Dr. Theodorea Regina Berry:

Hello everyone. This is Dr. Theodorea Regina Berry, vice provost and dean for the College of Undergraduate Studies. And welcome to Academically Speaking. Today my guest is the one and only, Dr. Michael Gilbrook. Dr. Gilbrook joined the Faculty of Interdisciplinary Studies in August 2003 to teach two courses in geographic information systems, GIS, for the Environmental Studies Program. He has over 35 years of experience using GIS for a variety of environmental planning. I'm going to try that again. Facility siting and environmental impact analysis for both the public and private sectors. He holds a PhD in conservation biology from the University of Central Florida and is an AICP Certified Planner. And we're going to talk about what that is in a minute. And A GISCI certified GIS professional.

In addition to the two introductory GIS courses, Dr. Gilbrook also teaches online sections of GIS 4314, GIS Research Methods and Environmental Studies. EVR 3008, Foundations in Environmental Studies and EVR 4940, Capstone Experience in Environmental Studies. Dr. Gilbrook says he gets tremendous satisfaction from the many former students who have found success in their academic or professional careers using the GIS skills they learned in the UCF Bachelor of Science and Environmental Studies Program.

Welcome Dr. Gilbrook.

Dr. Michael Gilbrook:

Thank you Dr. Berry. It's good to be here.

Dr. Theodorea Regina Berry:

It is so good to have you. And I've had the opportunity to talk to many of your fellow colleagues in interdisciplinary studies as we focus on celebrating our faculty during our podcast series. And we've also had the opportunity to talk to a number of students to include one of your current students, Nicole Boisson, who was the recipient of the Order of Pegasus Award, as well as the Founder's Day Award for the College of Undergraduate Studies, and credits you for many of the things that she's been able to accomplish as a student in her time here at UCF. And she is a rising senior and prepared to move through her life with all the things that she has learned in your courses and others in the program.

So as we think about all the things that our students have gained from the opportunity to engage with you, I am sure that there are lots of things that you have gained over the course of your experiences and careers that have been beneficial to yourself and that have been passed on to our students. So tell us a little bit about your background and the things that you have garnered, particularly as someone who has earned degrees here at UCF.

Dr. Michael Gilbrook:

Okay. So we were talking earlier before we turned the cameras on about the age of Millican Hall. I was almost a plank owner. I wasn't in the first class at UCF, but wasn't too much longer after that. I started as an undergraduate here in 1975. Got my BS in biology, actually in a specialty of biology that we no longer have now. It's limnology, which is the science of freshwater ecology. It's like oceanography for freshwater. So if you think of oceanography for lakes and streams, [inaudible] limnology.

So I got my degree in limnology in '78, moved straight into a master's of biological science and left UCF with that in 1981 and went straight into a job with the state of Florida as an environmental scientist, actually replacing another UCF graduate who moved on to a new job. So we were able to keep up the UCF tradition in that role. And worked in that state environmental scientist position for nearly five years and pretty much doing what I was trained to do as a freshwater ecologist.

Along the way, I was on a committee to look at the problems related to the Indian River Lagoon. I represented the Department of Transportation on that, and I came to the attention of somebody at the East Central Florida Regional Planning Council. He was looking for somebody who could help with the preparation of their regional policy plan. This was a new thing the legislature had recently required. So we talked and I realized this is a good opportunity. So I went from being an environmental scientist to being more of an environmental planner. So not really go out in the field anymore, not really going out and doing hands-on environmental science, but using what I'd learned to help develop policy and planning.

Did that for about eight years. And while I was there, the Regional Planning Council was one of the first government agencies in the state of Florida to experiment with using a geographic information system that was based on a microcomputer, on a PC. Up to that point, GIS was something you could only run on a minicomputer. Those, despite the name huge, they were the size of a refrigerator.

Dr. Theodorea Regina Berry:

Right, right.

Dr. Michael Gilbrook:

Yeah. So doing GIS on a microcomputer, on a desktop PC was something that was a new thing. And we had a pilot program. We worked with some other state agencies on that and it was very successful. And we ended up, while I was there at the Regional Planning Council, we ended up using GIS on a lot of environmental planning problems while I was there.

At the end of about eight years, again, I found myself working with some folks on a project that were from the private sector and there was an opportunity there. They needed somebody like me. And so I left the RPC, went to that engineering firm, which was also many engineering firms now also do environmental and planning work, and ended up being there for 28 years. Along the way in 2003, one of my old professors here contacted me and said, "There's a program here at UCF that wants to teach courses in GIS and they don't have anybody to do that. Would you be interested?" And I said, "Wow, that sounds great. I would in fact be interested in doing that."

Because one of the things I'd learned along the way as being a supervisor who was having to hire people, is that many of the people I was looking at as candidates were not particularly prepared. They'd had a GIS course or two, but really didn't seem to know how they would apply it. So one of the things I wanted to do was help develop a curriculum where the people, the students that came out of that program would be prepared to almost on day one, to be able to put what they learned in GIS to use no matter where it was that they went to work. So I've been teaching since 2003, became full-time in 2021. Essentially semi-retired by leaving the environmental engineering firm. And I've been here full time since August of 2021.

Dr. Theodorea Regina Berry:

Excellent. Okay. First of all, I have to say that GIS was probably something that a lot of people in your field and similar fields knew a lot about a number of years ago. But as a social scientist, and particularly as someone who particularly gets engaged in more a theoretical way of understanding things, it was a completely new concept to me about 10 years ago when one of my colleagues, who is someone who does work around the sociology of education, started using GIS to figure out the landscape in California around the way in which schooling and race work together.

I was completely fascinated by the use of something that was completely outside of what most of us in the social sciences do, fitting in now to understanding how social groups and systems work and how

institutions and governments influence some of those things and using GIS to figure those things out. So it was completely fascinating to me that research around that has now expanded into a lot of other fields. So tell us a little bit about your own research and the ways in which you may or may not use GIS incorporated into your research.

Dr. Michael Gilbrook:

Sure. It's interesting you say that because when I first got introduced to GIS, I'd never seen it before and only read a little bit about it. And a lot of people that meet me over the years have assumed that this is something I took in college. It's like no, many of the people in my generation learned it on the job. Now it's being taught in schools, there are people that get degrees in it. But many of the people that were on the ground floor, they were experts in something else first and only became interested in GIS later when they saw "This is something that can help me solve some of the problems I have as a," and then name the field, environmental scientist or social scientist or political scientist.

One of the things I like to tell my students in the classes we teach is that GIS is a tool for answering questions. It's not for making maps. Maps are the byproduct that helps you communicate, which you've learned. And it's not a green tool. A lot of people make the mistake of assuming that it's only something used by environmental scientists, but in fact, there's lots of problems that have what we call a spatially explicit aspect to them. They're somehow tied to geography. And social science is clearly one of those. So anytime you have a problem where where things are in space is part of the issue, then GIS is something that can help you with that.

As far as my own research goes, my doctoral research for my PhD, I was really interested in the idea of how urban sprawl was affecting the environment in Florida. And this is something that I've been worried about since my days at the Regional Planning Council. So I did a statewide study, looked at all 67 counties of the state and used some tools that came from the landscape ecology toolbox. They have metrics that are used to determine how broken up like a forest may be. I realized you could use those same tools to look at urban sprawl. You could characterize one county versus another as being more or less sprawl-y based on those metrics. So that was my research that got me my PhD.

Since then, working as a consultant, I didn't really have a big opportunity to do a lot of original research, but I had an opportunity to work on a lot of great projects, mostly for cities and counties using GIS. A couple of the ones that I was involved in just before I left to come full-time at UCF was a project to help identify the gaps in the electrical vehicle charging networks throughout Florida. There's, right now, as you may know, the Congress passed and President Biden signed the big infrastructure bill that's putting millions of dollars into locating new electrical vehicle chargers to make it easier for people to find a place to charge. So I was part of the study in Florida to try to figure out where are the gaps-

Dr. Theodorea Regina Berry:

And there are gaps.

Dr. Michael Gilbrook:

Yeah, and there are some big gaps. So we use GIS for that.

Another study that I'm quite proud of that we wrapped up just before I left to come to UCF was a study of the effects of sea level rise in the Florida Keys. The county down there was very concerned about what's going to happen to our roadway network and other infrastructure if sea level rise continues as projected? And the results are pretty scary actually. So we use GIS extensively to study that problem. Yeah, I'm interested, I've worked with some of my other colleagues where I can help out with providing them some GIS assistance on their research and looking to get more involved in that.

Dr. Theodorea Regina Berry:

And I find it absolutely fascinating, for a couple of different reasons, because one, I'm a bit of a geeky nerd when it comes to research, so I get super excited about how people are investigating certain answers to questions. But I'm also thinking about the ways in which this very practical tool really has the empower to impact on our everyday lived experiences. For instance, I live in a really new subdivision. I can't even imagine all the things they had to tear down to put up these homes. And now they're having to expand the roads around my community because traffic flow has increased and all the trees that went down and the absence of this vegetation and how it might be impacting now on the environment in my community. And now we're seeing tons and tons of cranes and other indigenous birds that I don't know anything about because I'm from Philadelphia. So I've never seen these things before. We see deer, but we don't see all these other exotic birds.

And even as, I love to visit Italy, and I go to Venice often, probably more often than most, but rising sea level is a huge issue in that area and the way in which now people are worried about very important landmark structures having to succumb to the sea water and what they're going to do. And I can only imagine how GIS is really informing many of the decisions that people are now making around where they put in new houses or infrastructure for new communities and how they expand roadways and how to protect landmark buildings and all kinds of other things. And so as we think about that, I want to go back to something that I saw in your bio that I found really fascinating, and that's this AICP Certified Planner. So that tells us something about your experience and particularly as we talk about some of the projects that you've been involved in. So tell us first of all what that means and what it enables you to do in relationship to your work.

Dr. Michael Gilbrook:

Yeah, good question. In government and in the private sector, your academic qualifications once you've reached whatever the requirements are for whatever the job is, are less important to people than many of the additional certifications that you've obtained that show that you've reached a certain level of proficiency in whatever field you're working in. In the planning world, the American Institute of Certified Planners, as its name suggests, certifies that people that are working in the planning industry have met certain minimum requirements. There's a big exam required that is a very comprehensive and very difficult, as well as sort of a portfolio requirement that you've got a certain number of years of experience in planning.

So I had been working at the Regional Planning Council for, as I mentioned earlier, eight years, and then was at the environmental consulting firm for a number of years. And I realized "I have now the necessary background to qualify for the AICP." So I went ahead and studied and took the exam and got the certification. And basically it's just like so many other certifications, it's a differentiator. It maybe opens a door sometimes. When people are looking at... I tell my students this a lot, if they're looking at your resume and you got the GIS certificate that we offer here at UCF and your resume otherwise looks very similar to somebody else who doesn't have that, an employer might go, "Very hard to see the difference between these two candidates, but I'm going to use this as a tiebreaker and go with this person that has the GIS certificate."

Everybody's the same way. Clients and cities, counties, if they see that here's a team that's coming in, how many of that team are AICP Certified Planners? I'm going to feel more confident about the planning advice and recommendations I'm getting, if there's more AICPs on that team than the one that doesn't have any absolute. So it looked like it was a good career move. And in fact, I have anecdotal evidence that supports this. I was in a meeting one day with a friend of mine who I'd used to work with at the Regional Planning Council. We were talking to this city and we were passing out our business cards and

the city manager picked up my business card and he says, "Oh, I see you're an AICP." He says, "That's really great. I'm really glad to hear that." And he put it down, and as I walked out, my buddy said, "Yeah, maybe it's time for me to get one too."

Dr. Theodorea Regina Berry:

Yeah, absolutely. I was paying attention to what you were saying, and it struck me that it's clear that your experiences and your knowledge and expertise are being passed along to your students because you're sharing with them things about earning a certificate and how to put together their resume. So tell us a little bit about why you like teaching.

Dr. Michael Gilbrook:

I think everybody who's a teacher, probably that's kind of a hard question to answer because it's just part of your being. I've naturally always liked helping people solve problems, which is one of the things that attracted me to GIS actually, helping people answer questions, training other people on something. So I've been informally working as a teacher for a long time. As I mentioned, when I was approached about, "Would you be interested in helping teach these courses for the Interdisciplinary Studies Program?" I realized I could do a better job at helping students prepare to be candidates to come talk to me than some of the folks that they're currently seeing. And it is not at UCF, but at other institutions where they were teaching GIS.

I was just motivated by a desire to try to provide students that kind of background and also instill in them the interest in this field that I have. I get a lot of feedback from students about, I'm very passionate about the field, but one of the things that I think shows that we're being successful is that most of my students come in having no idea what this technology is. I even ask them in the first night of class, it's like, "How many of you even googled it?" I might get one or two people raise their hand. And by the end of the semester, not only are a lot of people enthusiastic about the tool and they see how it integrates with their environmental studies program and they realize why it's a part of the environmental studies program, not only do they see it being a valuable tool, but somewhere between 25 and 30% of them decide, "This is what I want to do as my career after graduation," which was not the plan. We didn't expect to make people into GIS professionals, but I'm okay with that.

Dr. Theodorea Regina Berry:

That's a nice bonus. Right?

Dr. Michael Gilbrook:

Yeah. I won't-

Dr. Theodorea Regina Berry:

It's the icing on the cake.

Dr. Michael Gilbrook:

I'll agree with that.

Dr. Theodorea Regina Berry:

Okay. Excellent. So you said something in your response that caught my attention and that is this notion of being passionate about something. Some of us would refer to that as a true calling. So how do you

find that GIS became that thing for you, that you got not only attached to, but start to feel passionate about passing along to others?

Dr. Michael Gilbrook:

Right. When I first came to college, trying to figure out what I wanted to do as a major was not particularly easy because I had so many different interests and I immediately had to eliminate a lot of things like engineering, because I'm just not very good at math. I tell my students, I joke with my students, "You don't have to be very good at math for GIS because I have a 46 percentile score on the GRE on math. So you don't have." But I always had an interest in biology. And so I ended up gravitating towards that.

When I became aware of this GIS project that we had at the Regional Planning Council, and I realized there are all these problems in biology or environmental science where this is going to be a really great tool for solving problems faster and better than we could do using any kind of manual technique. Give you an example. One of the practical things that came up while I was there is we had people that were complaining about our definition of what constituted a regionally significant wetland. And without going into all the details, we were able to use GIS to look at the size distribution of all the wetlands in a six county area in a matter of weeks we were able to do the entire study. How long would it have taken without computer technology?

Dr. Theodorea Regina Berry:

And how much time would you have to spend in the field?

Dr. Michael Gilbrook:

Yeah, well, or even-

Dr. Theodorea Regina Berry:

[inaudible] when it rains?

Dr. Michael Gilbrook:

Just looking at aerial photos, how long would it take you to figure out how big? When I used to work at the DOT and we would work on developing a permit to impact wetlands, which was one of the things the environmental group did. My colleagues would spend weeks laboriously measuring the area of each wetland by hand. And that's something that with GIS you can do in a matter of a warning. So it just made a lot of problems that you were interested in suddenly achievable, you could do them much faster, much easier. Some things that you would just be essentially impossible to do suddenly became possible.

The more I looked at it, there were more and more things that I was interested in doing first at the Regional Planning Council and then later on at the engineering firm that just... And GIS just was the tool to help you solve it. It's like if you're a financial analyst, a spreadsheet is your tool, and without a spreadsheet it's like, "Yeah, I could do this. I could use an abacus. Sure, yeah, I could get to the answer, but look at how long it's going to take me and look at how all the kind of analysis that I could do with a spreadsheet that I can't do with an abacus." Having a spreadsheet suddenly makes enormous amount of financial analysis available to you very fast. And GIS is the same thing for environmental studies, but also anything that involves, like we talked, about spatial relationships, whether it's political science or sociology.

Dr. Theodorea Regina Berry:

So I'm going to take a slight shift here and talk about something that has hit the landscape pretty hard in higher education, and that's AI and specifically ChatGPT. You find that there are individuals on both sides of the argument in relationship to it and their concerns around what's happening with student learning in the midst of this new tool. And I'm going to refer to it as a tool because it speaks to my perspective, but talk to me about how artificial intelligence applies to GIS.

Dr. Michael Gilbrook:

Good question. Actually, AI has been something that's been on the horizon with GIS for many years before it became popularized with ChatGPT. And it's used in a number of ways, some of which are esoteric and hard to explain, but the easiest one to explain, and perhaps the most powerful one that's used the most is what's known as object classification or automatic object identification. When you are trying to do something like a land use map, say, or, let me think. Even better, say you were trying to identify all the building footprints for an entire county, and if you go online and you look at Google Maps and whatever, you can see the building footprints, the outlines of the buildings. How did they get those?

It used to be that you had to have humans laboriously trace those. We call that digitizing, and we teach students how to do that in GIS, but they had to laboriously trace each one of those. You can imagine how long would it take to do the campus or the entire county or the entire country, it'd take an enormous amount of effort by a lot of people. You can actually train an AI to recognize how to tell the difference between a rooftop and the area around it, the grassy area or the parking lot around it. And once it recognizes how to identify the rooftop, it can digitize that rooftop for you like that. It can digitize hundreds of thousands of them in a matter of an hour.

That's how all the building footprints in the US have been done. And there's people using that kind of object classification for finding wetlands or other kinds of structures, finding wildlife corridors, anything where you could teach the machine how to recognize the thing I'm looking for. And it's basically you're trying to teach it the same thing you would be teaching a human operator, you say, "This is a good one, these are not, those are good ones, these are not." And it doesn't initially understand, but as you give it more examples, it finally figures out its own rules for "Oh, I see."

And we don't necessarily know what those are, which is one of the mysteries of AI is somewhere inside its figured out how to tell the difference between a roof and the grassy area next to it. We don't know exactly how it's done it, but we've given it the training samples that have allowed it to learn that. And that's been a very powerful technique that's used a lot. It's used a lot.

Dr. Theodorea Regina Berry:

Excellent. So we live in Florida and amongst all of the wonderful attributes of living in Florida, the sunshine and the weather and so forth and so on, we also live in an area that has to deal with disaster by way of hurricanes. And your explanation around AI and this object identification that it does, I suspect has some usefulness in relationship to disaster management. Can you talk to me a little bit about that?

Dr. Michael Gilbrook:

GIS has been involved in disaster planning, response and recovery, which are the three phases. Preparing for the disaster, dealing with the disaster as it's happening, and then recovering from the disaster. All three of those phases use GIS. Every major city and county in the country uses GIS to help with those three phases of disaster preparedness. And there's just a whole bunch of things that you can imagine might be used. For example, if you're preparing for a disaster, one of the things you have to do

is identify where are all the best spots to have the shelters so that people can evacuate. And we have to keep track of all of them and know what capacity there is and how many COTS and food and water do we have at each of those facilities. So the logistics of managing your preparedness is something you can manage with the GIS. Making sure that all the roadways that people will use to evacuate are not going to be affected by a storm or other disaster. And modeling how much traffic is there going to be on it? Again, this is all something that use at GIS.

When the disaster is in progress, you can in real time use GIS to track how are things going, how many people are in each shelter? Do we need to move people from shelter A to shelter B? We now have the ability to do what is known as a dashboard. You've probably seen some of these and not realize that behind the scenes there's a GIS running it. But if you go to a website where it's got counts and dials and a map, and it's showing you in real time. There was one for COVID, for example that showed where all the COVID cases were worldwide. And you could see lists of cities and the amount of cases for each city. That was all run by a GIS dashboard software product. So those are used extensively by county emergency response operations to track in real time what's going on.

And then the recovery phase, you have to go out and figure out what's been damaged, what do we lose? And one of the things we have there is the ability to send people out with their smartphones and collect data in the field that gets automatically added to a GIS website. And they can track, here's the places where the road washed out, here's the homes that have been damaged, here's the homes that are underwater, here's the trees that are down. I was involved in a project many years ago for a hurricane that hit South Florida, and we were using GIS to evaluate where all the trees were down. And then there was another operation that was not using GIS and FEMA thought our data was so easy to understand and was so well done that they wrote a check for the county before the team that had done the work before we came on site, they had submitted theirs earlier and their check didn't come until much later.

So GIS was able to not only help us do the job faster, better, cheaper, but it actually produced a better product and got help for the county involved faster than the team that didn't use. So it's used extensively. Disaster preparedness and response is one of the huge, huge, huge areas where GIS has become very important.

Dr. Theodorea Regina Berry:

And one of the things that I found fascinating about that was the first time that I actually worked with individuals who were impacted by a major disaster here in Florida, I was working for the federal government and overseas at the time, and there were military personnel who had to be reassigned to Germany from Homewood Air Force Base when the hurricane came through and leveled that Air Force base to basically nothing. And many of those service members and their families had absolutely nothing when they came to Germany. And we had to in process them and figure out where to assign them in those kinds of things. And even though we were thousands of miles away, the impact of that was felt literally all over the world as a result of one military installation getting leveled. But the way that the military was able to respond to that so quickly was phenomenal as well. And I'm sure that GIS had something to do with that.

Dr. Michael Gilbrook:

Certainly on the... And you're right, that base is gone today, they decided not to rebuild it. The military uses GIS extensively. All the armed forces, Marines, Air Force, Navy, they all have their own GIS teams. And one of the things that they're very active at doing is digitizing, putting all of their bases into a GIS. So they can do what's known as facilities management. They can track every building. They know what

every building, what its purpose is, whether or not it has air conditioning, how many floors it's got, how many desks it has in it. Everything that they need to know about every structure is put into the database. So whether they're planning, like they're moving somebody from one department to another or they're having to deal with a disaster, all of that information is available to them. So yeah, it's used extensively by not just the military, the entire federal government has an enormous investment in GIS.

And I think this is one of the reasons that students become attracted to this as a field, is they've already got an interest, the ones that we see in the program in environmental studies, and then they see there's so many different opportunities where having GIS skills doesn't narrow your focus, it actually opens you up to being... The same techniques and tools I could use in the environmental field, I could just as easily be using for facilities management or for helping Popeye's Fried Chicken find where's the best place to put a new franchise. The same tools that you would use for this could be used by all these different endeavors. It allows you to widen your opportunities for future employment. It doesn't narrow them.

Dr. Theodorea Regina Berry:

Okay. What advice would you give students thinking about pursuing environmental studies?

Dr. Michael Gilbrook:

That's a good question. One of the things I think students need to do is be open to new ideas, new opportunities. Don't too early try to close yourself off to one particular line of interest. A lot of students, when I first meet them, they say, "Oh, I want to work outdoors with animals." I could count probably on two hands the number of people I know who spent their careers working outdoors with animals. There aren't too many opportunities like that. Another thing I often hear from students is, "Oh, I don't want to work at anything that involves working in an office or on a computer." Well, sorry, but-

Dr. Theodorea Regina Berry:

Welcome to the 21st century.

Dr. Michael Gilbrook:

Yeah, exactly right. The engineering and environmental consulting firm I worked had over 10,000 employees. About a third of those were environmental staff. There wasn't a single one of them who didn't have a PC assigned to him or her, all of them came back to the office at least part of the week to work on that computer. All of them did. There wasn't a single one who spent all of his time or her time outdoors with animals. You got to be ready to look at being prepared for... Learn as much as you can about as many... It's good to specialize, but it's also good to have a wider perspective so that you can shift and redirect as necessary. If you see an opportunity, you're prepared to do that.

But the environmental studies field, environmental science field, there's so much variety. It's so wide open. There's lots of opportunities in many different subareas. As we all know, sustainability now is finally a term that is becoming popular with more than just a small segment of the population. So more and more students I've seen, as I follow their careers on LinkedIn, are becoming sustainability experts and getting positions where sustainability is in their title. And that's huge. And again, these folks being kind of a generalist, having a good grounding in environmental studies and environmental science is important, but also being able to see the big picture and being able to go outside of this narrow field of interest is important to somebody working in the sustainability field. They have to look at sustainability as something that affects everything an organization does.

So you have to be open to learning about all sorts of... You have to learn about, if you're working at a county, what is it that solid waste department does? What is it that the public works department does? I

can't help them be sustainable if I don't have... And a better understanding of what they do. So you have to be open to new stuff.

Dr. Theodorea Regina Berry:

Yes, that is absolutely important. And I realize how sustainability has become something that people are engaged in more conversations about, even in the common workspace, common marketplace, and not something that my parents used to refer to as the hippie dippy thing. Where "Oh yeah. That's a hippie dippy person who's saving all their scraps and using them for compost to grow their own garden. We don't do that."

And it's interesting because as we've seen it evolve, we've also seen sustainability evolve globally. Where years ago when I was living overseas, everyone recycled in Germany. Everyone. And there was a day where they picked up regular trash, a day where they picked up the clear glass, a day where they picked up the colored glass, a day where they picked up the paper. And it was expected, it was a part of the culture. And so now here we are years later where it's becoming part of the culture in the US now, and people are becoming much more concerned and involved in the ways in which sustainability impacts on their everyday lived experience.

So when we think about students who are earning degrees and about to graduate with a degree in environmental studies, what career advice would you give to those students as they prepare to walk across the stage?

Dr. Michael Gilbrook:

Oh, dear. Yeah, as I mentioned earlier, when you're looking to get a job, some of our students go on into graduate school, and so that's a little different. So let's think about just the ones that are looking to go straight into a job. You want to think in terms of how do I differentiate myself from all the other candidates who are going to be competing for the same positions I'm interested in? There needs to be something. Employers get a deluge of resumes, whether it's electronic or paper. Most of them are electronic nowadays. But applications, they get swamped.

And there's some things that are differentiators on the negative side, some things that will end up having your resume or your application rejected, and you don't want to be in that group. And this is something I try to make clear to my students, both in the GIS classes I teach, but also in the environmental studies classes, and particularly the Capstone class, their final experience before they go off into the world outside UCF. Don't be the person whose resume has spelling errors or grammatical errors in it that is going to cause it to be tossed.

One of the things I tell people is, "If you're going to cite your GIS experience as a plus, spell the name of the software correctly, nothing that's going to get your resume tossed faster. It's like you're purporting to be an expert at this software product, but you can't spell it correctly. That's going to get your resume tossed." So step one is be detail-oriented. Look at all the things that you're sending in, whether it's electronic or on paper, and make sure you haven't made any dumb mistakes that are going to cause your resume to be discarded.

And then you have to think about, "Okay, that's the negative, the side of differentiation. What can I do to positively differentiate myself? So what you want to do is promote what things are going to be there in your background or your resume that if they have a tough call, it's like, "Bob and Jane are just so similar," says the employer, but "Oh, Jane has that GIS certificate. Bob doesn't have one of those. Jane has that internship. Bob didn't do any of that." There's going to be things that you can do that are going to help differentiate you from the rest of the pack.

So look for those things that you can do, whether it's getting a certification not just in GIS, there's other certification programs that might be valuable to your career. Or whether it's a work experience. These are things that are going to make you look more attractive to a potential employer and make you stand out against perhaps hundreds of others.

Dr. Theodorea Regina Berry:

[inaudible] study of abroad experience that Dr. Plate does, right?

Dr. Michael Gilbrook:

Anything like that. I guess the last thing is you need to work that into your resume and your cover letter. It's not enough just list it. You need to point out in your cover letter, you need to call that out. Like "I did this study abroad program with Dr. Hawthorne in Belize where we used GIS and drones to map" and go on and on into what is the exactly you did. Because the employer's going to say, "Not only did you have a fun time in Belize, but you actually did something useful that relates to what we do." And that's what you're trying to get, is the connection.

Or "What he did there doesn't really relate to anything specifically we do. But it shows that he's trainable and he's open to learning new stuff. And that's what we want. We want employees that are going to be... We don't expect them to be automatons that are going to be, you put them into the line and they just function on day one. They need to be people that are trainable, that are open to ideas, that are flexible." And you want to be able to show that in your materials, whether it's your cover letter or your resume or your interview, you need to be able to promote, "Yes, I had this experience and here's how it helped me prepare to be a better employee for you."

Dr. Theodorea Regina Berry:

And I think all of those things are really important for our students, and especially those students who are preparing to graduate to hear. And sometimes it's the little things that make all the difference in the world. One of the pieces of advice that I give to students is comb through your social media and be careful about not only what you've posted, but the people who you friended and what they've posted, because it shows up on your page too. And if you have inappropriate things on there, people are going to be a little leery about how well you're going to represent their firm or their company or their organization.

And then when you show up for the interview, show up prepared. We still live in a world where it matters how you present yourself in professional spaces. And I'll use myself as an example. I was interviewing for a group of graduate research assistants to support the college, and there was one person who showed up in a professional attire, the shoes, and dress and whatnot. And I thought, "Even though this is somebody who's looking for an assistantship, they came in prepared to present themselves in a very business-oriented way." And that is something that whether or not they were best suited for the job certainly makes that person memorable.

All of those things are important, and we have all kinds of opportunities for students to learn how to prepare themselves for that, whether they go to the Office of Experiential Learning or Career Services for support and advice. If they go to Student Involvement for opportunities to do things like the volunteer UCF program that offers a lot of opportunities for students to not only use the skills that they have, but to learn new skills while serving the public to do service learning in one of their courses, or to do a research intensive course where they can build their research skills. Lots and lots of opportunities to really highlight their ability and adaptability to go into the workforce.

Dr. Michael Gilbrook:

Right. All those things help you on the positive side of the differentiation ledger. They all show the kinds of extra stuff that you've done to differentiate yourself in the crowd. So that's the positive. And what you said about the young lady who came dressed in a professional way, that's part of that. Don't shoot yourself in the foot even for a job that is supposed to be, for some that is maybe entirely field oriented. Don't come in dressed like you're going to go out in the field that day unless they ask you to do that. I actually did have an interview like years ago where we were going to go out and actually go in the field, and you had to be dressed for a field day. But if it's going to be a meeting in the office, dress professionally and avoid all the other things I mentioned earlier.

Don't give somebody an excuse to eliminate you for a silly reason. You want to put your best foot forward. You may have to dress up a little more than you feel comfortable or that will be necessary even once you've got the job. But you want to try to make sure, "If I'm going to lose this to somebody else, it's going to be because they were the better candidate, not because I messed it up." That's what you need to do, is go in, put your best foot forward mentality. "I did the best I could. She got the job because she was better qualified, not because I messed up." You need to be prepared that way.

Dr. Theodorea Regina Berry:

Absolutely. Okay, so some of the folks who know me know that I have interesting and eclectic taste in the way in which I view television programming.

Dr. Michael Gilbrook:

I think you and I could talk about this for a long time. As my students could tell you, I'm kind of a nut about movies. And so I find an opportunity to work movies into almost every lecture.

Dr. Theodorea Regina Berry:

I typically work music into almost every lecture I used to teach. But one of the things that happened not too long ago was I started watching an HMO Max, which is now considered Max for trademark purposes, a program that features Laverne Cox. It's a talk show type of format where she's interviewing up-and-coming artists, movie stars, that kind of thing. And the name of the program is called If We're Being Honest. And at the end of her conversation with whomever is sitting in the chair, she always ask, "Is there anything that I didn't ask that I should have asked?" So I'm going to ask you, did I miss anything? Is there something that I didn't ask that I should have asked that you would like to share?

Dr. Michael Gilbrook:

Oh, that's a toughie because this has been pretty comprehensive interview. Off the top of my head, I really can't think of anything you haven't asked that is something burning that I need to get out.

I guess I'll just emphasize that even though I came here initially to teach GIS courses, and that's mostly what I do. I do teach a couple of environmental studies courses. For those students who are watching this who have yet to take a GIS course with me or one of the other instructors, I would encourage you to look it up online and see what its potential is. We are not asking you to take a computer course that is far afield from your area of expertise or interest. This is going to fit right in with what you want to do with your career.

Like I said, usually, most students, I have a few that end up like, "Boy, was that a waste of time." But most of them come out of the experience realizing, "Hey, I understand not only, A, how to use this thing, but B, I now understand why it's part of this program." And I think the folks that originally required GIS

to be part of the curriculum, were really pretty smart. They saw on the horizon, "This is a tool that's going to be important to our graduates, so let's include some classes on it." I think that was a good call. And so yeah, we'll leave it there.

Dr. Theodorea Regina Berry:

Okay. So now we're going to enter what I call the speed round of our conversation. It's an opportunity for our listeners and our viewers to get to know you a little bit better on sort of a personal level.

Dr. Michael Gilbrook:

Oh, okay.

Dr. Theodorea Regina Berry:

And I'm just going to ask a few very simple questions. You answer with the first thing that comes to the top of your mind.

Dr. Michael Gilbrook:

Oh, okay. All right.

Dr. Theodorea Regina Berry:

Okay. Favorite color?

Dr. Michael Gilbrook:

Blue.

Dr. Theodorea Regina Berry:

That was a little obvious, right?

Dr. Michael Gilbrook:

That's easy.

Dr. Theodorea Regina Berry:

Okay. Favorite song?

Dr. Michael Gilbrook:

Favorite song. My favorite piece of classical music is Tomaso Albinoni's Concerto for Organ and Strings. And it's been adapted for lots of different... For guitar, [inaudible]. If we were talking about popular music, I grew up in Florida, it's hard to pick a single song, but the album A1A by Jimmy Buffett is the Florida experience. So I'd have to go with that.

Dr. Theodorea Regina Berry:

Oh, right. Excellent. Favorite artist?

Dr. Michael Gilbrook:

Favorite artist. Monet.

Dr. Theodorea Regina Berry:

Favorite actor.

Dr. Michael Gilbrook:

Favorite actor. That's tough. Gosh. The favorite actor du jour would be Michelle Yeoh.

Dr. Theodorea Regina Berry:

Oh yeah. She's phenomenal.

Dr. Michael Gilbrook:

She's done so great stuff.

Dr. Theodorea Regina Berry:

[inaudible] years.

Dr. Michael Gilbrook:

I was just extremely blown away by her performance in Everything Everywhere All at Once. And she so deserved that Oscar.

Dr. Theodorea Regina Berry:

Yeah. She caught my attention years ago in the Joy Luck Club.

Dr. Michael Gilbrook:

Yeah. She's done a lot of great stuff. Crazy Rich Asians. She was in that [inaudible] Bond film. That was her first American film. And she's also was a really great character in Star Trek, and she's going to be coming back.

Dr. Theodorea Regina Berry:

Loved her in Discovery.

Dr. Michael Gilbrook:

Yeah. Yeah.

Dr. Theodorea Regina Berry:

So in case you didn't know, I'm a huge Star Trek fan.

Dr. Michael Gilbrook:

Oh, okay. Well, we got that in common.

Dr. Theodorea Regina Berry:

And I'm excited and yet disappointed that the last season for Star Trek Discovery is happening next year. But they're bringing Michelle Yeoh back. I'm just like, "Yes."

Dr. Michael Gilbrook:
Yeah, yeah.

Dr. Theodorea Regina Berry:
And rumor has it, she's getting her own Star Trek series.

Dr. Michael Gilbrook:
I think it actually has become a Star Trek movie. I think they decided-

Dr. Theodorea Regina Berry:
It's a movie? Okay.

Dr. Michael Gilbrook:
Section 31, they decided-

Dr. Theodorea Regina Berry:
Section 31-

Dr. Michael Gilbrook:
After getting her Oscar, she's now so busy they can't get her to commit to a series. So yeah, so it's going to be a moving instead, but I think that's still going to be great because she's just wonderful.

Dr. Theodorea Regina Berry:
So now I'm watching Strange New Worlds, which I also-

Dr. Michael Gilbrook:
Oh yeah, that's been-

Dr. Theodorea Regina Berry:
Although I don't like the Kirk in Strange New Worlds.

Dr. Michael Gilbrook:
Yeah. Yeah. There's only-

Dr. Theodorea Regina Berry:
And I'm wondering how close they're going to get to conflicting with the Kelvin timeline, but that's a whole other conversation.

Dr. Michael Gilbrook:
That's another, I think, another podcast. I think we need to have another podcast on-

Dr. Theodorea Regina Berry:
Yes, just on Star Trek.

Dr. Michael Gilbrook:

Just on [inaudible].

Dr. Theodorea Regina Berry:

Okay. All right. Favorite book?

Dr. Michael Gilbrook:

Favorite book, actually, again, a couple of competitors there.

I think my favorite book would have to be Horatio Hornblower and The Hotspur, one of the books by C. S. Forester about this fictional naval captain during the Napoleonic War. So the Hornblower series was 12 books, and my favorite was Hornblower and the Hotspur, his first command as a young man. It's a great book.

Another book that I think of very highly and reread a lot is The Moon Is a Harsh Mistress by Robert Heinlein. It's about a penal colony on the moon that decides to become independent and form its own country. It's like 1776 all over again, but only on the moon. So it's kind of a neat story.

Dr. Theodorea Regina Berry:

Okay. Excellent. Favorite author?

Dr. Michael Gilbrook:

Favorite author would probably be... Again, a tossup between Larry Niven and Ben Bova, both of whom are science fiction writers. So we lost-

Dr. Theodorea Regina Berry:

My favorite science fiction writer is Octavia Butler.

Dr. Michael Gilbrook:

Oh, well, yeah. She's huge. Yeah, she's-

Dr. Theodorea Regina Berry:

Yeah, she's huge. And I'm not really a fiction person, but I got hooked on Kindred because I love this idea of time travel, and it was so historically accurate, it just blew my mind. I was like, "Okay, I'm done."

Dr. Michael Gilbrook:

One of my favorite science fiction genres is alternate histories where something has changed and then the world has turned out differently as a result. So we that knowing something about our history, we can see where the difference happened. So what if the Civil War had been won by the South? What if-

Dr. Theodorea Regina Berry:

Ooh, I would not be here.

Dr. Michael Gilbrook:

And a classic one is Philip K. Dick wrote a book called Man in the High Castle, which is, what if the allies had lost the Second World War and America was occupied by the Nazis and the Japanese?

Dr. Theodorea Regina Berry:

That would've been interesting.

Dr. Michael Gilbrook:

Yeah, there's a whole series on Amazon based on that. It's a very small book and they expanded it into a series that was just fabulous because they took the basic idea and went way beyond his original book. But it was great.

There's an author named S. M. Stirling, who does a great job with these alternate histories. He does other stuff, but he does a lot of these. There's a really great one, there's a series of three books about what if the island of Nantucket off of Massachusetts was suddenly, for reasons we don't know, somewhere, move the entire island of Nantucket and everybody on it back in time to the Bronze Age, and then they have to deal with it. That's just a great story. There's just so much.

Dr. Theodorea Regina Berry:

And I've been to Nantucket, so that would not be so farfetched.

Dr. Michael Gilbrook:

And I think one of the things you might like about the book, along with the island, they just happened to catch the US Coast Guard Cutter Eagle, which is a sailing ship, I don't know if you [inaudible]. And it's captained by the only Black captain in the Coast Guard, is in command of the ship at the time. And so she becomes essentially the head of the department of defense for the island of Nantucket.

Dr. Theodorea Regina Berry:

That's fascinating.

Dr. Michael Gilbrook:

It is a great story.

Dr. Theodorea Regina Berry:

Okay. Favorite singer?

Dr. Michael Gilbrook:

Favorite singer. Enya. Yeah. Yeah, like her [inaudible].

Dr. Theodorea Regina Berry:

Okay. Excellent. Next place you would love to travel to if time or money were not an option?

Dr. Michael Gilbrook:

Oh man, there's so many places I have yet to see. Morocco.

Dr. Theodorea Regina Berry:

That's on my list. Marrakesh.

Dr. Michael Gilbrook:

Yeah. I actually have personal history. I was actually born there. I have no memory of it since I came back as a child, as an infant. But my parents were stationed there in the fifties. So yeah, I'm actually from Kenitra, which is a coastal town, not too far from Casablanca. Which is, by the way, one of my favorite films.

Dr. Theodorea Regina Berry:

Yes, of course.

All right, if you could have dinner with anyone living or dead, who would it be and why?

Dr. Michael Gilbrook:

This is actually easy, because I've actually thought about this before Benjamin Franklin, because I think-

Dr. Theodorea Regina Berry:

He's an interesting character.

Dr. Michael Gilbrook:

Not only that, but I think Franklin, if you look at... You go back too far in time, and if you were to bring too many... There's a lot of people, if you were bringing forward, it's like I couldn't have a conversation with him because they'd be too freaked out. But I think Benjamin Franklin.

Dr. Theodorea Regina Berry:

He would be fascinated by-

Dr. Michael Gilbrook:

A man of science would be fascinated by how the country has turned out, maybe appalled in some respects, but also fascinated at technological development. So I've often thought about how would you introduce him to that? You want to start a little slow. You start him off in a nice home library or something from an English estate, something that would feel comfortable. And then gradually-

Dr. Theodorea Regina Berry:

Put the computer on the desk.

Dr. Michael Gilbrook:

Gradually introduce some of the new technology to him until he's a little, I thought you might throw him a Model T automobile to get him a little-

Dr. Theodorea Regina Berry:

I would imagine that if I left him in my house for five minutes by himself, everything would be taken apart.

Dr. Michael Gilbrook:

That's probably quite true, yeah.

Dr. Theodorea Regina Berry:

No. And so one of the beauties of growing up in Philadelphia is that we learned a lot about Benjamin Franklin, the good, the great, the bad, and the unspeakable.

Dr. Michael Gilbrook:

Yeah. He was a complicated individual. Many of the founders were. We revere them for the great idea that they were able to, and they established a new country and on principles that we try to uphold.

Dr. Theodorea Regina Berry:

That are worth a lot of conversation.

Dr. Michael Gilbrook:

But yeah, they themselves were all human beings and complex people. They weren't saints, but-

Dr. Theodorea Regina Berry:

Oh no.

Dr. Michael Gilbrook:

They did something important at a time where they had to stand up to make a difference. And they did. That's I think the thing that we need to respect them for.

Dr. Theodorea Regina Berry:

Which is why some of my friends on the opposite side of the pond still refer to us as the [inaudible]. And on that note, I want to thank you so much for your time today to share your insights, your experiences, your input, your advice to all of us watching and listening to this podcast. Sincerely appreciate the opportunity to celebrate you as a faculty member in interdisciplinary studies and really look forward to our continued work together.

Dr. Michael Gilbrook:

I've enjoyed being here, Dean Berry. And it's been a pleasure and the same. I hope to be here for a long time.

Dr. Theodorea Regina Berry:

And I want to thank our audience for taking time to watch and listen to our podcast today as we celebrate yet another faculty member, Dr. Michael Gilbrook, for Academically Speaking, this is Dr. Theodorea Regina Berry, and have a great day.