46.228 We work on genetic testing efforts

NOTE Confidence: 0.8635221

01:36:46.228 --> 01:36:49.353 so it’s a little bit harder to get

NOTE Confidence: 0.8635221

01:36:49.353 --> 01:36:51.293 genetic testing covered for some

NOTE Confidence: 0.8635221

01:36:51.293 --> 01:36:53.810 of the rare things that we see,

NOTE Confidence: 0.8635221

01:36:53.810 --> 01:36:55.322 I think insurance companies

NOTE Confidence: 0.8635221

01:36:55.322 --> 01:36:56.834 are slowly coming around.

NOTE Confidence: 0.8635221

01:36:56.840 --> 01:36:59.304 It’s not as clear cut sometimes as you
01:36:59.304 --> 01:37:01.474 know how particular medical management

01:37:01.474 --> 01:37:04.444 would change for a particular patient.

01:37:04.450 --> 01:37:05.150 And so,

01:37:05.150 --> 01:37:06.200 like I said,

01:37:06.200 --> 01:37:07.600 insurance authorizations are a

01:37:07.600 --> 01:37:09.350 part of that as well,

01:37:09.350 --> 01:37:11.100 and because of our results,

01:37:11.100 --> 01:37:12.850 sometimes they’re little in depth,

01:37:12.850 --> 01:37:14.600 and because we see so

01:37:14.600 --> 01:37:16.280 many different types of things,

01:37:16.280 --> 01:37:18.485 it usually takes us some legwork to

01:37:18.485 --> 01:37:20.866 be informed and to be knowledgeable

01:37:20.866 --> 01:37:22.861 enough on a particular result

01:37:22.929 --> 01:37:24.861 before calling out a result or

So we do a lot of digging medical research on our end. Before communicating with the patient. So I'm going to talk real quick about a patient that we saw I saw with a Doctor Who is an OBGYN and a genetic test. Xi'an, I saw this patient. She is an 8 year old female. She had come to us because she wasn't growing the right way wasn't growing the right way or growing the way that her pediatrician thought was appropriate. Upon taking some history we learn that she has some mild learning difficulties in school.
I didn’t throw in a pedigree here but there wasn’t any significant family history for us to be cognizant of. And the two tests that we ordered are called chromosome analysis and a chromosomal microarray, both of which are really addressing the question of does a person have the correct amount of genetic material? So I’m going to throw up our poll. So I’m wondering, and it’s OK if you guys don’t know this. No pressure, but does anybody know the most common genetic cause of short stature in females?
01:38:52.210 --> 01:38:54.418 We'll just let that go.
NOTE Confidence: 0.82168144
01:38:57.750 --> 01:38:59.647 I keep feeling bad 'cause I know
NOTE Confidence: 0.82168144
01:38:59.647 --> 01:39:01.419 I'm cutting people off who might
NOTE Confidence: 0.82168144
01:39:01.419 --> 01:39:02.914 be seriously thinking about it,
NOTE Confidence: 0.82168144
01:39:02.920 --> 01:39:04.636 but I'll stop in five seconds.
NOTE Confidence: 0.9325584
01:39:08.030 --> 01:39:09.059 OK, I'm sorry.
NOTE Confidence: 0.81679416
01:39:12.210 --> 01:39:15.098 OK, what do we have?
NOTE Confidence: 0.7857974
01:39:15.100 --> 01:39:16.726 Turner syndrome is correct.
NOTE Confidence: 0.7857974
01:39:17.478 --> 01:39:20.110 So I'm going to be talking a
NOTE Confidence: 0.7857974
NOTE Confidence: 0.7857974
01:39:22.570 --> 01:39:25.014 Those other conditions do
NOTE Confidence: 0.7857974
01:39:25.014 --> 01:39:27.458 have short staffed shahraz.
NOTE Confidence: 0.7857974
01:39:27.460 --> 01:39:29.228 A clinical features well,
NOTE Confidence: 0.7857974
01:39:29.228 --> 01:39:31.880 but Turner syndrome is by far
NOTE Confidence: 0.7857974
01:39:31.962 --> 01:39:34.545 the more the most common and this
1:39:34.545 --> 1:39:37.868 is a picture of not our patients
1:39:37.868 --> 1:39:39.996 karyotype or chromosome analysis,
1:39:40.000 --> 1:39:43.136 but as an example of one for
1:39:43.136 --> 1:39:44.480 classical Turner syndrome,
1:39:44.480 --> 1:39:48.260 folks are supposed to have 46 chromosomes
1:39:51.420 --> 1:39:53.736 I only have one X chromosome.
1:39:56.360 --> 1:39:58.502 It occurs in approximately 1 in
1:39:58.502 --> 1:40:00.654 2000 live births, so with this
1:40:00.654 --> 1:40:03.160 test result we’re able to say yes.
1:40:03.160 --> 1:40:06.373 We answer the question of why this
1:40:06.373 --> 1:40:08.978 patient isn’t growing the right way.
1:40:08.980 --> 1:40:10.882 You know there are other features
1:40:10.882 --> 1:40:12.531 that are associated with Turner
Things like congenital heart defects, congenital renal anomalies, or how the heart and kidneys are shaped. There are some increased risks of particular conditions like diabetes, thyroid problems, the most striking thing that comes along with Turner syndrome. When we diagnosis in a young girl is typically they have streak ovaries which is just a fancy way of saying very underdeveloped ovaries and they result in diminished fertility. So you know we had the opportunity to kind of disclose this result and we see Turner syndrome pretty
regularly in clinic, so we were able to kind of say, OK, we have an understanding for why this patient isn’t growing the way we were expecting, but we also now have these other medical things to follow up on. And that’s kind of where you know genetic counseling and genetic counselor in conjunction with a lot of other medical providers is really helpful so you know what I as a genetic counselor will do is when I see the patient for a first time, one of the first things I want to
01:41:29.898 --> 01:41:32.598 do is figure out you know what
NOTE Confidence: 0.880551
01:41:32.598 --> 01:41:34.226 their concerns are like.
NOTE Confidence: 0.880551
01:41:34.230 --> 01:41:35.166 Julie said,
NOTE Confidence: 0.880551
01:41:35.166 --> 01:41:37.974 creating and establishing that repor with
NOTE Confidence: 0.880551
01:41:37.974 --> 01:41:40.079 them understanding of you know what?
NOTE Confidence: 0.880551
01:41:40.080 --> 01:41:43.356 Brings them to see us with their
NOTE Confidence: 0.880551
01:41:43.356 --> 01:41:45.831 interests are collecting all of
NOTE Confidence: 0.880551
01:41:45.831 --> 01:41:47.310 that important history.
NOTE Confidence: 0.880551
01:41:47.310 --> 01:41:49.958 Discussing the risks, benefits,
NOTE Confidence: 0.880551
01:41:49.958 --> 01:41:53.268 and limitations of genetic testing.
NOTE Confidence: 0.880551
01:41:53.270 --> 01:41:56.450 How we return these genetic results
NOTE Confidence: 0.880551
01:41:56.450 --> 01:41:59.771 is usually something that I will
NOTE Confidence: 0.880551
01:41:59.771 --> 01:42:01.439 do usually independently.
NOTE Confidence: 0.880551
01:42:01.440 --> 01:42:03.666 And in that for Turner Syndrome
NOTE Confidence: 0.880551
01:42:03.666 --> 01:42:04.408 in particular,
NOTE Confidence: 0.880551
01:42:04.410 --> 01:42:07.518 there are really good medical management
NOTE Confidence: 0.880551
01:42:07.518 --> 01:42:11.068 guidelines that we can kind of defer to.
NOTE Confidence: 0.880551
01:42:11.070 --> 01:42:13.590 Discussing things like inheritance
NOTE Confidence: 0.880551
01:42:13.590 --> 01:42:17.370 and recurrence risk for the family
NOTE Confidence: 0.880551
NOTE Confidence: 0.880551
01:42:19.290 --> 01:42:20.850 And that's you know,
NOTE Confidence: 0.880551
01:42:20.850 --> 01:42:23.190 a pretty challenging type of dynamic,
NOTE Confidence: 0.880551
01:42:23.190 --> 01:42:25.398 especially in clinical genetics
NOTE Confidence: 0.880551
01:42:25.398 --> 01:42:27.606 that might not be.
NOTE Confidence: 0.880551
01:42:27.610 --> 01:42:29.738 There's a little bit of a nuance
NOTE Confidence: 0.880551
01:42:29.738 --> 01:42:32.373 and how to do some counseling for
NOTE Confidence: 0.880551
01:42:32.373 --> 01:42:34.839 adolescents and children who are of
NOTE Confidence: 0.880551
01:42:34.912 --> 01:42:37.586 the age of being able to understand
NOTE Confidence: 0.880551
01:42:37.586 --> 01:42:39.853 what we're talking about and how
NOTE Confidence: 0.880551
NOTE Confidence: 0.8761172
01:42:43.450 --> 01:42:45.788 And for our for this particular case,
we have a great multi disciplinary clinic

we were able to refer the patient to.

Where we would continue to manage them.

Times clinical genetics.

We kind of think of as a primary care

Center for folks with genetic conditions,

so we make sure that patients are following

up with the endocrine doctor or cardiologist,

or getting all of the image in that

needs to happen, or what have you

for a particular genetic condition.

And one thing that we really focus on

two is how to communicate that diagnosis

with all of the right people. How are we?

You know, for pediatric patients,

is there a necessity to disclose
these results to a school? Because if it’s going to impact their learned patience, learning or added justification to get extra services in the school setting, that’s something that we regularly do then. Also, communicating these results to other family members and other medical providers, primary care, and pediatricians I’ve found have. I don’t have as much of a breadth of understanding of genetic conditions and how they can manifest in children an adult, so that’s something that will, often, you know.
kind of explain to them through different types of documentation. So yeah, so that’s all I have. I would be more than happy to. I don’t think I’m running overtime. My genetic counselor counterpart, Emily. She’s going to be answering some questions in the Q&A this afternoon on my behalf. I have to go over to the clinic, but if anyone is interested in reaching out to me personally, my email is there and would be more than happy to answer any questions. Thank you thanks.
my supervisors at my genetic counseling program used to call clinical genetics, boss level genetics and inflation reminded me why. Good, I'll hand it over to Anthony. Thanks again. Alright, so my name is Anthony Porto. I am aging that counselor here at the Yale DNA lab until giving you. I'll be giving him more of a perspective and what that role is kind of like. So as a quick outline, I'll be giving
a brief introduction to myself, going over kind of a day as a laboratory GC is like and then giving a quick case example for that. So I did my graduate studies in genetic counseling at Northwestern University. This position at Yale is my first into graduating as I graduated in the class of 2020. So my position here is primarily just to act as agent counselor for the lab and I'll get into more about what the specific details are that are as compared to a clinical GC as we go. And so my really main point on this that I wanna talk about is just.
What are the responsibilities as well as the utility of having a genetic counselor in the lab to coordinate with the clinical genetic counselors? Before we get started all about, I want to hear what you think are possible duties that a lab GC could have, so will give you a quick poll to see what you all think. Oh, and you can select multiple choices. You don’t just have to pick one for the best question. This one involves a little more reading, so maybe I’ll go.
Sorry, I made a long question.

We can say.

Five more seconds.

OK.

So. Lot of answers for a lot of them,

The short answer is that all of these potentially can be a role of a lab genetic counselor.

However, there are some labs that are starting to expand into that role,

so want to point out that that
01:47:44.980 --> 01:47:47.026 was a possibility for people that
NOTE Confidence: 0.85156297
01:47:47.026 --> 01:47:49.252 you could all be aware of it.
NOTE Confidence: 0.86107075
01:47:53.770 --> 01:47:56.605 So as a day in my position,
NOTE Confidence: 0.86107075
01:47:56.610 --> 01:47:58.150 specifically here at Yale,
NOTE Confidence: 0.86107075
01:47:58.150 --> 01:48:01.060 I don’t have any direct patient contact.
NOTE Confidence: 0.86107075
01:48:01.060 --> 01:48:03.514 My role is specifically to facilitate
NOTE Confidence: 0.86107075
01:48:03.514 --> 01:48:05.889 with the clinical GCS what the
NOTE Confidence: 0.86107075
01:48:05.889 --> 01:48:08.553 laboratory can do and help them in that
NOTE Confidence: 0.86107075
01:48:08.623 --> 01:48:11.188 which involves helping with ordering,
NOTE Confidence: 0.86107075
01:48:11.190 --> 01:48:13.315 testing, helping with getting insurance
NOTE Confidence: 0.86107075
01:48:13.315 --> 01:48:15.859 coverage and just making sure that
NOTE Confidence: 0.86107075
01:48:15.859 --> 01:48:17.644 the overall process of getting
NOTE Confidence: 0.86107075
NOTE Confidence: 0.86107075
01:48:19.690 --> 01:48:22.180 So I would say I have.
NOTE Confidence: 0.86107075
NOTE Confidence: 0.86107075
NOTE Confidence: 0.86107075
01:48:25.670 --> 01:48:27.620 The first is helping the insurance
NOTE Confidence: 0.86107075
01:48:27.620 --> 01:48:29.360 team and working with the
NOTE Confidence: 0.86107075
01:48:29.360 --> 01:48:31.245 providers to get testing authorize.
NOTE Confidence: 0.86107075
01:48:31.250 --> 01:48:33.060 The second is coordinating with
NOTE Confidence: 0.86107075
01:48:33.060 --> 01:48:34.870 providers more generally UN testing
NOTE Confidence: 0.86107075
01:48:34.928 --> 01:48:37.436 and that can be on the type of
NOTE Confidence: 0.86107075
01:48:37.436 --> 01:48:40.330 testing or how to order it or however,
NOTE Confidence: 0.86107075
01:48:40.330 --> 01:48:42.458 and the last thing is really
NOTE Confidence: 0.86107075
01:48:42.458 --> 01:48:44.286 working with the laboratory staff
NOTE Confidence: 0.86107075
01:48:44.286 --> 01:48:46.416 and sort of quality control
NOTE Confidence: 0.86107075
01:48:46.416 --> 01:48:48.364 continuing improvement of the lab
NOTE Confidence: 0.86107075
01:48:48.364 --> 01:48:50.492 and just making sure that the lab
NOTE Confidence: 0.86107075
01:48:50.492 --> 01:48:52.840 policies and procedures are moving
NOTE Confidence: 0.86107075
01:48:52.840 --> 01:48:54.880 as smoothly as possible.
NOTE Confidence: 0.86107075
01:48:54.880 --> 01:48:55.960 So not surprisingly,
I don’t work very independently.

I’m a part of the team here at the DNA lab, so I work with a lot of people constantly, including the technicians who run the actual testing.
The analysts who look over and then report out the genetic data.
The director is here at the lab as well as the team who gets the insurance off and tries to get that testing approved.
So we’ll start with going over my first main thing, which is getting testing authorized.
I think it’s pretty safe for us all to agree that insurance can
be difficult sometimes they they don’t always want to pay for things, even if it’s something that we feel like they should be paying. So as a response to that, my one of my main duties is to help in order to make sure that we can get that covered and the way that works is that insurance covers things based on what are called. CPT code or current procedural terminology codes, So what we do is we tailor our testing to use specific CPT codes and So what we do is we tailor our guidelines as well as what the
01:50:04.407 --> 01:50:06.858 provider is talking about in their notes in any documentation that we have as to why they think the testing is important and the reason we do this is that when we work in tandem like that with the clinical team, we found that we have. Better success at getting insurance to actually cover the testing. Sometimes it’s not that straightforward though, and I’ll still need to go out. Call the insurance. Say hey you guys are giving us a difficult time getting discovered what’s going on?
What can we do to work this out?

And so that's another big part of what I do here.

Lab and I also like.

I mentioned earlier, talk with the providers about you know how to go about that CPT coding.

What sort of genes were thinking of? Based on what their indication is and what they've said in the note.

So specifically working with providers, one of my main functions is really just acting as a liaison between them in the lab in general.

So a lot of what I do is just sort
NOTE Confidence: 0.87586427
01:51:08.048 --> 01:51:09.943 of communicating with them through
NOTE Confidence: 0.87586427
01:51:09.943 --> 01:51:13.012 any way that they need help in any
NOTE Confidence: 0.87586427
01:51:13.012 --> 01:51:15.226 questions that they can have answered.
NOTE Confidence: 0.87586427
01:51:15.230 --> 01:51:17.614 So a good example of this is that
NOTE Confidence: 0.87586427
01:51:17.614 --> 01:51:20.320 I get a lot of emails from you all
NOTE Confidence: 0.87586427
01:51:20.320 --> 01:51:23.110 as GCS as well as other providers.
NOTE Confidence: 0.87586427
01:51:23.110 --> 01:51:24.750 Just asking you know, hey,
NOTE Confidence: 0.87586427
01:51:24.750 --> 01:51:26.390 I work at this testing.
NOTE Confidence: 0.87586427
01:51:26.390 --> 01:51:28.948 2 weeks ago, month ago, whenever it was.
NOTE Confidence: 0.87586427
01:51:28.948 --> 01:51:32.000 Can I get an update on what the product,
NOTE Confidence: 0.87586427
01:51:32.000 --> 01:51:33.866 the processes and still look into?
NOTE Confidence: 0.87586427
01:51:33.870 --> 01:51:35.420 OK, we got the sample.
NOTE Confidence: 0.87586427
01:51:35.420 --> 01:51:37.286 Have we gotten insurance coverage yet?
NOTE Confidence: 0.87586427
01:51:37.290 --> 01:51:39.446 If we’ve gotten insurance how we started
NOTE Confidence: 0.87586427
01:51:39.446 --> 01:51:41.019 the actual sequencing process yet,
and if so, how long do I expect for that to be turned around and I’ll try to give them an update on where that all is, as well as give them a timeline and when they can expect that result to come back. In addition, it’s giving in addition to that, I go to the clinical case conference that the Department of Genetics has that Sam and Emily also go to, and that I’m sort of able to give the lab’s perspective on any patients that they’re talking about in that you know, what would we recommend is the procedure may be what we think would
be the ideal way to go about that

testing and just sort of give more of

a comprehensive view and help them in

deciding how to manage that placement.

And again,

like I mentioned earlier,

a big part of this is trying

so we can make that all line up,

but also do so afterwards.

Sort of two work with them again,
just to make sure that that insurance piece is covered as best as we can.
And then the last thing that I want to touch on is more of my work internally in the lab, so this is really where there’s a lot of different opportunities for lab GC that come from that list that I had in the poll. So one of the main things that I do is quality control, and there’s a lot of different ways in which that I support that, but one of the ones that I think is best and sort of shows the utilization of a genetic counselor specifically.
I’ve helped you develop phrases. For specific conditions that we see often come through the lab so you can see below my quality control on the slide. I have a little blurb talking about sickle cell disease and that was developed based on both my knowledge of sickle cell disease from my training as well as research. And this has helped the lab to standardize our reporting because a lot of the reporting the way that we do it. Is that we do the sequencing and then one of several analysts on our team will look at that to determine if
there’s any genetic changes and if there are,

what is the cause of that?

And so a lot of this writing can be
different from analyst to analyst
because we all think differently.

We all act differently,
so while it’s similar,
it’s a little bit different from
person to person,
so our goal was to make it all
standardized about our reports,
come out saying the same thing every time.
Another really cool aspect that
I get to do here in the lab is
what’s called gene curation.
So for those who don’t know,
Gene creation is the process of determining whether a gene causes a disease or not.

An I have a little table here sort of demonstrating what part of that process is.

So basically what you do is we want to develop a list of genes for each, either symptom or disease, so that when we get that from a provider, we know all the list of genes that we need to look at.

In order to make sure that we’re not missing any potential genetic cause.

So what we do is we look through the literature.
websites and we tried to determine. What those genes for that condition would be? And this really helps us build that list so that every time that we get one of those orders, we make sure we're covering all the genes that could be causing it. And this sort of curation is really important, because as all of you know, genetics is rapidly evolving and changing. So it’s very important to constantly be updating these lists constantly, be checking for new jeans and making sure that we have a comprehensive
list and we’re not missing.

And the last thing that I really do day

today is I support the very interpretation

and the actual writing of these reports

that we send out to the clinical staff.

similar to Gene creation is sort of
determining whether that change that we’re
seeing in a gene actually causes the disease,
or if we don’t think it causes the disease.

If it’s what we call benign,

so on the right bottom corner you can see

sort of the table that a CMG the American
College of Medical Genetics has created
in order for you to determine whether or not a change in one of those jeans. Will cause disease and so we go through this and look at the criteria of the change and trying to decide whether or not that is causing the disease. And then we can write up a report based on what we find to say hey, this is what we found. We either think this particular change causes a disease. Here’s the disease. Here’s some information about it, we can say, hey, we weren’t able to find anything for this patient.
Maybe in the future we can.

But as of right now, we unfortunately don’t have a genetic cause.

The last thing I want is just go over a case example.

This is very insurance pacing and the reason I chose this specifically is I think it shows how important it is to have someone with clinical understanding involved in the insurance process because it can be very difficult sometimes, so the patient SF was seen for cardiac surgery for an ascending aortic aneurysm, and they ordered genetic testing, so her testing was initially decided.
Denied by the insurance and the ordering provider called them and asked them, you know, what can we do about this? How can we get this approved and they recommended using different codes than what the labs originally coded for. So OK, that’s straightforward and easy enough. We resubmit it for insurance. All we use the codes that they request and they come back saying that it needs additional information. So we’re all sitting around like, OK. We did exactly what you asked. What’s going on. So I hop in. I called the insurance company themselves.
01:57:58.970 --> 01:58:01.770 I discussed with them and they basically say, yeah, well,
01:58:01.770 --> 01:58:04.920 we actually told the provider is that
01:58:04.920 --> 01:58:07.020 we would maybe approve these codes,
01:58:07.020 --> 01:58:08.770 but what you originally submitted wasn’t actually sufficient.
01:58:08.770 --> 01:58:12.492 So I go back to the order divider
01:58:12.492 --> 01:58:14.370 and I tell them OK.
01:58:14.370 --> 01:58:17.170 It sounds like they will approve these codes,
01:58:17.170 --> 01:58:19.954 we just need to give them more information
01:58:19.954 --> 01:58:22.068 proving why this is so important.
01:58:22.070 --> 01:58:24.324 And so I hope the provider write
01:58:26.900 --> 01:58:29.182 To address all of their additional questions
01:58:29.182 --> 01:58:31.967 and we send that to the insurance company,

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which finally results in it getting approved.

So without all of that communication and sort of understanding of both the processes and the clinical importance, I think getting that testing approved may have never happened. So I know that was kind of fast. I know we’re also kind of behind on time, but I will be around to answer any questions as well, so please let me know if you have anything.

Thanks Anthony, that was good.

I think there was one question in the chat section about insurance and our various interactions with insurance companies. I’m not sure if that participant who
01:59:15.770 --> 01:59:18.465 asked was directly thinking about cancer

01:59:18.465 --> 01:59:20.710 or reproductive for laboratory GCS,

01:59:20.710 --> 01:59:24.046 but we’re butting up right into our break

01:59:24.046 --> 01:59:27.890 time and there’s a lot of information today,

01:59:27.890 --> 01:59:30.592 so I do want to give people

01:59:30.592 --> 01:59:32.920 some time to decompress.

01:59:32.920 --> 01:59:35.272 I think I’ll make an executive

01:59:35.272 --> 01:59:37.288 decision to shorten the break

01:59:37.288 --> 01:59:39.526 from 15 minutes to 10 minutes,

01:59:39.530 --> 01:59:43.022 but feel free to grab a cup of coffee.

01:59:43.030 --> 01:59:44.980 Everyone. I’ll start the timer.

01:59:44.980 --> 01:59:46.920 Let me share my screen.

01:59:53.260 --> 01:59:55.888 And we can. Return.

01:59:59.630 --> 02:00:02.770 You guys can see that right? Perfect.

02:09:56.200 --> 02:09:56.930 My gosh.
And realize there would be noise coming from OK. Alright, and we're ready for Part 2.

And I'm not sure who is gonna share their sides as Maria you first and then.

Let me go ahead and share my screen. Perfect everybody see. Looks good. OK so hi everyone, my name is Maria Geyer. I am a genetic counselor. I work at the University of Connecticut. I AM what you call someone with a mixed position where I am mostly focused on academia and education, but I do have some clinical duties over on the medical campus.
So because of my role in education and my involvement in helping, you can’t start their own genetic counseling program.

I’m going to talk to you a little bit today about applying to graduate programs for genetic counseling in general some. Some tips and tricks, some do’s and don’ts, maybe in order to maybe Taylor this a little bit better to who’s in the audience today?

I have a couple of questions from polls that I wanted to throw up here just so I can get a sense of.
NOTE Confidence: 0.8376721
02:11:21.232 --> 02:11:21.734 So Alex,
NOTE Confidence: 0.8376721
02:11:21.734 --> 02:11:23.746 we want to throw that first one up.
NOTE Confidence: 0.8722717
02:11:26.740 --> 02:11:29.012 I want to know how many of you
NOTE Confidence: 0.8722717
02:11:29.012 --> 02:11:30.428 will be applying to genetic
NOTE Confidence: 0.8722717
02:11:30.430 --> 02:11:31.482 counseling programs this fall,
NOTE Confidence: 0.8722717
02:11:31.482 --> 02:11:33.060 or if this is something that
NOTE Confidence: 0.8722717
02:11:33.113 --> 02:11:34.643 you’re considering doing for this
NOTE Confidence: 0.8722717
02:11:34.643 --> 02:11:35.978 upcoming year, not attending,
NOTE Confidence: 0.8722717
02:11:35.978 --> 02:11:38.491 but applying because we all know that
NOTE Confidence: 0.8722717
02:11:38.491 --> 02:11:41.155 the process for this can be quite long.
NOTE Confidence: 0.8722717
02:11:41.160 --> 02:11:43.057 So if you are let us know,
NOTE Confidence: 0.8722717
02:11:43.060 --> 02:11:45.229 or even if you’re unsure, maybe a maybe.
NOTE Confidence: 0.905396
02:11:55.490 --> 02:11:57.930 Alright, and a few more seconds.
NOTE Confidence: 0.8822768
02:12:04.460 --> 02:12:06.050 Great, so more than half of
NOTE Confidence: 0.8822768
02:12:06.050 --> 02:12:07.370 you are planning on attempting
to apply this coming fall, so that’s great.

So you’re in the right spot in terms of listening and for those who aren’t planning on it might just be that you’re planning on it for you know a couple of years down the line, or you’re just really trying to see if genetic counseling today’s is kind of a good fit for where you want to go career wise.

So I think you’re also in a good spot and I think there’s one more poll that I wanted to to throw up here, just that I could get some more information.

I was interested to know how many of
you had applied to a genetic counseling program previously and maybe not been successful in matching with the program, because sometimes I mean more often than not. That is what happens that people don’t get in on their first round, so it can be helpful to me to know if that really applies to. Most of you, or maybe not, many of you and I can maybe give you some more info on that. OK, alright so for a lot of you this is new turf, so that’s cool and that that again helps me to kind of tailor things around what’s happening here.
So alright, so we’re going to talk about the process of grad school. We have about 1/2 an hour between Colleen and myself. Will try to take the 1st 15 minutes and there’s a lot to say, so I’m going to go pretty fast, but hopefully if you do that survey at the end, you’re going to get a recording and you can go back and listen. If you have some holes in what you’ve heard, so a few steps to talk about, you know. In terms of applying to program step one is know yourself right?
So you kind of have to know that this is going to be a career that’s right for you and there are different ways we’re going to talk about in terms of how to figure that out. But you being here today is obviously a great first step. Let’s learn about what life is like in different areas of genetic counseling. It’s not all just direct patient care anymore. You can have a vast array of different experiences as a genetic counselor so you know there are different ways to do this. You can reflect on your needs and your goals like where you want to be in life.
Talk to people.
Listen to folks like us.
Seek out some other people who might have some expertise in this area.
So really, you know the first step is to kind of sit with yourself.
In the second step, you know once you get past that and you’re like, hey, genetic counseling is something I really want to do. You want to know the programs right? So who’s out there? How are they different? How are they similar?
So although many of them are similar, you know each program is going to have kind of its unique spin or niche. There are some programs that focus much more heavily on psychosocial skills and that whole counseling aspect of it. There are some that focus much more on research, so maybe you have a desire to do research, but you really like genetic counseling like there are ways to intermingle those of you. As you’ve heard from Arcata. Technology, so maybe you want to learn more about next Gen sequencing. Maybe you know industry type
career with genetic counseling is your thing and there are programs that are just a little bit more in tune to things like that. You know, programs can different types of the in terms of the type and amount of clinical exposure you have. When you start your clinical rotations, how long you’re there and patient populations based on location. So there you know depending on where your program is geographically located, they might serve different populations and some might interest you more.
Or you may have a passion for a particular population. So I encourage you to do your homework about programs right? So no other programs. When you’re trying to select a program so you know the programs that are out there now and I gotta make your small list about, you know which ones interest you, there’s a lot of different factors. And aside from what I just said, where they can have kind of their own niche and specialty areas, they’re going to differ in some other ways too. So educational delivery.
So how are you going to learn that these programs?

Most programs are face to face?

You gotta be on campus and beyond sight,

but some are online,

some are hybrid and you'll hear from some

students who attend programs like those.

How big is a class size?

Is that important to you?

Do you want to have 20 classmates or do you want to have three?

Can be a very different experience depending on what you're comfortable with.

Cost is obviously something that can be prohibitive to a lot of people that...
02:16:17.362 -- 02:16:19.150 has to be considered into the equation,
NOTE Confidence: 0.8618158
02:16:19.150 -- 02:16:21.418 so you’re going to want to know tuition fees.
NOTE Confidence: 0.8618158
02:16:21.420 -- 02:16:22.926 You’re going to want to know,
NOTE Confidence: 0.8618158
02:16:22.930 -- 02:16:24.190 do they have scholarships available?
NOTE Confidence: 0.8618158
02:16:24.190 -- 02:16:26.206 What type of financial aid can they offer?
NOTE Confidence: 0.8618158
02:16:26.210 -- 02:16:27.470 What’s the cost of living?
NOTE Confidence: 0.8618158
02:16:27.470 -- 02:16:29.136 You know you may have always pictured
NOTE Confidence: 0.8618158
02:16:29.136 -- 02:16:30.739 yourself in a program in Boston,
NOTE Confidence: 0.8618158
02:16:30.740 -- 02:16:32.672 but can you afford to live in
NOTE Confidence: 0.8618158
02:16:32.672 -- 02:16:34.850 Boston but go to school full time?
NOTE Confidence: 0.8618158
02:16:34.850 -- 02:16:36.684 Is your program a program that allows
NOTE Confidence: 0.8618158
02:16:36.684 -- 02:16:38.538 you to work while you’re there?
NOTE Confidence: 0.8618158
02:16:38.540 -- 02:16:40.245 So all these things have to
NOTE Confidence: 0.8618158
02:16:40.245 -- 02:16:41.100 be considered location?
NOTE Confidence: 0.8618158
02:16:41.100 -- 02:16:42.520 We kind of touched on.
NOTE Confidence: 0.8618158
02:16:42.520 -- 02:16:42.803 Yes,
some can be in cities, some can be in rural areas, is a program close to where your family is, and maybe that’s going to be your housing while you’re there. Do they have public transportation or are you going to have to go to school with the car? Do you not have a car? So there’s a lot that can go into this. We talk about faculty, that can go into this. The faculty experience. How many faculty member to student ratio? What what? That looks like,
you know,

do you prefer a smaller learning environment or a larger one?

What affiliations do they have?

So are they connected with a university based hospital or do they have their own?

Are there other international partnerships that are important to you that they may have and what kind of training opportunities do they provide so you know what will your clinical rotation look like?

Are you going to get the standard like pediatric, prenatal and cancer?

Do you get a wider variety?

You know, do you get to pick a rotation?
02:17:34.640 --> 02:17:35.621 That’s a specialty?
NOTE Confidence: 0.8618158
02:17:35.621 --> 02:17:37.583 You know where you’re going to
NOTE Confidence: 0.8618158
02:17:37.583 --> 02:17:39.347 have as much lab experience.
NOTE Confidence: 0.8618158
02:17:39.350 --> 02:17:41.877 Working with lab GC’s that you want.
NOTE Confidence: 0.8618158
02:17:41.880 --> 02:17:44.414 So these are going to be always
NOTE Confidence: 0.8618158
02:17:44.414 --> 02:17:46.228 that that programs differ and
NOTE Confidence: 0.8618158
02:17:46.230 --> 02:17:47.886 these are obviously important
NOTE Confidence: 0.8618158
02:17:47.886 --> 02:17:50.370 questions for you to ask yourself
NOTE Confidence: 0.8618158
02:17:50.436 --> 02:17:52.208 when considering a program.
NOTE Confidence: 0.8618158
02:17:52.210 --> 02:17:54.674 And I am going to just move this.
NOTE Confidence: 0.80740094
02:17:54.680 --> 02:17:58.505 OK, OK? So when you’re exploring programs
NOTE Confidence: 0.80740094
02:17:58.505 --> 02:18:00.558 like, how do you start ready start?
NOTE Confidence: 0.80740094
02:18:00.560 --> 02:18:02.600 I say go to this one particular website
NOTE Confidence: 0.80740094
02:18:02.600 --> 02:18:05.041 and as I listed here GC education.org and
NOTE Confidence: 0.80740094
02:18:05.041 --> 02:18:07.546 they’re going to list all of the currently
NOTE Confidence: 0.80740094
accredited programs in the US and Canada. That’s going to be where you get your pool from and then you know, just like we said, you make your smaller list and then you start asking questions. So visit the campus. Now. I know in terms of COVID that’s been kind of difficult, or that can be difficult. So zoom calls are appropriate phone calls to program directors or appropriate. Asking questions, I’m just maybe a drive by see if the town is like something like that. Try to get ahold of some students or alumni. And this is going to
be very valuable to you as a prospective student, because it’s going to allow you to ask questions of things like you know what did you wish you knew before you came here, or what was your favorite part of attending this program? Or if you could change something, what would you change? And you’ll start to get an overall feel of the student experience, and that, I think, is important in making your decision. We want you to ask lots of questions to the program Director’s. The ones I’ve listed kind of at the bottom.
Here are things that are good interview questions, so take a peek at those.

Step three, you want to know the process. OK, So what is applying to grad school is a process you have to know the timing for applications. Most of them are going to be in late fall, early winter. You know.

How soon do you have to take your your GR ES before that? Or do you have all the prereqs? Many of the programs had very similar requirements, but they are different. So once you make your small list you have to go according to what each program requires.
You know some required two semesters of organic chemistry and some don’t. So it’s very important to know those nuances. Well before you apply so that you have time to take them if you need them. Applying to more than one program. So data showed that if you apply to four or more programs, you have a much higher chance of getting into a program that if you apply to one or two. So that kind of makes sense. But you have to consider the cost of applying each program may have an application fee.
onsite interviews and you get

interviews at four or five schools,

you’re going to have to.

I don’t know.

Potentially fly there yourself

or drive there yourself.

You’re going to stay in a hotel,

you know there can be waivers.

For things like application fees,

but there’s generally not a whole lot of

support sometimes for the interview process,

so so be sure to factor that in when you’re

thinking about how many schools to apply to.

So what are the requirements

for applications?

Like I said,
they're going to be very similar, but you know slightly different between programs. You're generally going to have to have some coursework in biology, chemistry, genetics, statistics, psych, something. I generally tell potential applicants is at AP courses will typically not fulfill these credits, so if you took like AP, Psych in college, I mean in high school and you got to get out of basic sight classes in college,
and you have not taken an upper level site class in college beyond that.
Then you might not meet the requirement for a graduate program that requires college level psychology.
So just a word wise, you know, just think about the courses you may have taken.
That or AP, and have you taken any additional courses within that topic while at while in college.
The Jerry’s or something that is starting to become less of a requirement for many programs, but some still do, so I put it on here because you know, if you’re going
to be applying to 678 programs, you were likely going to encounter a program that’s going to require the Jerry. So to start thinking about that language requirements. This could vary widely between universities, but generally you’re going to have to have some type of evidence of proficiency in the English language transcripts and GPA, and you know a lot can happen in college.
and a lot of people are usually kind of finding their own legs in college, and so sometimes their GPA is not always reflective of their motivation for Graduate School. Or maybe you’ve taken a lot of classes and things that really didn’t interest you as much so you didn’t do as well. There are ways to help realign your GPA. There are ways to kind of spend this a little bit I put in here. This is my shameless plug of the clinical genetics on line grad certificate that you come. So I started grad certificate. Kind of for folks that

02:22:23.810 --> 02:22:25.820 Maybe they have a decent GPA,


02:22:30.842 --> 02:22:31.850 It’s all online,

02:22:31.850 --> 02:22:33.860 asynchronous in clinical genetics and genomics,

02:22:33.860 --> 02:22:35.948 So what better way to show a potential graduate?

02:22:35.948 --> 02:22:40.624 a potential graduate?

02:22:40.624 --> 02:22:45.570 could handle graduate level coursework

02:22:45.570 --> 02:22:49.495 and clinical genetics and genomics.

02:22:49.495 --> 02:22:51.495 Then taking some classes in same here.

02:22:51.495 --> 02:22:55.150 then taking some classes in same here.

02:22:55.150 --> 02:22:59.860 So what better way to show a potential graduate?

02:22:59.860 --> 02:23:04.530 that you could handle graduate level coursework
02:22:45.570 --> 02:22:47.209 is when this is in my wheelhouse.
NOTE Confidence: 0.8445341
02:22:47.210 --> 02:22:48.906 This is how I do this is a
NOTE Confidence: 0.8445341
NOTE Confidence: 0.8445341
02:22:50.020 --> 02:22:51.833 So you go to the website if
NOTE Confidence: 0.8445341
NOTE Confidence: 0.8445341
02:22:53.480 --> 02:22:55.508 You’re gonna need letters of recommendation,
NOTE Confidence: 0.8445341
NOTE Confidence: 0.8445341
02:22:58.770 --> 02:23:00.600 They should be pretty well rounded.
NOTE Confidence: 0.8445341
02:23:00.600 --> 02:23:02.434 They should be from people who can
NOTE Confidence: 0.8445341
02:23:02.434 --> 02:23:04.259 speak to your academic problems.
NOTE Confidence: 0.8445341
02:23:04.260 --> 02:23:06.102 They can speak to your ability
NOTE Confidence: 0.8445341
02:23:06.102 --> 02:23:07.620 to wear your counseling hat.
NOTE Confidence: 0.8445341
02:23:07.620 --> 02:23:09.450 They should speak to your character.
NOTE Confidence: 0.8445341
02:23:09.450 --> 02:23:10.970 Try to refrain from you.
NOTE Confidence: 0.8445341
02:23:10.970 --> 02:23:12.800 Know family, friends, things like that.
NOTE Confidence: 0.8445341
02:23:12.800 --> 02:23:14.630 It should be much more professional,
but it’s better to have more than less. So personal statement is something that usually is something I get a lot of questions about. And I will say that it’s not always the funnest part of the application. This is the time to tell them how you are unique and how amazing you are. I personally have never been very good at writing essays like that,
02:23:42.290 --> 02:23:44.196 so I enlisted the help of some
 editors you know. So I wrote my Nan.

02:23:46.380 --> 02:23:48.305 I sent it off to have someone
 edit it and look at it and be like,

02:23:50.750 --> 02:23:52.420 oh I don’t understand what
 you’re talking about here.

02:23:53.760 --> 02:24:00.197 Most of you probably belong to
 universities or institutions or
 organizations that have some type
 writing center or writing lab.

02:24:01.970 --> 02:24:04.140 So I encourage you to get this
 looked at by someone other than.

02:24:06.520 --> 02:24:07.804 Family members and friends.

02:24:07.804 --> 02:24:09.730 This should be someone who writing
02:24:09.791 --> 02:24:11.447 is what they do and they can read

02:24:11.447 --> 02:24:13.227 it for clarity and ensure that

02:24:13.227 --> 02:24:14.862 you’re getting the right message


02:24:17.140 --> 02:24:18.145 Application requirements also

02:24:18.145 --> 02:24:19.150 include volunteer experience,

02:24:19.150 --> 02:24:20.493 so it’s genetic counseling.

02:24:20.493 --> 02:24:22.775 So what type of organization or group

02:24:22.775 --> 02:24:25.143 have you been part of where you

02:24:25.143 --> 02:24:27.189 could put that counseling hat on?

02:24:27.190 --> 02:24:29.535 We talk a lot about crisis counseling,

02:24:29.540 --> 02:24:30.542 there’s bereavement counseling,

02:24:30.542 --> 02:24:31.210 support groups,

02:24:31.210 --> 02:24:32.890 working with the disability community.

02:24:32.890 --> 02:24:34.226 There’s lots of different

NOTE Confidence: 0.8646686

226
opportunities to volunteer,

NOTE Confidence: 0.8646686

even in times of coping,

NOTE Confidence: 0.8646686

so I’m always available to help

NOTE Confidence: 0.8646686

people brainstorm about what would

NOTE Confidence: 0.8646686

opportunities are out there.

NOTE Confidence: 0.8646686

And then showing that you’ve

NOTE Confidence: 0.8646686

done your due diligence so a lot

NOTE Confidence: 0.8646686

of people talk about shadowing.

NOTE Confidence: 0.8646686

I’ve seen a couple questions

NOTE Confidence: 0.8646686

come to chat about shadowing.

NOTE Confidence: 0.8646686

Shadowing is typically not

NOTE Confidence: 0.8646686

a requirement for programs.

NOTE Confidence: 0.8646686

It’s something that’s kind of

NOTE Confidence: 0.8646686

like icing on top of the cake.

NOTE Confidence: 0.8646686

You know,

NOTE Confidence: 0.8646686

it shows that you’ve done your homework.
You know what’s involved in a day in the life of a genetic counselor. You know that this is what you understand. A counseling session to be. So if you’re not able to shadow a counselor, can you interview one over the phone? Can you talk to one? Can you attend a session like this and SGC? Board and national side genetic counselors has a link that’s open to the public for the master Genetic counseling series and basically this shows three simulated genetic counseling sessions in different disciplines. There about 30 minutes apiece and
you get to watch them from start to finish and really get a feel for what happens in sessions. Trying to keep this moving along. OK, so Step 4 you need to listen to my dad. That’s my dad and my son Nicholas. My dad always gave great advice. And he always said to me, a good job is worth doing. It’s worth doing right? So don’t halfass anything when it comes to this application at all. Really, what you need to do is have everything be very, very, very purposeful, and if right now is the time at...
which you’re saying, hey,
I want to be a genetic counselor,
I want to go to grad school.
I want to be on track for this
and everything you have to do has
to kind of roll into that goal.
If you’re going to look for
make it related to genetic counseling.
If you’re going to get a summer job,
makes sense that’s useful or helpful to meeting that goal
of becoming a genetic counselor.

So a little bit of
type of random information,
and I did see something in the chat come through about this. Taking a year off or two.

Like, what do you think about gap year? So I think students have a lot of fears about a gap year in terms of like, oh, how’s it going to be viewed if I take a year off? No? I mean applicants who take gap years actually being pretty favorably, you know, depending on what you do with that gap year, maybe you work, so you’re going to become a little bit more professional. You’re going to have a little bit
more of a professional work ethic, and it all depends on how you. What you’re doing in that gap year, but I think if your purpose is to prepare yourself for grad school, this is not a negative on a resume whatsoever. If you didn’t get accepted to a program, seek feedback. So if you went through this application process and you don’t match where you don’t get an interview or you do get an interview but don’t get matched, you know either way you should be calling the program Director after
Match Time is over to say hey, what can I do is as an applicant you saw my application, where were the gaps where the holes? It could be something that you have no idea about your personal statement you may think is garbage, but they may think is amazing, but you had a 3.1 GPA instead of, you know something that they were more looking for, so it might not be something that’s on your radar. So definitely get back. Familiarize yourself with the profession we talked about that we
02:27:29.991 --> 02:27:31.527 talked about going to nscc.org read

02:27:31.527 --> 02:27:32.551 some genetic counseling literature,

02:27:32.560 --> 02:27:34.036 watch the master Genetic counseling series.

02:27:35.666 --> 02:27:37.205 All of these show programs that

02:27:37.205 --> 02:27:38.829 you're invested and that this is

02:27:38.881 --> 02:27:40.429 try and visit programs you know.

02:27:40.430 --> 02:27:41.665 COVID aside, if you could,

02:27:41.665 --> 02:27:42.890 I think things are starting

02:27:42.890 --> 02:27:44.605 to open up a little bit more.

02:27:44.610 --> 02:27:47.070 You may be able to do some things in person,

02:27:47.070 --> 02:27:47.883 but if not,

02:27:47.883 --> 02:27:50.432 make a phone call and make a zoom

02:27:50.432 --> 02:27:52.440 appointment. And you can do this.

02:27:52.440 --> 02:27:53.292 It’s not impossible.
I know we talk about it.

It's a huge process and a big endeavor. But it's possible.

Awesome speakers have gone through this.

We understand and empathize completely with this process.

So please try to stay positive.

Connect with us if you need any assistance.

Work hard and you'll make it happen.

If you have questions, here's my email. I'm also available during the Q&A session at the end.

If you have time for that, alright?

Hopefully it'll take up too much time.

I'm gonna stop sharing now.
That was great, Maria. I think you've got a lot of questions coming in. I'm afraid I won't be able to pose them all to you live, but if you want to ruminate on those coloring, I'll let you take it from here.

OK, can you hear me? Can you see? Yeah, OK great.

So my name is Colleen Doherty. I'm the assistant program director and the clinical coordinator for the Bay Path University Master of Science in Genetic Counseling Program and I'm here today to talk to you about
02:28:58.722 --> 02:29:00.835 is Maria just went through like
NOTE Confidence: 0.93150884
02:29:00.835 --> 02:29:03.714 how to pick a program and you go
NOTE Confidence: 0.93150884
02:29:03.714 --> 02:29:05.820 through that match process and you
NOTE Confidence: 0.93150884
02:29:05.820 --> 02:29:07.600 know congratulations now you match.
NOTE Confidence: 0.93150884
02:29:07.600 --> 02:29:10.216 Now, what like what are you going to
NOTE Confidence: 0.93150884
02:29:10.216 --> 02:29:12.917 expect once you get into Graduate School?
NOTE Confidence: 0.93150884
02:29:12.920 --> 02:29:15.848 And while I am representative of Bay Path?
NOTE Confidence: 0.93150884
02:29:15.850 --> 02:29:18.307 And we are one of those online
NOTE Confidence: 0.93150884
02:29:18.307 --> 02:29:20.930 programs which I think was a question
NOTE Confidence: 0.93150884
02:29:20.930 --> 02:29:23.400 that was asked along the side of
NOTE Confidence: 0.93150884
02:29:23.400 --> 02:29:24.950 a path in Boise State.
NOTE Confidence: 0.93150884
02:29:24.950 --> 02:29:27.750 Most of the other programs are on ground.
NOTE Confidence: 0.93150884
02:29:27.750 --> 02:29:30.284 I am going to try and represent
NOTE Confidence: 0.93150884
02:29:30.284 --> 02:29:32.298 all programs as best I can.
NOTE Confidence: 0.87771106
02:29:34.530 --> 02:29:36.882 So the first part about when
NOTE Confidence: 0.87771106
02:29:36.882 --> 02:29:38.837 you get into grad school,
you know when you have applied, you get in some of you have asked about that summer before. There are some prerequisites that programs will allow you to take in the summer prior to matriculate ING. I know that we accept students without having the Embryology prerequisite done, and we allow them to take it over the summer, knowing that it must be completed prior to matriculation. Every program is going to be different in that regard, so I don’t think we can answer that question for everyone and you just have
02:30:13.164 -- 02:30:15.344 to reach out to each individual program.
NOTE Confidence: 0.87771106

02:30:15.344 -- 02:30:17.493 But once you start in a program,
NOTE Confidence: 0.87771106

02:30:17.500 -- 02:30:19.649 there's the one aspect of the program
NOTE Confidence: 0.87771106

02:30:19.649 -- 02:30:21.194 will be the didactic education.
NOTE Confidence: 0.87771106

02:30:21.194 -- 02:30:24.122 And So what I mean by this are the actual
NOTE Confidence: 0.87771106

02:30:24.122 -- 02:30:26.122 courses that you're going to take.
NOTE Confidence: 0.87771106

02:30:26.122 -- 02:30:28.416 So what kind of curriculum can you
NOTE Confidence: 0.87771106

02:30:28.416 -- 02:30:31.008 expect when you get to a program face
NOTE Confidence: 0.87771106

02:30:31.008 -- 02:30:33.518 to face or on line whichever way it is,
NOTE Confidence: 0.87771106

02:30:33.520 -- 02:30:34.820 whatever modality is used,
NOTE Confidence: 0.87771106

02:30:34.820 -- 02:30:36.120 you should be getting.
NOTE Confidence: 0.87771106

02:30:36.120 -- 02:30:37.828 Courses in Human Genetics
NOTE Confidence: 0.87771106

02:30:37.830 -- 02:30:39.106 and genetic counseling.
NOTE Confidence: 0.87771106

02:30:39.106 -- 02:30:40.390 Biochemical metabolic genetics,
NOTE Confidence: 0.87771106

02:30:40.390 -- 02:30:41.686 cytogenetics, and molecular.
NOTE Confidence: 0.87771106

02:30:41.686 -- 02:30:44.284 There's been a lot of questions
about statistics and risk assessment
and that should all be
included in these courses as well.
Most programs, even if you
have to have an Embryology as a prerequisite,
will do some more Embryology and teratology.
Gee, they’ll be research methods courses.
These also can include the statistics,
and I’m only bringing that up because
I did see that come through quite
a few times in the question and
answer about the the math portion.
You might have an evidence based
medicine course, so this will be to
help instruct you into your capstone.
Will get to that as well, but many programs, most programs require some kind of research product or Capstone product. And then there are usually some very specific courses on kind of the larger scope. Genetic counseling specialties such as reproductive genetics, cancer, genetics and then medical genetics, which encompasses oftentimes the metabolic and biochemical genetics as well. Some of the other courses that you can expect to have in a didactic manner will be your psychosocial courses, so you’ll get like ethical legal
and social issues in genetic counseling there should be.

Several psychology courses, many that deal with the psychology of grief and loss and bereavement.

Family dynamics across the lifespan and more importantly, social and cultural awareness courses.

A lot of programs will try to thread that kind of conversation throughout your education, but some programs also have a specific course on this as well. Some of the other.

Didactic or curriculum areas that
you might come across are some programs might have you do some business or management skills, some discussion on professional issues. How to when I say education and advocacy and public health like how can you participate in the broader spectrum of. Medical training and in the community as well. Next, after your didactic education, that’s how most programs start, that’s how most programs start, and then you kind of move on into while you’re doing some of this didactic work, you start doing what we call your clinical field work, rotations, or like which are either patient
facing or non patient facing,

and you’ve heard some great discussions on what that encompass is,

but I will just quickly do an overview because I do believe some people were wondering like what kind of exposures do you get as a student?

And so in clinical.

In order to become the just to back up a second in order, the goal is for everybody to be board eligible when they graduate and there are specific standards that must be met in order for a student to graduate to be board eligible and a lot of that
involves your clinical patient facing

field work and every student has

to have 50 participatory encounters

that document that they are trying to

advance through a very specific set of

practice based competency’s I know that.

Maria and I think in the Q&A

I also put the GC education.

That’s the Accreditation Council of

Genetic Counselors website and they list

what these practice based competencies are.

But students are expected to

become proficient in each areas of

these practice based competencies,

and you do that through a combination

of all these things,
02:34:20.890 --> 02:34:23.500 not the least of which is the clinical field work experiences.

02:34:23.500 --> 02:34:25.596 So to do that,

02:34:27.092 --> 02:34:29.650 you have to have these 50 cases and they have to be across all specialties.

02:34:29.650 --> 02:34:31.890 So in most programs will offer three kind of basic rotations clinically.

02:34:31.890 --> 02:34:34.179 One would be general or pediatric, another would be prenatal reproductive genetics.

02:34:34.180 --> 02:34:36.788 In a third would be cancer, and you’ve heard speakers speak on all of those.

02:34:36.788 --> 02:34:38.658 There’s also usually time worked

02:34:38.660 --> 02:34:40.894 One would be general or pediatric,

02:34:40.894 --> 02:34:42.382 another would be prenatal

02:34:42.382 --> 02:34:43.126 reproductive genetics.

02:34:43.130 --> 02:34:45.368 In a third would be cancer,

02:34:45.370 --> 02:34:46.862 and you’ve heard speakers

02:34:46.862 --> 02:34:48.727 speak on all of those.

02:34:48.730 --> 02:34:50.585 There’s also usually time worked
02:34:50.585 --> 02:34:52.830 in to carve out some space.
NOTE Confidence: 0.8771303
02:34:52.830 --> 02:34:55.218 If somebody has a specific specialty
NOTE Confidence: 0.8771303
02:34:55.218 --> 02:34:56.810 that they’re interested in.
NOTE Confidence: 0.8771303
02:34:56.810 --> 02:34:59.066 And I’ve listed a few here.
NOTE Confidence: 0.8771303
02:35:01.320 --> 02:35:03.576 You heard Arpita talk about cardiovascular.
NOTE Confidence: 0.8771303
02:35:03.576 --> 02:35:06.208 Many of our students have done
NOTE Confidence: 0.8771303
02:35:06.210 --> 02:35:08.085 rotations with Arpita and have found it
NOTE Confidence: 0.8771303
02:35:08.085 --> 02:35:09.585 extremely helpful in understanding how
NOTE Confidence: 0.8771303
02:35:09.590 --> 02:35:11.100 cardiovascular genetic program works.
NOTE Confidence: 0.8771303
02:35:11.100 --> 02:35:15.229 Some of those are hard to find an an
NOTE Confidence: 0.8771303
02:35:15.230 --> 02:35:18.037 you know each program is a different
NOTE Confidence: 0.8771303
02:35:18.037 --> 02:35:20.869 exposure and ability to find these for you.
NOTE Confidence: 0.8771303
02:35:20.870 --> 02:35:24.223 So that’s something to look at when
NOTE Confidence: 0.8771303
02:35:24.223 --> 02:35:27.320 you’re trying to choose a program.
You also want to again kind of to combine Maria stock in mind when you're considering this. You wonder how many will be onsite rotations? How many ortelle genetics? How many you simulated patients? And again, we all were Tele Genetics and simulated patients all last year. But that's you know, taking COVID out of it there. There are programs that do a little bit more Tele health than others, and more have on site. And what is going to be work best for you?
For non patient facing field work I think that Anthony spoke really well about what it’s like to be in a lab setting. We also have students who do lab settings where they’re just specifically doing very interpretation. We have some students who can do industry settings such as shadow and Myriad counselor. You know, in a Regional Medical specialist or something like emerging careers where you work with a group at Quest Diagnostics where you can understand where the future might be for an interview. Genetic
counselors aware some future ideas
might be and and more of a business aspect of genetic counseling and what your career could look like.
So third part of a program will be what you know. We have referred to as either a research project or Capstone project. And again I heard somebody. Sorry I read somebody was asking about like how much research is done and sometimes is shaped based on what you get interested in in your graduate program but but not always.
But every graduate student is going to be required to do some sort of project I have indicated here. A list of some examples of needs for projects that came out of Bay Path, 'cause that’s what I have access to. But you know, you can ask whatever program you’re interested in on what are their projects, but you know, we’ve had students investigate some direct to consumer testing, we’ve had students investigate which is a really hot topic. Just some that focus just on the genetic counseling process. As you can see.
Perspectives on evolving technologies.

We had a student look into genetic counselors' views on CRISPR.

We had one of our graduates who worked with the Yale Group on.

You know going to gain a tumor board and what the follow up was.

And how were those patients appropriately referred?

Where they appropriately referred?

And and you know most then most of these students are then encouraged to submit their work product to NSCC to see if they can get paper out of it or presentation at the national meeting.

But this is just an example.
02:38:18.670 --> 02:38:20.396 of what students are doing.
NOTE Confidence: 0.86558104
02:38:20.396 --> 02:38:22.395 There's a wide variety and many
NOTE Confidence: 0.86558104
02:38:22.395 --> 02:38:24.540 are coming out this year about,
NOTE Confidence: 0.86558104
02:38:24.540 --> 02:38:26.610 you know, COVID and Tele health,
NOTE Confidence: 0.86558104
02:38:26.610 --> 02:38:29.282 and so it'll be a lot of more
NOTE Confidence: 0.86558104
02:38:29.282 --> 02:38:30.725 interesting things that are
NOTE Confidence: 0.86558104
02:38:30.725 --> 02:38:32.813 coming out of all the programs.
NOTE Confidence: 0.85402596
02:38:35.050 --> 02:38:37.822 And the the last section that you
NOTE Confidence: 0.85402596
02:38:37.822 --> 02:38:40.510 know you could expect in a program.
NOTE Confidence: 0.85402596
02:38:40.510 --> 02:38:42.435 Some programs require some kind
NOTE Confidence: 0.85402596
02:38:42.435 --> 02:38:43.975 of volunteering or professional
NOTE Confidence: 0.85402596
02:38:43.975 --> 02:38:45.189 development and activities.
NOTE Confidence: 0.85402596
02:38:45.190 --> 02:38:46.750 What we do specifically,
NOTE Confidence: 0.85402596
02:38:46.750 --> 02:38:49.480 we have two onsite weekends a year.
NOTE Confidence: 0.85402596
02:38:49.480 --> 02:38:50.622 Again, you know,
NOTE Confidence: 0.85402596
02:38:50.622 --> 02:38:53.518 in the before times and pre COVID now
are on sites are they’ve been remote.

But where we have a weekend where everybody comes together and we talk about.

You know self care professional development.

We do activities we you know if there’s anything that new that’s happened again.

Another question was how do you keep on top of this in the education system?

Will then we try to institute that then?

If it’s something that’s very new,

like recently the AC MG changed

the 59 to 74 just the other day.

So you know we’ve got to work better and somehow and that’s you know until you can work it into your curriculum, you
have to have spots where you can discuss it.

We there's journal clubs.

That's often a way that these kind.

This kind of information is shared as well,

and you'll soon see two of our rising second year students who are doing some volunteering right after me.

But the goal of all of this is to graduate genetic counselors, who are what we considered board eligible.

And again there were a couple of questions about how to be able to take the boards, but you have to come through a board or I'm sorry,
an accredited AC GC accredited program in order to be considered board eligible and to sit for the board exam. The board exam is offered post graduation. It’s offered in August and in February, so twice a year and you must pass that to be board certified. There are some states in which you can work if you are considered board eligible, but there are in order to get licensure, there’s typically a certain amount of time that you have in order.
to pass that board exam and and

02:40:41.055 --> 02:40:43.029 to be able to be employable.

That’s going to vary from state to state.

02:40:45.020 --> 02:40:47.668 And again I just put in

some resources as well.

02:40:50.320 --> 02:40:52.480 I guess what I also wanted

to say here is that you know.

02:40:52.480 --> 02:40:54.008 So once you graduate,

there’s still one more step to

becoming a board certified,

like many other,

like PT or many other

health care disciplines,

you have to take a board exam

in order to be fully certified.

But Maria also discussed this.
There’s some great resources on SGC page. This is just a picture of what that master genetic counseling series looks like. There’s also web and R of a day in the life of genetic counselors, and I also would direct you. You know there’s a lot of great social media out there where genetic counselors play a big role. Like on Twitter, there’s hashtag, GC chat. There is a discord channel that actually is moderated by a recent grad and Baker Baker program, and they are. That’s really great.
Like I am not on that.

None of the programs are on that because it’s a really great private way to ask some good questions and you can get some really good student feedback on there as well. So I’m offering up my email. Please email me if you have any questions on what to expect in Graduate School between Maria myself. We can answer some questions about different programs, but the best way if you have a specific question about a specific program is to look up their website and go directly to them.
Thanks Colleen Ann. I do want to clarify for everyone that I will be sharing our speakers email addresses. They’ve all kindly volunteered to share that information with you all, so I’ll have that up kind of in the background as we do the Q&A, but I’ll let Paige and Mike take over for the next section.

Sharing OK.

Makes you wanna go first.

Doesn’t matter to me.

Alright, you go ahead OK?

Sharing OK.

Yep, OK, my name is Mike Peracchio.
I am a now second year student and the Master of Science in General Accounting Program at Bay Path University. So I just wanted to talk a little bit about my path to Bay Path. I’m more of a non traditional student and so I’ve had kind of a bunch of different shifts in my career along the way, so I thought I’d just tell you a little about that and then. Talk to you about a little bit about my experience in the Bay Path program so far, and kind of how I’ve been, you know, balancing all the different aspects of my life while also then. Grad school for genetic counseling.
So education I got my bachelors degree in ecology and evolutionary biology back in 2003. And I ended up going after school. I did some traveling and ended up going into teaching, so I went back to school and got certified to teach high school biology. So that was my degree here and then I went back to grad school again at UConn. And now on that day, pass. I do want to be clear and in no way do you need to have multiple masters degrees in order to apply.
02:44:40.325 --> 02:44:42.165 for an account link program.
NOTE Confidence: 0.8387129
02:44:42.170 --> 02:44:44.762 This is more just a product of my
NOTE Confidence: 0.8387129
02:44:44.762 --> 02:44:47.137 searching to find the career that was
NOTE Confidence: 0.8387129
02:44:47.137 --> 02:44:49.710 really going to be the best for me,
NOTE Confidence: 0.8387129
02:44:49.710 --> 02:44:52.006 which has taken me a little while,
NOTE Confidence: 0.8387129
02:44:52.010 --> 02:44:56.010 but I’m pretty sure I’m there now so.
NOTE Confidence: 0.8387129
02:44:56.010 --> 02:45:01.192 Yeah, professionally, my background.
NOTE Confidence: 0.8387129
02:45:01.192 --> 02:45:03.190 I ended up becoming a high
NOTE Confidence: 0.8387129
02:45:03.190 --> 02:45:06.214 school biology teacher and I.
NOTE Confidence: 0.8387129
02:45:06.214 --> 02:45:11.528 I taught all levels of high school
NOTE Confidence: 0.8387129
02:45:11.528 --> 02:45:13.380 so many different levels,
NOTE Confidence: 0.8387129
02:45:13.380 --> 02:45:17.566 which is something that I think is.
NOTE Confidence: 0.8387129
02:45:17.570 --> 02:45:20.620 I have found to be, you know,
a useful skill for genetic counseling because I had to, you know, learn how to teach genetics concepts and other complex science concepts too. To all levels of students and people without much background in those topics. And so that’s something that I think we do everyday, is down to counselors as well. Is trying to explain some of these concepts to people who don’t have a background in. In science or genetics? So I end up leaving. My high school teaching when I started teaching AP Bio,
I kind of got interested. It kind of made me want to get back into going a little deeper in the science and I actually kind of want to teach at the college level. So I went back to UConn in a pro at this originally in PhD program and genetics, and so I was doing genetics research as part of my grad school on small RNAs in a basic research lab at the University of Connecticut. And I, you know, found out that that wasn’t. Quite where I wanted to be either, so I so I graduated with a masters degree and got a job in a clinical lab and I’ve found my interests were more.
In the clinical side of things, then kind of the basic research side of things and so.

I started working at the Mount Sinai genetic testing labs in Connecticut and that was part of the Mount Sinai Hospital system in New York City, and so I was working in the laboratory technologist there, and so I’ve kind of been in three different labs and devolved in slightly different types of labs. So Mount Sinai that was a non-profit hospital based lab. I then was at the Jackson Laboratory.
Which is a nonprofit research academic lab. So they have much more for research and academic focus. So I but they do have a small clinical genomics lab and so that’s where I was working when I was there was in the clinical lab and then I. Most recently went to a private company called Semaphore which was actually that same Mount Sinai lab, but it converted into a private company and so now you know I work for a more for profit commercial company, so I’ve kind of been in all the different types of labs and so it’s been interesting to kind of get.
the perspective of each of those.

And another thing I think this informed me for, you know something that’s relevant to counseling is.

And I’ve got a good understanding of, as a genetic counselor, when you order some of those genetic tests for a patient, you know I have a good idea of you know what that means and what’s actually going on in the laboratories where those tests are being performed and those results are being reported out from.

As far as my application process to Bay Path suggested,
counseling was something I was always interested in, and when I finished my undergrad, and it still wasn’t a huge field but it never left the back of my mind. And then I started interacting with some Jenna counselors in the labs that worked at and someone I worked.
closely with actually applied for
the Bay Path program and she actually just graduated from the path program.
And so you know, I got a good sense of what that was all about, and.
So I really decided that I was going to pursue this and.
You know, so some of the things that I can really can’t talk about.
Hopefully, you know page might be able give you more insight on applying to multiple programs.
For me there were really only at
the time to online programs in the country and Boise State and they pass and for me you know I needed to be able to keep working. A lot and I have three young kids at home, so I really wasn’t. Didn’t see that I was going to be able to do an on site program and so for me I basically kind of had those as my two options and. I applied the base half. You know ’cause I had heard good things. I lived near there and so I actually knew some of the people who are very familiar with the program. And when I was working production laboratory,
the program director actually brought a group of students from the PATH program to tour our clinical lab,
and I gave them this horrible AB so it’s able to meet some people and. And so I had a good sense.
So you know, some of the things I think that were strengths for me when I applied is my varied experience.
So as I mentioned before, you know, working as a teacher and work in the lab, I think, 2 unique kinds of experience.
You know that piece we were in
the counselors or explaining genetics concepts to patients.
My education background I thought was useful for that and the lab experience to,
you know, to really know the back end of.
What happens when we order tests for our patients?
And so I think those were good experience to have.
I also you know I did some traveling after college and talked about that a little in my personal statement about how it kind of gave me a broader perspective on different
cultures and different people around the world and just kind of, I think, made me a more well rounded individual just in general.

And then some observation and networking. So I did have a chance to observe a genetic counselor in cancer genetics only a couple of times before I applied. But as I said, I also kind of got to know some people.

You know involved with the Bay Path program and the UConn program that they interact with. I attended some seminars that they
02:51:40.664 --> 02:51:43.534 put on and so I mean I think it always helps to get to know whoever you can and generate counseling world.
NOTE Confidence: 0.84286773
02:51:43.534 --> 02:51:45.995 Still, a pretty small world,
NOTE Confidence: 0.84286773
02:51:45.995 --> 02:51:47.990 so in whatever area you live in,
NOTE Confidence: 0.84286773
02:51:47.990 --> 02:51:51.926 I feel like a lot of the counselor sent to to know each other because it’s still a relatively small world,
NOTE Confidence: 0.84286773
02:51:51.930 --> 02:51:54.106 so it’s good to just get to know whoever you can.
NOTE Confidence: 0.84286773
02:51:54.106 --> 02:52:01.876 And then you know,
NOTE Confidence: 0.84286773
02:52:01.876 --> 02:52:03.690 I think when it comes to your personal statement and your interviews just being authentic is probably the most important thing is,
NOTE Confidence: 0.84286773
02:52:03.690 --> 02:52:04.554 you know,
just you know, don’t tell him what you think they want to hear so much as just tell them about yourself. Tell them why you think you would be a good fit for their program and why you think that you would. You know Jenna counseling would be a good career for you and you know what personal experiences you have. You think make you a strong candidate and would be relevant to going into that career. And I think that’s. Probably the best advice I can get.
as far as the application process goes.

So as far as now that I'm in the Bay Path program,
you know some things that work for me.
The online aspect of it really allows a lot of flexibility and you know the program directors are, you know, really accommodating and flexible, and really they want everyone to succeed, and they're really great about you know, doing everything they can to work with people to make sure everyone is succeeding and getting the most out of their experience.

Time management is definitely key.
You know I’m working full time so far and it’s a full time program. As I mentioned, I have three young kids so you know I will say it’s been pretty intense balancing all of that. But you know, I’ve survived. I’m still doing it and I’m learning a lot and really enjoying it. So it’s definitely. It’s definitely something you can do. And.

One other great thing about the Bay Path program is it’s, you know, pretty small group and we’re very.
It’s a very tight knit group and we’re very supportive of each other and it’s almost like a family atmosphere where really everyone students and program directors and instructors is really invested in making sure everyone succeeds. So if at any time you know you’re having a struggle with something, you can just reach out to any of your classmates or did any of the program directors and someone is going to help you out. And help you figure things out and get through things, so that’s been a great part.
02:54:16.890 --> 02:54:18.180 of the program for me.

02:54:20.560 --> 02:54:22.909 So yeah, I mean this is my average day,

02:54:22.910 --> 02:54:24.476 so we just finished the first

02:54:24.476 --> 02:54:25.520 year this past semester.

02:54:25.520 --> 02:54:27.869 We had classes, so I would go to work.

02:54:27.870 --> 02:54:33.426 so it just kind of adds to my time.

02:54:33.430 --> 02:54:36.160 I'd come home help with my kids

02:54:36.160 --> 02:54:38.930 and then get to work at night.

02:54:38.930 --> 02:54:41.720 watching lectures and videos

02:54:41.720 --> 02:54:43.580 or completing assignments and

02:54:43.650 --> 02:54:45.546 then this past semester we had

02:54:45.546 --> 02:54:47.190 to do 10 observation days.

02:54:47.190 --> 02:54:49.150 So we just finished that.
And so I was able to observe various specialties and various student counselors and then. Starting next week we go into our next semester and we’ll have our full clinical rotations, which is about two to three days a week, and so I’m going to have to reduce my work. At this point I’ll be going down to two more like two or three days a week as well, because you just need to have that. All the extra clinic time you know will make working full time at this point pretty difficult, but.
That’s about all I have, so my email address is here as well, so if anyone has any questions, happy to answer. Or if you want to email me on the side. I’m happy to answer any questions or tell you more about. My experience is so thank you.

Thanks Mike. Do you wanna wrap us up here before our Q&A? Yes, so let me share my screen. Let’s see.

OK, can everybody see that right? Yep, awesome. So my name is Paige Clique.
I live in Sacramento, CA and like Mike just said we just finished our first year at Bay Path University. My slides aren’t super exciting so don’t get your hopes up for this, but I’ll give you a little bit of my background and kind of share my story and my experiences. In 2017, I graduated from BYU, Hawaii with a bachelors degree in biomedical sciences with a minor in biochemistry. I actually thought that I wanted to be a medical geneticist. I applied to medical school but kind of partly through that process.
I realized that that’s not really what I wanted to do and I preferred the genetic counselor aspect of patient care better and kind of switched gears a little bit there. So in the fall of 2018, I applied to the boy C state program and like Mike, I wasn’t really in a position to be able to move and attend an interesting program, and I didn’t even know of the Bay Path program at that point, so I applied to boy, see, and I interviewed with them, but I do not match. And the following year I applied to both Boisi and be path.
I interviewed at both of them and then of course I matched at Bay Path, which was my first choice. And so you know, there are some of you listening that have applied before or some of you who will probably experience that in the future. And that’s a horrible feeling. I think I’ll always remember how disappointed I was in myself. That first match day when I didn’t match and it’s OK to be disappointed. It’s OK to be sad and take a moment to feel those feelings,
but you need to pick yourself up and figure out what you need to do to make yourself more prepared for next time. And I just want to add that it’s not necessarily about making yourself. Look better as an applicant and making the schools like you, but it’s really about preparing yourself to begin grad school and actually being ready for that. So during my undergrad I was a tutor for the genetics class at my university, but aside from that I didn’t really have a lot of work experience that
was directly related to genetics, so a lot of my current classmates have worked in a lab like Mike or word bcas before, and I did not have an opportunity for any of those jobs. So if you’re in a position like me where you don’t feel like you have that job experience that’s directly related to genetic counseling. Don’t worry about it. I did learn a lot of skills in my other jobs that can be applied to genetic counseling. So if you’re in that position, just make sure that in your application in your
02:58:51.730 --> 02:58:52.711 interview that you’re able to express how those unrelated jobs can help you both.

02:58:52.711 --> 02:58:54.346 As a grad student and as a future GC so you don’t have to have those specific job experiences and genetics. Going on to what I did and then also what I did to improve myself after not matching before I applied again.

02:58:56.310 --> 02:58:59.578 Of course the number one thing is shadowing. I’m sure you hear that all the time and I know that’s difficult now with COVID as well.
had shadowed at one clinic and I was there for a month. But I still felt like when I was applying again, I needed to have a little bit more of a varied experience just to help me know really what to expect from how different clinics run as well as just to have something else to add to that resume. So I shot out two additional clinics, all of which were Pediatrics, which is what I want to work in, so that’s just helpful to see how different institutions and providers do things. I’ll go through this other stuff.
pretty quickly, ’cause Maria kind of gave you a pretty good. I also attended some conferences like the Muscular Dystrophy Association engaged DMD Symposium. There was an event very similar to this that I attended in person that was in the Bay Area of California a couple years ago. Outside of my normal volunteer work, I did not have any specific crisis counseling the first time I applied, so I went through a crisis training and began volunteering with the
California Youth Crisis line.

And then the most comprehensive part of my application was my volunteer work.

So these are just a few of the logos from some of the organizations that I volunteered with, so I don’t need to go into this too much. But you can see I have a mix of a lot of different things, so while I do have some organizations that are related to more of the medical side of things and some genetic things like muscular dystrophy, of course the American Cancer Association as well. There are some other things in there as well, so it is important for me to be more
well rounded and have a variety of different experiences volunteering. And then going on to what I do now every day I have a 9 month old daughter. She was two months old when I started my program and so I love our online format because it allows me to do my schoolwork while she's not being, or she spends a lot of time just sitting on the floor next to me playing while I'm doing my work. So if she needs me, I can stop what I'm doing and come back to it later. So that is one reason that I really love our program and the online format of it because.
I don’t have to leave my baby and I don’t have to go sit in class all day, so I would guess that I spend about 25 hours a week on school. I asked my husband. He thinks I spend a lot longer than, but I would say about 25 hours, maybe longer, but I do get interrupted a lot because of my baby. So you probably could get all of your work done faster if you’re able to have uninterrupted time. That set aside and focus on that. So some of the things that we do in our program.
course, we watch our lectures.

Those are almost all pre recorded so you can watch it on your own time like Mike has to go to work during the day. He can do it later at night.

Everybody in our program has a different situation. So it’s really a great way to be able to personalize our experience. And be able to make it work with our own needs and our schedules.
so we watch lectures. We have chapters that we read in our textbooks, other articles. Sometimes there are supplementary videos. Most of our assignments are due Sunday, so we have the whole week to work on it. Discussion boards we respond to our classmates. We have a lot of group projects that we do. We work together a lot with our classmates. We do role plays or one of us is a genetic counselor. One of us is the patient just to practice some of those skills. We have video presentations where
we record ourselves giving the presentation for our classmates to watch all the other assignments, quizzes, tests, things that you would expect from a program. Something that I wish I knew. I get this question. I’ve talked to some applicants before and they always ask me what I wish I knew. While our program isn’t easy, it definitely isn’t easy by any means. There is a lot of work. It’s doable.
wonderful. We love them there. They’re very flexible. They are very easy to get a hold of. If we need anything we can reach them easily and they’ll help us with whatever we need. Like Mike said, everybody wants us to succeed. Nobody’s out to get us. Very helpful if we need anything like I said, So what I wish I knew is that is not as scary as people make it up to be an our faculty. They treat us like professionals and like adults, not like little kids, which is great. And
03:03:58.140 --> 03:04:00.674 that’s of course how it should be.

03:04:00.680 --> 03:04:03.504 So just one tip that I have is to plan your week out ahead of time.

03:04:03.504 --> 03:04:06.020 time management again. Like touched on,

03:04:06.020 --> 03:04:07.585 this is crucial because it is a lot of work and it’s a lot of material to cover. And

03:04:07.585 --> 03:04:09.790 if you wait until the last minute, it’s definitely not going to work out very well for you and then again,

03:04:09.790 --> 03:04:11.848 another tip I have is if it’s been awhile since taking some of those fundamental classes like genetics or Embryology,

03:04:11.848 --> 03:04:13.550 maybe brush up a little bit on

03:04:13.550 --> 03:04:15.434 if you wait until the last minute, it’s definitely not going to work out very well for you and then again,

03:04:15.434 --> 03:04:16.380 another tip I have is if it’s been awhile since taking some of those fundamental classes like genetics or Embryology,
03:04:29.042 --> 03:04:31.647 those before starting your program.
NOTE Confidence: 0.8793968
03:04:31.650 --> 03:04:34.215 I think that’s everything that I have to say,
NOTE Confidence: 0.8793968
03:04:34.220 --> 03:04:36.152 but here’s my email address if you
NOTE Confidence: 0.8793968
03:04:36.152 --> 03:04:37.940 have any specific questions for me,
NOTE Confidence: 0.8793968
03:04:37.940 --> 03:04:40.230 or if you need any help with anything.
NOTE Confidence: 0.876584
03:04:46.140 --> 03:04:49.898 Alright, and that brings us
NOTE Confidence: 0.876584
03:04:49.898 --> 03:04:54.230 to our official Q&A section.
NOTE Confidence: 0.90188515
03:04:54.230 --> 03:04:57.116 Like I said, I will put
NOTE Confidence: 0.90188515
03:04:57.116 --> 03:05:01.752 up everyones emails here.
NOTE Confidence: 0.90188515
03:05:01.752 --> 03:05:03.823 I just ask that you all as participants
NOTE Confidence: 0.90188515
03:05:03.823 --> 03:05:05.606 be mindful that as much as we
NOTE Confidence: 0.90188515
03:05:05.606 --> 03:05:07.928 would love to have a shadowing
NOTE Confidence: 0.90188515
03:05:07.928 --> 03:05:10.430 opportunity for every single one of
NOTE Confidence: 0.90188515
03:05:10.430 --> 03:05:12.440 you that is just not something that
NOTE Confidence: 0.90188515
03:05:12.440 --> 03:05:14.720 we can accommodate at this time.
NOTE Confidence: 0.90188515
03:05:14.720 --> 03:05:16.847 So feel free to email our panelists today
if you have any particular questions, maybe about their experience or something that they had talked about, or a follow-up question that isn’t addressed during this portion. But if you do ask about shadowing opportunities, we’re all going to say the same thing, so we’d appreciate it if you just be mindful of that, and of course if you have any questions more generally, you can send me Alex an email and my email is down here.
03:05:45.800 --> 03:05:48.149 just wanted to turn it over to the
NOTE Confidence: 0.90188515
03:05:48.149 --> 03:05:50.185 panelists to say if there's anything
NOTE Confidence: 0.90188515
03:05:50.185 --> 03:05:53.083 that they had forgotten to talk about.
NOTE Confidence: 0.90188515
03:05:53.090 --> 03:05:54.740 Or seeing these questions if
NOTE Confidence: 0.90188515
03:05:54.740 --> 03:05:56.060 that brought up something,
NOTE Confidence: 0.90188515
03:05:56.060 --> 03:05:57.710 anything that you would like
NOTE Confidence: 0.90188515
03:05:57.710 --> 03:05:58.700 to address before.
NOTE Confidence: 0.90188515
03:05:58.700 --> 03:06:00.680 I guess we just start picking.
NOTE Confidence: 0.90188515
03:06:00.680 --> 03:06:02.000 Start picking different questions.
NOTE Confidence: 0.90188515
03:06:02.000 --> 03:06:02.660 Sure I
NOTE Confidence: 0.85876554
03:06:02.660 --> 03:06:06.572 can. I just address
NOTE Confidence: 0.85876554
03:06:06.572 --> 03:06:09.259 the match system because I feel like a
NOTE Confidence: 0.85876554
03:06:09.260 --> 03:06:11.444 couple of people have asked in the Q&A.
NOTE Confidence: 0.85876554
03:06:11.444 --> 03:06:14.144 So what the match system is anybody
NOTE Confidence: 0.85876554
03:06:14.144 --> 03:06:14.144 who wants to apply to a genetic
NOTE Confidence: 0.85876554
03:06:14.144 --> 03:06:15.836 counseling training program must.
They must register with the this match company and you get a number and then every place you want to apply you have to include this number once you go through the application process and if you get interviewed then you need to put your schools that you have interviewed with. You rank them in order of where you would like to go and the schools would like to have participate in the program and those are binding. Then match, that happens. It's usually like April 23rd ISH and
then it’s all put into a computer
system and you’re matched up that way and it works out really well,
but it is binding and you do have to sign documents and
you cannot like there’s no sneaking around the back and there’s no like saying oh I’m going to put you first
It’s like you know you have to follow. It’s like you know you have to follow.
Follow the rules and it’s worked out pretty well.
It’s been, I think three years so it’s worked out well. Perfect yeah, I did see a lot of different questions about the match.
And I don’t know calling if you could speak to. You know the percentage of second year applicants, or you know that you so gosh. You know those numbers are out there? I don’t know them off the top of my head. I know that consistently about 50% of applicants match, so I’m. I don’t know them off the top of my head. That’s OK, I’m sure there’s a lot of data on that,
but I think that’s something I had seen in the questions as well. And for our practicing genetic counselors, there were a lot of questions about self care and burnout, and I know our team of panelists have been answering these questions throughout the Q&A. But I do think it’s an important point to touch on. If anyone could talk about, either at work or during their genetic counseling program, how? Burnout was approached and how we handle it and the field. We talk to each other a lot. Very true, yeah. I was going
to say that burnout it is.

It is definitely talked about in Graduate School, and it’s definitely something that occurs when you’re practicing.

I think, and I entered this in a question, but it is something that you get better with dealing with and coping with as you practice, and probably the.

Thing that’s helped the most in terms of dealing with burnout is as just Arbiter said it actually talking about your experience with other.
Genetic counselors has been a really great way to deal with burnout. I think it's hard sometimes. You know we have friends and partners, but they may not understand what we do and the burnout of it. So I think having a close group of genetic counselors that you feel comfortable sharing difficult cases and emotions has been a really great help and in general self care which can look different to other. Many different people, but it could be just. Turning off your computer, closing your computer at certain time.
when you’ve hit 8 hours and saying I’m not checking my email. This weekend, it could be putting your phone on silent. It could be making time for lunch in the middle of the day. You wouldn’t think how some genetic counselors work through lunch, but really taking 30 minutes really makes a difference, so I can’t really speak to every sort of self care that helps. ’cause that’s really individualized, but burnout is something that is does happen. As a general counselor, it tends to come in different cycles,
different patterns, but it is something that is
cope with and I'm not sure if. Call collina Maria.
Maybe can talk about how it's addressed in Graduate School
specifically. So we will go ahead. No, go ahead. I was gonna let you start
since you have current students. Well we talk about it an what to do in like the
introduction to field work. Modules like.
To pay attention to this, what you could do, we offer and debriefing meetings.
03:10:54.340 --> 03:10:56.902 Every Wednesday when students are in their field, work with me and you know those are optional because we are an online program.
03:11:00.200 --> 03:11:02.758 We try to respect that. But, you know, as much as you can talk about it, it has to be done.
03:11:05.688 --> 03:11:08.615 And that’s the kicker. Is is actually doing it for yourself.
03:11:10.444 --> 03:11:11.908 And I think all of us.
03:11:14.475 --> 03:11:16.665 You know our Fall prey to that. I don’t have time to like.
03:11:20.754 --> 03:11:22.290 Do that exercise or do what I want.
03:11:24.340 --> 03:11:25.372 Make those cookies or whatever it is I want to do.
03:11:27.150 --> 03:11:29.062 I gotta do this work but like Amy
03:11:29.062 --> 03:11:31.064 said you gotta shut it off and an
NOTE Confidence: 0.83620596
03:11:31.064 --> 03:11:32.790 keep that time for yourself so.
NOTE Confidence: 0.8188241
03:11:35.450 --> 03:11:36.518 I agree, yeah,
NOTE Confidence: 0.8188241
03:11:36.520 --> 03:11:38.627 I I totally echo your sentiments Colleen
NOTE Confidence: 0.8188241
03:11:38.627 --> 03:11:41.617 and and I know that this differs institution
NOTE Confidence: 0.8188241
03:11:41.617 --> 03:11:43.637 institution in school to school,
NOTE Confidence: 0.8188241
03:11:43.640 --> 03:11:46.335 how everybody chooses to to handle mental
NOTE Confidence: 0.8188241
03:11:46.335 --> 03:11:48.948 health with with students for burnout.
NOTE Confidence: 0.8188241
03:11:48.950 --> 03:11:51.015 You know, I mean, you can’t obviously
NOTE Confidence: 0.8188241
03:11:51.015 --> 03:11:53.316 have a plan of what we would like
NOTE Confidence: 0.8188241
03:11:53.316 --> 03:11:55.451 to do with our students and I can
NOTE Confidence: 0.8188241
03:11:55.451 --> 03:11:57.412 speak about when when I was in grad
NOTE Confidence: 0.8188241
03:11:57.412 --> 03:11:59.044 school and that was very challenging.
NOTE Confidence: 0.8188241
03:11:59.050 --> 03:12:01.507 But I think what it comes down to is,
NOTE Confidence: 0.8188241
03:12:01.510 --> 03:12:02.870 is checkins, as you know,
NOTE Confidence: 0.8188241
03:12:02.870 --> 03:12:04.648 kind of not relying on yourself all

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the time to know that you’re OK having someone else checking on you and and that should also be the role of faculty and advisors is to do regular checkins and make sure folks are OK and to know, respect boundaries. I think it’s very easy, like if I have time on a. Saturday night, like a while, I’m thinking of something. Email someone and and you know, maybe not think that they’re going to look at it until Monday, but they might and they might, as a student, feel pressured to to respond right away.
So I think you know,

faculty may need to make a good,

correlated effort to recognize

the limitations of students,

because I think it really starts

there with the whole yes.

Yes, yes, I'll do whatever I can because

I want to show that I'm a good

student and then you get into the

workforce and it's like yes,

yes I can.

yes, yes I can.

'cause I want to be a genetic counselor

and I want my boss to see that and

then we just don't really ever stop

and we don't know how to say no.
So I think learning your own limitations is really the first step. I’m gonna jump in here as a manager to respond to what Maria is saying is, you know, we have monthly checkins with all my staff. You know, I kind of closely watched. Hey, you worked a lot last week. Tell me what happened. How can I help? What barriers or challenges are sort of adding to that kind of overtime because I think we want to be really cognizant of a good work life balance.
And you know that is really going to keep all of us.

You know, mentally healthy.

An emotionally available to our patients who need us, you know, as was mentioned before, we also have incorporated a peer discussion group with our genetic counselors, so it’s an opportunity for them to really debrief on these difficult cases. The managers aren’t there, so they kind of made me feel a little bit less pressure to say, well, I wish I had done this and I probably should have done that, but I didn’t do it or I’m taking home.
03:13:47.720 --> 03:13:48.314 You know,

03:13:48.314 --> 03:13:50.096 this one patient and I just

03:13:50.096 --> 03:13:51.750 don’t know how to shake it,

03:13:51.750 --> 03:13:53.598 and it’s an opportunity for them

03:13:53.598 --> 03:13:55.399 to really talk through the case.

03:13:55.400 --> 03:13:57.784 And I think sort of let let it

03:13:57.784 --> 03:14:00.266 go and then hopefully over time

03:14:00.266 --> 03:14:02.972 that can help reduce the burden

03:14:03.055 --> 03:14:05.230 that they might be failing.

03:14:05.230 --> 03:14:07.806 There’s also a lot of resources within

03:14:07.806 --> 03:14:09.550 various organizations for employees,

03:14:09.550 --> 03:14:11.962 so you know there’s everything from

03:14:11.962 --> 03:14:13.570 meditation groups and mindfulness

03:14:13.636 --> 03:14:15.616 training and other resources that

03:14:15.616 --> 03:14:17.596 genetic counselors might even have

NOTE Confidence: 0.8475121

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within their own institution that are available to help support them and deal with some of the emotional burden that might come from, working with patients with giving difficult news and all of that goes with it. So you know, I definitely encourage you students and our genetic counselors or new genetic counselors in the field to really tap into those resources, 'cause that’s what they’re there for. Alex, can I just make that announcement real quick?
It's not handful of questions on being an international applicant. It's probably not within the scope of today's talk, but reach out to me. You know if you have any of those questions. I was an international student. I'm on a visa currently and I also Chair the International Special Interest Group of NSG and we have a couple of resources that we can share with you if you have specific questions. My name is Arpita. And feel free to email me.
And I think I saw this question twice now, but people had asked what made someone go into their specialty, especially since as genetic counselors are training, is all really the same. But then we can go down different paths. So if anyone wants to talk about that.

I can go first and speak from cancer genetics. So the reason why I chose Cancer Genetics is because for me, I was more interested in the prevention part of genetic testing and something that really stuck with me was when before I applied.
Grad school I was shadowing with a genetic counselor who worked in cancer and she said that you know, cancer genetics is one of the specialties in genetic counseling that actually can be preventative. Or lifesaving in terms of preventing cancer? So when, so that really stuck with me and I think. I think in terms of that I like being able to work with patients to actually change outcomes in terms of cancer because I do see it as very important work I do like.
in terms of cancer genetics that.  
It is, it is something I autonomous  
so we talked about pediatric genetics  
and in some parts of cardiac genetics  
there’s work with a Jeanette Assist  
In general there’s not really  
we’re doing a combined deployment,  
which is a little bit different.  
So essentially that was my perspective  
on when I was in grad school and I was  
experiencing different types of rotations.  
Why ultimately decided to?  
Pursue cancer.  
Yeah, I would really use
a lot of the rotations as your as a perspective students opportunity to really explore what each specialty looks like.

What are aspects of the rotation that you really like that you would want to see in a full time position when you graduate? What are you know types of the rotations that you don’t really mesh as well with, so that when you’re applying to positions you can say you know what I really liked, that I had autonomy.

Or I preferred to work closely with the geneticists and that can help narrow down what specialty might
be a better suited for someone.

What I also would say is that if there is a specialty that you’re going into Graduate School, known that you really want to be a part of upon graduation to maybe choose your thesis or Capstone project in that specialty area, or if you have an opportunity to do an extra clinical rotation, choose it in that specialty. Any school that affords you to you know, work in that specialty. And so when we’re hiring people, I really like to see that someone’s
had cancer experience, not just through the rotations, but they've done. They chose to have their thesis in that specialty as well. So much like you're all thinking about how to make my application the strongest to get into school, we're also looking at how did you use school to get into, especially that you might want to be interested in landing an, you know, doing everything you can to then strengthen that application from.
the day one of you starting school.

To the very end.

So if there was journal clubs

choose it in the specialty that you

liked it in and put that on your

resume and you know things like that

are all opportunities and things that

we look for as an employer to see

that people are sort of recognizing

what things were going to work well.

Then they can speak to that

during the interview process.

I think I’d like to add

that it’s great for people to

be open to new experiences too.
I know plenty of genetic counselors that really were quite confident they knew what they wanted to do after they graduated. But then, perhaps there wasn’t a job available in their very restricted geographic area that gave them that opportunity, so they just took a chance and tried something that they actually thought they wouldn’t like. Needed that paycheck and then lo and behold, they really enjoyed it and now they stayed in it even though they.
03:20:06.125 --> 03:20:07.955 had an opportunity to switch out.
NOTE Confidence: 0.9130834
03:20:07.955 --> 03:20:09.788 So I think that’s what’s great
NOTE Confidence: 0.88612
03:20:09.790 --> 03:20:11.310 about being in training programs
NOTE Confidence: 0.88612
03:20:11.310 --> 03:20:12.838 that you'll have an opportunity
NOTE Confidence: 0.88612
NOTE Confidence: 0.88612
03:20:14.452 --> 03:20:16.467 You’re also see that you
NOTE Confidence: 0.86132646
03:20:16.470 --> 03:20:18.516 know being a cancer genetic counselor
NOTE Confidence: 0.86132646
03:20:18.520 --> 03:20:20.584 at one setting could be very
NOTE Confidence: 0.86132646
03:20:20.584 --> 03:20:22.296 different than being a cancer
NOTE Confidence: 0.86132646
03:20:22.296 --> 03:20:24.008 genetic counselor at another setting.
NOTE Confidence: 0.86132646
03:20:24.010 --> 03:20:25.384 Just says for me,
NOTE Confidence: 0.86132646
03:20:25.384 --> 03:20:27.100 prenatal counseling in one center.
NOTE Confidence: 0.86132646
03:20:27.100 --> 03:20:28.809 Very different in one center,
NOTE Confidence: 0.86132646
03:20:28.810 --> 03:20:30.870 you might be imbedded in the
NOTE Confidence: 0.86132646
03:20:30.870 --> 03:20:32.682 genetics department and have.
NOTE Confidence: 0.86132646
03:20:32.682 --> 03:20:33.588 15 colleagues,
03:20:33.590 --> 03:20:34.664 including geneticists and
03:20:34.664 --> 03:20:35.380 genetic counselors,
03:20:35.380 --> 03:20:37.330 and in another setting you might
03:20:37.330 --> 03:20:39.081 be the only genetic counselor
03:20:39.081 --> 03:20:41.016 working with OBGYN’s so that
03:20:41.016 --> 03:20:43.327 experience and what you share with
03:20:43.327 --> 03:20:45.409 your classmates will also help to
03:20:45.409 --> 03:20:47.910 teach you like what makes me
03:20:47.910 --> 03:20:50.046 comfortable at this stage in my
03:20:50.050 --> 03:20:52.306 career, because who knows what you
03:20:52.306 --> 03:20:54.861 might want five years in two years
03:20:54.861 --> 03:20:57.212 in and what’s exciting is, I think
03:20:57.212 --> 03:20:59.718 there’s a lot of opportunity for people
03:20:59.720 --> 03:21:01.148 to kind of pivot
03:21:01.150 --> 03:21:02.578 as they go through
their profession as a genetic counselor. And try new and exciting things along the way and expand their skill group and their confidence. You know with every new experience. Yeah, I think that’s really nicely sad, and some of our panelists here have. You know, had various genetic counseling roles, not necessarily in the same specialties, so I think the flexibility is also another draw to the field. Having one degree doing many different things, but. Thinking about. Wrapping up this event.
and genetic counselors looking to the future, one of our participants asked. What we think the future of genetic counseling more will look like, which is a very broad question. So does anyone want to take a stab at? Any hunches they have or? And what they think will change or stay the same. Or I can talk a little bit. I’m Lamsam’s counterpart in the general genetics clinic.
of groups that are kind of working on how genetic counselors are going to fit into a more. So I think that’s somewhere that we’re going to expand into in the future where we’re helping asymptomatic individuals decide what type of genetic testing would be helpful for them. And I’ve seen some questions about whether or not we address things like Nutrigenomics and I think there’s a lot of possibility for genetic testing to extend into those types of rules we traditionally haven’t really had.
A lot of exposure to that and many of us don’t necessarily have the expertise to go in depth for counseling on nutrition mix for example, or microbiome testing, but I think in the future, as we add that into curriculum and more of us become exposed to it over time and there might even be guidelines one day on that type of testing and counseling and how to give those types of results back or interpret them. I think that’s somewhere that we could even move into in the future.
the future too.

Think along those lines,

there is a really good article about looking into 2030 like the future of genetic counseling and I'll try post the link on the chat, but it talks about how Genetic counselors are expecting people to have genomic information at their fingertips. It’s all going to be digitalized and you know, patients might have their raw data, or you know their genetic risks easily accessible, and so genetic counseling might have to follow that as well. Like, how do you make sure
03:23:54.605 --> 03:23:56.270 genetic counseling is as easily
NOTE Confidence: 0.8696221
03:23:56.270 --> 03:23:57.266 accessible to patients?
NOTE Confidence: 0.8696221
03:23:57.266 --> 03:23:59.270 So that’s a really cool article.
NOTE Confidence: 0.8696221
03:23:59.270 --> 03:23:59.600 I’ll
NOTE Confidence: 0.855418
03:23:59.600 --> 03:24:02.270 try to post it in the chat now.
NOTE Confidence: 0.86563754
03:24:09.710 --> 03:24:11.562 Things are, but I’d actually
NOTE Confidence: 0.86563754
03:24:11.562 --> 03:24:14.220 really be curious to to read that,
NOTE Confidence: 0.86563754
03:24:14.220 --> 03:24:16.602 and I’m sure everyone attending here
NOTE Confidence: 0.86563754
03:24:16.602 --> 03:24:19.050 today would also be interested.
NOTE Confidence: 0.86563754
03:24:19.050 --> 03:24:20.688 So anyone have any final
NOTE Confidence: 0.86563754
03:24:20.688 --> 03:24:22.328 thoughts that they’d like to
NOTE Confidence: 0.86563754
03:24:22.328 --> 03:24:24.299 share words of words of wisdom?
NOTE Confidence: 0.86563754
03:24:24.300 --> 03:24:26.596 I’m sorry we didn’t get to all
NOTE Confidence: 0.86563754
03:24:26.596 --> 03:24:28.564 of those questions, but again,
NOTE Confidence: 0.86563754
03:24:28.564 --> 03:24:32.008 do you feel free to reach out?
NOTE Confidence: 0.86563754
To any of us here on the panel, but good luck if you’re applying for this upcoming cycle. Good luck in the future if you plan to apply and anyone else is welcome to say last words before I end the event and I will send out that survey. A survey will have a couple of questions for you and your reward for helping us improve the event will be a link to the recorded. A recording of the event, so thank you for coming. Just wanted to echo Alex and just say it was a pleasure talking with everyone you know. And please don’t be a stranger.

NOTE Confidence: 0.88219917


NOTE Confidence: 0.88219917

03:25:21.984 --> 03:25:25.193 Everyone here on the panel loves talking

NOTE Confidence: 0.88219917


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NOTE Confidence: 0.88219917

03:25:28.885 --> 03:25:31.488 No, please don’t be a

NOTE Confidence: 0.88219917

03:25:31.488 --> 03:25:33.636 stranger we we absolutely.

NOTE Confidence: 0.88219917

03:25:33.640 --> 03:25:35.680 I mean, I think it’s because

NOTE Confidence: 0.88219917

03:25:35.680 --> 03:25:37.520 everyone we love this field,

NOTE Confidence: 0.88219917

03:25:37.520 --> 03:25:39.907 I love this field just because of

NOTE Confidence: 0.88219917

03:25:39.907 --> 03:25:42.108 how many different facets there are,

NOTE Confidence: 0.88219917

03:25:42.110 --> 03:25:45.287 and I just I just respond to a question.

NOTE Confidence: 0.88219917

03:25:45.290 --> 03:25:48.106 But obviously you know the field we need.

NOTE Confidence: 0.88219917

03:25:48.110 --> 03:25:50.574 We need more diversity in the field.

NOTE Confidence: 0.88219917

03:25:50.580 --> 03:25:52.350 There was a recent report,
the accident report that came out that was disappointing in terms of there's not enough inclusion and is not enough of positive response to diversity in the genetic counseling field. So really, we need genetic counselors of all different backgrounds, you know? Different educational backgrounds, different jobs, different races, different gender expressions. We need all those different aspects actually strengthen the field. So I'm really excited with where genetic counseling can go and where it will go. So definitely don’t be a
stranger with any questions, any concerns, and it was a pleasure. Talking with him, talking to all of you.

Alright, thank you everyone. Possibly see you next year but stay tuned and have a good weekend.

Bye.