

BCL ep372 The Classical Science Classroom with Paul Leywell

What if the best preparation for a career in science isn't just more technology, but it's deeper thinking? Can classical Christian education equip a generation of students who are aspiring to pursue science by creating better environments in school that hold together academic rigor, curiosity, and discovery, and the theological imagination? And how does learning the story and the history behind many of the great scientists in the world impact today's students? It's all this and more on this episode of Basecamp Live. Mountains, we all face them as we seek to influence the next generation. Get equipped to conquer the challenges, summit the peak, and shape exceptionally thoughtful, compassionate, and flourishing human beings.

We call it ancient future education for raising the next generation. Welcome to Basecamp Live. Now your host, Davies Owens.

Welcome to another episode of Basecamp Live. Davies Owens, your host here on the journey with you of raising the next generation. I'm so excited to have emails that I get from many of you.

I put a request out a few weeks ago for anyone that had recommendations on alumni to interview. We've got a great alumni interview coming up next week that is because of that great introduction. So I always love hearing from you.

Thank you for taking a moment to email me back. Special shout out in this episode to a couple of folks in different schools, in particular, Nathan Bell, head of school at Lighthouse Christian Academy in Stevensville, Maryland, along with Adam Keffer, head of school at Paideia Classical Christian School in Tampa, Florida. Nathan and Adam, thank you for being a part of the Zipcast and Basecamp Live family.

We appreciate you listening each week and do hope that as we go through this week over week conversation, it's an encouragement throughout your school. I appreciate you being on the journey. For this particular episode, I have the privilege of sitting down with Paul Laywell.

Paul is a native of Richardson, Texas. He holds a bachelor and master's degree from Texas A&M University. After years of teaching and coaching in both public and private schools, as well as serving as an adjunct professor at Tarrant County College and Dallas Baptist University, he founded Eureka Science Education in 2023.

Paul's passionate about equipping teachers to deliver rigorous science instruction that integrates historical, philosophical, and biblical foundations. He and his wife, Deanne, have two adult children and enjoy connecting with family across the globe. In his free time, Paul enjoys cycling and studying history and philosophy of science and teaching the Bible.

Before we jump into the interview, a special thank you to the sponsors for this particular episode, Wilson Hill Academy, as well as the Herzog Foundation, the folks at Wise Phone, and

our own Zipcast. You can learn more about all these great partners at our partner page on the Basecamp Live website. Without further ado, here is my conversation with Paul Laywell.

Paul, a big welcome to Basecamp Live. Thank you very much, Davey. I'm glad to be here.

Paul, it's wonderful to have you here. It's a joy to get a chance to talk about this topic. I know having been in classical education for many, many years, so often the stigma is that, you know, we're all about playing violins and reading great books, but we're not so great on the whole science side of things.

And you're here to help us understand how important that connection between science and classical education is. But jump in with just tell a little bit of your own story. I know that you spent years in various worlds of education.

Let folks know a little bit of the journey you've been on. I went through Texas public schools, still a resident of Texas, attended a state university, started teaching and coaching, and I was in public schools for 16 years and thought that I was through with secondary school for a variety of reasons. God had other plans.

Ultimately, that would take me to a small, fledgling, classical Christian school in Dallas, Texas. It is now known as the Covenant School of Dallas. It was not known by that name back then.

And it operated out of an incredibly small, antiquated church over on the west side of Dallas. And when I walk in the door, this is really my entrance into classical Christian education. I don't know anything about it.

I mean, I probably was able to clean a definition or something, you know. And instantly, I become a one-man science department in a school that is steeped in classicists. And very quickly, the question I began to ask was, how can I, as a science educator, contribute to what I see that is so unique happening around me? Kids that are passionate about learning and learning for something other than what that might provide me at some future date and learning from the standpoint of, you know, formation.

What does it mean for me as a person? And so, I fell in love with this little school and this model in the very early days, over a quarter of a century ago. And there was no network out there. You know, you couldn't Google, you know, classical Christian education, science educators, etc.

And so, I just began this writing project. I think it's nothing short of divine providence that God took somebody who loves sciences broadly, the physical sciences specifically, but also loves history, philosophy, and theology. Now, I don't claim to be a philosopher, a theologian, and I'm just a science educator, but I've been able to take those various loves and roll them into this academic discipline that we call science.

Well, I love how your website describes you as a mad scientist on a mission to equip private schools with the needed resources and expertise to integrate the sciences as a meaningful

cornerstone to classical Christian education. So, putting all that in one sentence and being a mad scientist, I'm so excited to have this conversation with you, Paul. Yeah, I do love a good explosion.

Well, which probably makes you a really good physical science teacher for sure in that way. And for those, again, you kind of gave the educational side of your story. From a science standpoint, what's been the journey for you in the sciences? If you're talking about educationally, chemistry minor, and I graduated with a minor in chemistry, nearly a minor in physics.

I mean, and just over the years, I have a master's degree in exercise physiology. And so I'm all over the map, even scientific discipline-wise. As far as teaching, I am an introverted ham who comes alive in a classroom.

I love it. That's my stage. That sounds great, Paul.

So, help us frame up some of the challenges, you know, I alluded to right at the beginning, kind of the stereotype is that classical Christian schools in particular, probably are not, that's not their forte, at least that's their perception of science. What do you see as some of the real challenges that are maybe, will kind of stay within the wall of classical education? But when it comes to teaching sciences, what are some of the challenges both in perception and in how it's actually done that you're trying to address? I think historically, if you go way back, and this includes when I first began teaching science in a classical Christian school, that the notion was basically that all it meant to teach science in a classical Christian setting, not so, what it meant was basically have a Bible verse on the board. There were certain governing institutions back then that if they came into your classroom wanted to see that, and I believe that was a disservice to both the academic discipline and Scripture and the Christian faith.

And so, what you want to do there, I think there are multiple elements or pathways for this integration that we can do that should be unique to classical Christian education science instruction. And that is, if I may, I think one of the advantages we have is that we can teach science by telling stories because we understand there is a larger context there, that these advancements in science are not just these isolated events in history. There's a before, there's an after, there are people involved, the individual's philosophical outlooks as well as their faith influence the way they pursued their science.

And I think we have an opportunity as science educators to bring all of that to bear. I had an administrator once who said he believed that science might be the most integratable of all disciplines because of the number of things that you could bring in from disparate academic disciplines. We don't have to teach science in a But what you're, exactly.

And, but what I, you know, I think for most of us, most of those listening did not grow up in a classical Christian world. And the typical kind of science as it's typically taught, even in schools today, from what you're saying here is kind of stripped of any real sense of developing curiosity or a broader understanding of history. It's just kind of distilled down to kind of the mechanics

of it.

Is that right? Like, here's the formula or here's memorize this table. Yes. Okay.

And, and I, and I think one of the things that we have the opportunity to do is rather than yes, we need to teach a certain content, the academic discipline, whatever it is we're assigned to, but there are manners of thinking and we ought to be looking at science through a different window than we do down the street at public school X, Y, or Z. Right. But what you've just to clarify, because I think this is important as we kind of set up some of the challenges that are there is that you either have a modern classrooms and often adopted the same model by many classical schools, which is again, more of a, I guess, more of a mechanical view of science and, and, and, or you, you alluded to the idea of, well, let's make it Christian. So we're just going to find a Bible verse that we can tie into this thing.

And therefore it's Christian version of teaching science. It seems like there's also a struggle. I know having been ahead of school that even a lot of the curriculum that's out there is often you either have to choose between it being like theologically rich and scientifically poor or scientifically rich.

Yes. But then having, you know, a lot of pagan views. Yeah.

Help us understand that tension. Well, that's why many years ago, I basically, except for advanced placement classes where the college board requires the use of a textbook, we jettisoned textbooks for that very reason. You know, there were certain publishers who were very good at the theological integration.

I will add that sometimes it was a bit pedantic, but lacked the robust science. And so what I took it upon myself to do was to write a curriculum that was certainly robust science, and then took all these other things that I believed could be added to the mix, you know, at appropriate points in the curriculum. There's not going to be a theological discussion every day.

They're going to be theological, philosophical, historical. That integration is going to be there where appropriate, because if we try to force it, like I said before, it's a disservice to both the scientific discipline and whatever else we're trying to integrate. Well, I want to take a break here and we'll come right back.

But I know that a lot of times classical schools will actually go all the way to the point of actually having some in science class readings of literature of a Newton or a great scientific mind to sort of understand their historical context and their core motivation, which was so often to be curious and to discover the world around them because they believe God created it, which was then what led them to the scientific discovery. So I want to hear sort of how you've gone about it. I know a lot of what you're doing is trying to bring all that back together, which has been broken apart by sort of modern views of science.

So let's come back after the break and I want to hear your thoughts on all that. Every school

year tells a story. Some chapters are easy to see, like the first day of class or graduation at the end.

But the real heart of a story is often written in the quieter pages. A science experiment that sparks wonder. The decision to slow down and memorize a psalm.

The way a teacher walks alongside a student who's struggling. Those are the moments parents long to understand. They spark questions like how do I nurture that same sense of wonder at home? What simple rhythms can make God's Word a part of our family's everyday routine? How do I encourage perseverance in my child when the work gets hard? Zipcast helps schools bring those quieter pages to light.

Each week families receive a short 10 to 12 minute episode that pairs local updates from their own school leaders with syndicated insights from trusted national experts in both Christian parenting and education. Parents can easily listen anywhere on the go, on the drive to practice, while cooking dinner, or during a quiet walk. It's not another notice in an inbox, it's a voice.

A voice that brings encouragement, clarity, and perspective. And in every episode parents not only hear what's happening at their school and why it matters, but also gain practical wisdom that connects the school story to the home. Nearly 100 schools are already using Zipcast this year and beginning in the fall or winter isn't too late.

It can actually be the best time to start. If you're a school leader, your school's story deserves to be clearly heard. Visit zipcast.media to learn more.

Hi there classical Christian parents, students, and teachers. This is Robert Littlejohn, co-author with Charles Evans of *Wisdom and Eloquence*, a Christian Paradigm for Classical Learning, published by Crossway Books. We want you to know about our new book with well-known family counselor Keith McCurdy, published by Classical Academic Press.

The book is titled *Wisdom and Eloquence for Parents, How Classical Christian Education Can Transform Your Children, Your Family, and the World*. We have written this shorter parent-focused book specifically as an admissions and parent education resource for schools and families. We are excited to be proud sponsors of Zipcast and Basecamp Live and we hope you are enjoying these two great resources for classical learning as much as we are.

And we would invite you to visit our website, wisdomandeloquence.org to explore the various services offered by the authors of *Wisdom and Eloquence for Parents* and to let us know how we can best serve you. We look forward to hearing from you soon. Well, Paul, right before the break, we were talking about the challenges of integrating the science classroom with both the kind of hard science facts and the building blocks that make a science classroom work, the periodic table and all the things to memorize.

But there's so much more, of course, in science, even historically. Talk about how you've gone through the process of writing your own curriculum, of creating an environment for students

that you've proven year over year, where they're really integrating in stories and history and even theology that naturally flow into their work into the science labs and the more technical side of the science classroom. Sure.

One of my favorite examples when I teach atomic theory to first-year chemistry students, the first thing I want students to understand is before we talk about atoms as some kind of scientific construct, they actually began as a philosophical construct. And this goes all the way back to several centuries BC. And in the process of that, I want them to see that this philosophical idea is going to transition to a scientific idea as Greek thought transitions and this scientific mindset begins to develop coming out of the 6th century BC.

And in the process of that, one of the things that I'll expose them to is, believe it or not, is Epicurus Tetrafarmacos. Okay. First of all, I'm glad that's not a spelling thing you're teaching because that could be pretty intense, I would think, to even try to spell that one out.

Yeah. Please unpack that. What is that about? I'll take the anglicized version of it any day.

You know, Epicurus, his Tetrafarmacos, four very simple statements, you know, don't fear God, don't worry about death, what is good is easy to get, what is difficult, you know, is easy to endure. And what we'll do, because all of this is in the context of Epicurus ideas about this atomic or atomistic philosophy, and so what we will do is take a look at this prescription from one of the, you know, well-known Greek minds and we will, you know, contrast it with orthodox biblical teaching. You know, do we fear God or should we? You know, should we fear death as believers? This idea of what is good is easy to get, you know, places the emphasis upon, you know, I get it, my initiative, and so forth.

And then the last part is fairly fatalistic, in my opinion, where it's, you know, what is difficult is easy to endure. And I want students to see that, as I said, these ideas that we talk about as scientific constructs began as something else. Ideas are constantly in flux through history, influenced by various people along the way, and the net result of Epicurus' Tetrafarmakos is that atomistic philosophy was deemed atheistic and it went into the dustbin of history, only to be revived in the mid-17th century by the Englishman Robert Boyle.

And, you know, he himself sponsored a series of lectures for the advancement of the Christian faith. And, you know, that's not a big deal, but that is a part of the story. And all of this continues, and you mentioned during the break something about the periodic table.

Well, here just in the last week or two, I was teaching a first-year class about both atomic theory and the periodic table, and that brought us to the Frenchman Antoine Lavoisier, late 18th century, a wealthy aristocratic scientist who did tremendous work on behalf of French agriculture. He also happened to be a partner in what might be referred to as a tax farm. And so on behalf of the French government, he and his partners collected taxes.

And as we know, when you get a job like that straight out of the New Testament, you're inclined

to collect a little more than you should. And while there is no record that Lavoisier did that, his firm ran afoul of the French Revolution. And he and approximately two dozen of his partners were arrested and ultimately sentenced to death and executed.

Lavoisier, just prior to his death, asked for a delay, not a suspension of his sentence, but simply a delay to complete the results of his latest experiment. And the magistrate's response was the republic has no need of genius, and he was executed. And one biographer said, you know, the mind that it would take a hundred years to replace was cut off in an instant.

And so I think when you can embed the story of science with those kinds of things, that these are real people in real time and space, I think it lends, it certainly lends to their remembering them. Anecdotally, I can tell you that students will often remember these kinds of things in their context. And it certainly adds dimension to know the history of that person.

But what I'm hearing you say is, I mean, it's not only just here was Boyle and here was his life and some struggles he went through, but really what were the things that gave him that boldness and courage and that wonder? A lot of that, again, tying that back to that was born out of his faith. So these were not you know, they were Christ-driven, faith-driven people setting out to discover wonder, the wonder of the world. I mean, it's the divine revelation that the physical world cries out to the fingerprints of God, go and discover these things.

So I hear you, you know, students sitting in there would think, okay, so this is even more, not only this has impacted people throughout the world and throughout history, but it's very much richer than just simply a bunch of facts to be learned or an experiment to be done. I would hope so. Yeah.

That's my objective. Well, it makes a lot of sense, Paul. What do you say to the teacher or maybe parent who's listening is thinking, this is great, Paul, but I have a mere, you know, we have a 50-minute period for science and by the time they get in there, I'm already down to 43 minutes.

And then I've got to think about all the things I have to get through in the lab book and the, you know, the hard science stuff they have to get through. How do we have time to sit here and read all of these great books and theological sub points? Where does that fit? Does that cause you to have to change some of your lesson plan? Absolutely. Okay.

Absolutely. Absolutely. You do have to make choices.

And you know, that's one of the things that flies in the face of modern culture is that, we can do it all and have it all. And so, I mean, again, just to try and encapsulate this, I mean, you're saying you do have to make a decision. And I think what we often do across, I think all of the classrooms in our modern schools, certainly classical schools are no exception is we're all about speed and volume.

So let's read 15 great books when maybe we should only be reading eight and go deeper. And it's probably the same way. Let's go through all the chapters in the science book when maybe

fewer would be better if in the process we'd cause students to be awakened to inquiry and discovery and wonder and really doing the work of a scientist.

It sounds like that's the key point here. Yes. I've never had a student come back to me and say, I was unprepared for course A, B or C at college or university because I didn't get a certain specific item here.

What I hope to do is to present a grander story. Yeah. And in the process to scientifically emphasize what is fundamental, I would encourage any teacher that feels beholden to a textbook, a curriculum guide, whatever, take a deep breath and relax.

There are more important things than whether you get to cover the minutia of kinetic molecular theory. And I think one of the things that we lose in our haste to cover content is the opportunity to pause, reflect, and to do a little bit of self-analysis. Why do I think like this? What can I learn about the way I see this or that person in history, especially a person of faith, how they approached this particular situation? Why did they come to the conclusion that they did? And I think that's one of the things that the science classroom has an opportunity to do.

I don't think it's particularly unique to science, but the opportunity to think about how we think and how we might want to go about adjusting that and hopefully our instruction. And those are the times where the conversation becomes really rich. It's okay, we can talk about Epicurus Tetrafarmacos, but what is the significance of that for me as a 16 and 17-year-old student sitting here in 2026 in this classroom and how I might have to deal with these same issues tomorrow somewhere else? Which is a gift to give that to them as opposed to just, again, so much of education is jam and cram and forget about it versus really seeing the deeper message behind it.

Let's take another break. And as we come back and close out our time, I know you've got some additional just words of wisdom and best practice for educators and parents alike as we walk next our children as they're going through science classes. And I'll also be curious your thoughts on just sort of how what we're talking about differs so much from the big push that so many parents hear and feel around STEM, which is considered, I think, presented as this essential to live in the modern world.

You must have this training in STEM and how do you react to that? I'm curious your thoughts on that. We'll be right back after the break. During this short break, I have a special invitation to all school leaders, administrators, and teachers.

I want you to imagine for a moment stepping away from your everyday routine at school and diving deep into the rich foundations of Christian education, surrounded by world-class scholars, seasoned classroom teachers, and administrative experts with years of experience running schools with a lot of wisdom to share. That's exactly what the Herzog Foundation's Institute is offering. I've had the joy of serving as a training coach for the last few years, leading their two-and-a-half-day training on spiritual formation and another one on parent

engagement.

They offer close to 50 unique training events ranging from board governance to marketing to classroom best practices. They even offer a training on how to teach the great books. And the best part of all, well, thanks to the generosity of the Herzog Foundation, these training events, including lodging, are completely free for Christian educators.

Institutes are located around the country in beautiful locations, including at the Museum of the Bible in Washington, D.C., and the Reagan Library in Santa Barbara. Don't miss this incredible opportunity. Check out the details at theherzogfoundation.com. If you're seeking an education that helps your child thrive academically and spiritually, Wilson Hill Academy has spent years developing a model that I want you to know about.

In their free guide, you'll see how their thoughtfully sequenced curriculum prepares students for college, and how a biblical worldview helps them understand the world around them with clarity, and how their discussion-based classes teach them to think critically, not just what to think. You'll also discover how their teachers equip students to live purposefully for Christ. With accredited live online classes, your child can learn from master teachers anywhere with an internet connection, all within a community that has transformed families like yours.

Download their free guide today at wilsonhillacademy.com slash guide or in the link in our show notes. Paul, we were talking about before the break that there is a lot of pressure today, especially in families where they have children that have a lot of interest and may be gifting in the area of sciences, and they're thinking to themselves, gosh, I love our classical Christian school, and I'm confident we're learning all kinds of great things that are forming virtue and wisdom, but I really don't want to hurt them in maybe limiting their abilities. And I'm thinking, you know, you ask around and everybody says, well, you need to get them in a STEM school so they can really get ready for this modern world.

What do you say to parents that are caught in that tension? Very simply, you're not hurting them. Okay, good. Some years ago, my last school underwent, you know, a struggle with an influence that wanted to switch over to STEM, to become a STEM school and to add courses that would make the curriculum more STEM-like, most of which do not fall within a classical paradigm.

So what happened at that time is our guidance counselor, really bright individual, she goes out and because she so strongly believes we are preparing students for careers in medicine and engineering and dentistry and, you know, veterinary medicine, that she goes out and she contacts college admissions offices, a number of deans in schools of science and engineering, compiles the data based on the feedback she gets from them about what is it you want students to have in order to be successful in your particular collegiate program. And lo and behold, it's you need the basics and you need to be a thinker who is industrious. And that's not something that necessitates a STEM curriculum.

I think you have to make a choice. You know, if you want classical Christian education, that's one thing. If you want STEM, that's another thing.

Now, as a science instructor, I can tell you, I never had a student come back and go, hey, Mr. Laywell, couldn't get into med school because of you or your class or this school science program for which I was responsible. That doesn't happen. And so it's something of a myth that, you know, you have to be involved in a STEM curriculum to get anywhere at the collegiate level.

Anecdotally, here in the last several days, saw a post on LinkedIn, former student who's now in their sophomore year at Texas A&M. He graduated from our school, which was classical Christian. He took advanced placement chemistry as a senior because we don't offer AP physics or didn't.

And there was nothing else. He was named head of the suspension design group for the Texas A&M solar car club. So it clearly hasn't impeded his progress.

Now, that's not to suggest he may not have done some other work on his own, but it didn't prevent him from getting there. Well, and I ask knowing what you would say, because I hear this all the time, that students move out into the, you know, into the hard sciences and the graduate level work, and they know how to ask good questions. They know how to, you know, pursue and discover.

And these are core principles that I, let me ask you this, because I think part of the challenge sometimes with STEM is that it's very much in the moment and science and technology for sure, moving at such a rapid pace that whatever the STEM thing was you did five, 10 years ago is going to be wholly different other than just basic elements of, I guess, science. But is that a fair concern or critique of it as well? Oh, absolutely. Very trendy in that sense.

Yeah. Absolutely. Absolutely.

So, you know, five years ago, we weren't talking a great deal in secondary school settings, if any, about AI, you know, and so if we weren't doing that, you know, we're not, we're not on the cutting edge, you know, if we're, if we're doing robotics work, not that that's not important, not still relevant, but I mean, let's face it, robotics has been supplanted by artificial intelligence. Right. That's the, and that's a really important point.

I mean, in other words, at a very basic level, we're teaching children and young people to move in the world who know how to problem solve, who know how to think, who know how to reason well. That's the core, the core gift that we give them that then lends itself to adaptability when they're in the marketplace or they're off to a upper level science studies. So, well, Paul, this is really helpful and encouraging.

And I know that you every day, this is your calling, it's your passion. You launched Eureka Science and Discovery to walk alongside schools and, and even parents with helping them to

understand a lot of things we just talked about. How can folks learn more about what you're doing? You can find me on LinkedIn quite easily.

And of course, the website is EurekaScienceEducation.com. Those are the two easiest ways. And you're in just kind of the range of services that you offer there. What do you, what are you providing to schools? Curricular instruction or formation, I should say, curricular development, staff development, you know.

I think one of the biggest challenges, and I've gotten this from administrators in classical Christian schools, is there is probably no more difficult personnel slot to fill than a science teacher. You fill that spot, you're typically dealing with somebody maybe who is in a second career after a career in engineering or maybe hard science. Maybe it's somebody early, mid-career who has a background in nursing and can teach a little life science.

But it's still difficult to bring these people in and to just ask them with the benefit of a textbook and a curriculum guide to, to provide the things that can make science education so rich, so integrated. Right. And just unique.

Well, I love that you're, you're walking next to schools and championing this better way of doing science and better way of understanding. Thank you so much for your time today. I know folks will- Been a pleasure.

To connect with. Well, thanks, Paul. Appreciate it.

Thank you for listening to this episode of Base Camp Live. Be sure to check out our website, BaseCampLive.com, for more than eight years of timeless episodes that you'll find helpful and encouraging, as well as the helpful resources offered on our partners page. The views and opinions expressed in this program are those of the speakers and do not necessarily reflect the views or positions of our partners like the Herzog Foundation.

See you back next week.