

Making College “Worth It” – Season 1, Episode 5

The Data Mine

Nolan Schultheis (00:04):

Welcome to Making College Worth It, the show that examines engaged learning activities that increase the value of college experiences.

Jessie Moore (00:11):

In each episode, we share research from Elon University's Center for Engaged Learning and our international network of scholars. We explore engaged learning activities that recent college graduates associate with their financial and time commitment to college being worthwhile.

Nolan Schultheis (00:26):

I'm Nolan Schultheis, a first year student at Elon University, studying psychology with an interest in law. I'm the Center for Engaged Learning's Podcast Producer and a legal profession scholar.

Jessie Moore (00:37):

And I'm Jessie Moore, director of the Center for Engaged Learning and a professor of professional Writing at Rhetoric.

Nolan Schultheis (00:43):

In this episode, we'll focus on living-learning communities, which combine students on-campus housing experiences with academic experiences like linked courses, shared academic interests, or other learning opportunities. We'll talk to Professor Mark Ward from Purdue University and Professor Jonathan Manz from Lewis and Clark College, two of the creators of the Data Mine Living Learning Community at Purdue.

Jessie Moore (01:03):

In the Center for Engaged Learning's 2017 to 2019 research seminar on residential learning communities as a high impact practice, 20 scholars from across the United States collaborated on multi-institutional research about living-learning communities. Teams confirmed that living-learning communities have the potential to contribute to students' psychological sense of community and thriving in college. In addition, faculty involvement in living-learning communities is significantly positively related to students engage learning and academic determination. Let's hear from our panelists about The Data Mine, one example of this high impact college experience.

Jonathan Manz (01:43):

Hi, my name is Jonathan Manz. I currently work at Lewis and Clark College in Portland, Oregon. We are a small liberal arts institution nestled in the beautiful Pacific Northwest, but I've been involved in living-learning communities at several different institutions and the impetus for getting involved in these types of programs is seeing the great opportunity for faculty and student connections. We know that the classroom is obviously a great starting place for those types of connections, but finding opportunities for faculty and students to gather and meet in informal and different types of ways. Living learning communities are a great avenue to allow that to happen. And if you've studied at all college retention research or student affairs research, those faculty student connections are something that comes up frequently as being really important to retention persistence that ultimately is graduation. So I would say that's one big part of it.

Making College “Worth It” – Season 1, Episode 5

The Data Mine

(02:45):

The other big part of it is it's great opportunities to connect students from different disciplines and allow them to use that knowledge they're gaining in the classroom, an engineering student and say a communication student and how they can then put some of this learning into practice by some ideas they came up with together or through conversation with their faculty or something with this living-learning community that allows them to take their skillsets and combine them to build on and make something bigger than themselves.

Mark Ward (03:11):

I'm Mark Daniel Ward. I'm a professor in the Department of Statistics at Purdue University. I also work in the office of the provost, in particular with the Vice Provost for Teaching and Learning. Been involved with Living Learning Communities for about 10 years now. For five years I worked very closely with a program called the Statistics Living Learning Community that was funded by the federal government by the NSF and just had a tremendous time working on research and coursework, really comprehensive living and learning experience for altogether 100 sophomore undergraduates.

(03:47):

The way that the university institutionalized that program with many thanks to Dr. Manz is it gave rise to a program called the Data Mine here at Purdue. That's again, centrally organized in our university as a partnership between Office of the Provost and our learning community office and just present students with all kinds of experiential learning research opportunities, coursework, corporate partnerships, things of that nature as Dr. Manz alluded to, enable students to have experiences far beyond what they would encounter in the classroom and be supported by faculty and mentors from industry and other campus partners.

Jessie Moore (04:29):

Thank you both. I first learned about The Data Mine in a chapter that you contributed to the book, the Faculty Factor, developing faculty engagement with living-learning committees. And you've touched on this a little bit, but could you share a little bit more about the goals of The Data Mine and the various ways that students can participate? Yeah.

Mark Ward (04:47):

My sense is, again, as Dr. Manz alluded to, we're sort of like meeting the students where they are in their academic experience. We want our learning community and The Data Mine to be very student facing, very student centered. Our faculty have often had their office hours in the residence hall where many of the students live. Our meetings with companies also occur in the student's residence halls. So it's very much meant to be student facing experiential, student-centric. I spent three hours this morning even in the dining court of the residence hall where the students have always had their learning seminar to learn competencies in the data sciences. So that's sort of the fabric and mission of The Data Mine is to provide a very student-centric experiential learning environment.

Jonathan Manz (05:35):

One of, I think the powerful things about The Data Mine specifically, if you think about, and this is not unique to Purdue, but if you think about a large campus such as Purdue and Jessie, you said you've got experience there. It is a campus developed, very divided in terms of its infrastructure. You can imagine

Making College “Worth It” – Season 1, Episode 5

The Data Mine

on the eastern side of the campus is what a lot of people would call your academic campus, on the western side of campus most people would call that your student side or student life side, residential side. And it really is both a physical and symbolic divide.

(06:01):

And The Data Mine in terms of residential buildings probably could not be further from academic campus. It is pretty far west, but being very intentional about when Dr. Ward and I, we go around and do some, we put our best salesperson suits on and market to some different academic departments. One of the key things that he really pressed for is you're going to have some of your faculty spending time in this building because it's important that our students see that learning can happen here and they don't have to trek across campus to find it. And that is a really big, I guess, metaphorical bridge of bringing campus together, both that residential student living experience and that academic and learning experience.

Jessie Moore (06:43):

And that's not an easy ask, but that's such an important ask of the faculty and staff who are participating. So I am picturing it in my mind, and yes, that definitely is a bridge that you've cultivated there. I think I just mixed the metaphors, but that's okay.

Jonathan Manz (06:59):

I think that second insight is interesting because for me at least I know the way I learned a lot is through repetition and retention. And I think being in a living community, the repetition and retention must be tenfold what it is just walking to class and sitting in class and listening to a professor for X amounts of hours. I think being in an environment that your brain recognizes as a comfortable one definitely has some positive effects to that in learning.

Mark Ward (07:29):

Nolan, I could reiterate as well. I said I've been involved with living-learning communities for about 10 years. I haven't been giving lectures in these last 10 years. Really, really committed to that experiential learning that you alluded to the word of repetition. I think it even provides the freedom for students to fail and still feel very supported by the overall learning environment. It gives students a chance to try things they may not have tried otherwise. So it's supposed to bolster their sense of belonging, their self-efficacy.

Jessie Moore (08:04):

And you're also bringing up a piece there of the relationships involved. So Nolan, you mentioned the environment and the comfort there, but with that sense of belonging, the cultivating relationships is a big piece of learning communities as well, and that obviously is coming into play with The Data Mine.

Jonathan Manz (08:17):

What are some examples of data sets that Data Mine participants analyze?

Mark Ward (08:21):

Making College “Worth It” – Season 1, Episode 5

The Data Mine

There's several different components of the data Mine, one key component is our corporate partners projects, which have just been wildly popular with students because the data comes from a company and then the students learn a domain science or a domain application with mentors from that company. So they essentially are getting nine months of professional development and real world experience while they're taking their coursework, sort of like you would do with a co-op, except not needing to leave the campus environment and support the campus provides to do that. Another type of experience involves data and mentoring from faculty on campus, from research labs and teams where faculty are really hoping to work with students with some data science competencies they may not find in their own departments. And that interdisciplinary blend of students is really an asset to faculties research teams. Another aspect of Data Mine is to have coursework that has data-driven components and competencies that wouldn't naturally be embedded in the curriculum of a certain department, but because department can partner with The Data Mine, we can incorporate some cutting edge tools and methodologies into a class.

(09:38):

And there again, it may infuse data and coursework with a kind of modern approach to learning some data science in the context of a larger discipline. Lots of ways that could happen. There's also a common theme across all of these that I've mentioned, and Nolan, that's what we call our general seminar, where students one hour a week come and participate in our seminar in our dining court of Hillenbrand Residence Hall and learn R or Python or SQL, high performance computing, shell scripting some of the things we think all the human beings should know. And they do it not in the context of learning a programming language, but rather as you alluded to needing to work on a dataset that week. And then as a necessary evil, what are the tools and methodologies they need to tackle a project at hand?

Jessie Moore (10:32):

And we'll link to The Data Mines website, but I wonder for our listeners, if you could share just a couple of the business partners that you've worked with.

Mark Ward (10:42):

Well, there's a long, long list of them tracing all the way back to ViaSat, who took a chance on us in our early, early days before we had a developed corporate partners program. Cummins and John Deere took early gambles on us, and lately we've had all kinds of projects in agriculture like with our friends at X Hybrids just down the hallway. Sometimes we'll work under the auspices of relationships that the university already had and were flourishing and supplement those relationships with new components and research projects. And other times I think as Data Mine has grown in size it's presented an opportunity to bring new partnerships and new sponsored research contracts to the university environment. I could mention that The Data Mine model is being followed by students at dozens of schools around the country now. And our hope is in the long run that the types of research curricular experiences, sponsored research contracts, relationships, partnerships, that these expand broadly to other universities as they find that The Data Mine just gives rise really naturally and organically to new kinds of projects and partnerships.

Jessie Moore (11:58):

And that's an exciting integration with other parts of a university, strategic goals and mission and vision. So I love that really the way it interweaves with all aspects of the university life.

Making College “Worth It” – Season 1, Episode 5

The Data Mine

Nolan Schultheis (12:10):

So as I had read about The Data Mine, I saw that you guys will try to capture real life data sets and implement it into the classroom in kind of an effort to engage the students more. And I was wondering, with all of what COVID has done and with all that it's done, have you guys taken COVID datasets yet and have you tried to create a project or something to try and gather from the dataset to engage the students in the data sciences?

Mark Ward (12:41):

Sure. A collaborator of mine named Priscilla Ding from the nursing program, and I worked together in the early stages of COVID with a team of students on a research project that gave rise to a research paper that's now been published in the literature and definitely took advantage of, as you said, all the things the pandemic did to the university life and tried to render positive experience for at least a team of students explicitly with regard to some analysis of COVID and the data connected to the COVID pandemic.

Nolan Schultheis (13:14):

Thank you. What makes The Data Mine a meaningful opportunity for fostering students learning?

Jonathan Manz (13:18):

So one of the stories I tell often that I think that Mark alluded to a little bit anytime, and any student affairs person I think will tell you this, but having the right faculty colleague, the right faculty partnership is really key to making a strong living-learning community. And that's really what's helped The Data Mine be as successful as it is. But one thing stuck out to me, so I was at Purdue and part of my role is I would visit different faculty partners we had within our learning community program and Mark had been tied into that program for a while. So I had visited him occasionally over in the math and science building and almost without fail, whether I'm visiting Mark or just happened to be walking by his office, he didn't have that big of an office mind you, but he did squeeze a couch in there and a couple other chairs, a ratty old couch, I think he found in storage somewhere.

(14:03):

There were always, always students in there working on projects. They may or may not actually be getting help from Dr. Ward, but they were in there working on statistics projects. It was just a safe place for students to go to work on their homework, to know that he was there to answer questions, but to be completely okay that his back was turned working on a project if they're fine. And so one day I just pop in, I was like, this is amazing. And so I said, mark, if I could get you an office in Hillenbrand Hall, which is the residence hall where this is located, would you move over there? Would you occupy at least a couple of days a week? He's like, "Oh yeah, I would move there permanently" or, "I'd move in there full-time." And so we found a space, probably the noisiest office you could find, meaning it was right outside the dining hall.

(14:46):

I'll try to simplify this a little bit. Had some design redesign going. He moved in there and it just exponentially, the amount of students that were coming in and out just exploded. He intentionally put, I think, whiteboards up for students to be able to brainstorm and work through their projects. I think they even maybe had some conference calls with corporate partners in there and is right outside the dining

Making College “Worth It” – Season 1, Episode 5

The Data Mine

hall, probably 10 to 15 feet. And so people could walk out of the dining hall and see him and vice versa. And so that just set the tone for making accessible faculty.

(15:15):

And just to add one more thing, we're talking about a fully tenured full professor who is one of the preeminent scholars in his field who's bringing millions upon millions of dollars of grant money to the university. So this is a researcher, but he values the undergraduate experience. And so that has, again, that really sets the tone because that really helped this program go far. We're not, and I don't mean this to sound in a disrespectful to him, but he's not an adjunct faculty, he's not a visiting faculty. He's there long-term, again, full professional and all that. And so that has really helped and he caress deeply about the undergraduate learning experience.

(15:47):

A reference, I think in my first response, the potential for interdisciplinary learning. And so what was crafted here, he already talked about Dr. Ward talked about The Data Mine seminar, which I audited for a semester. It was a fantastic experience that you have all these different sections of The Data Mine, people coming from English backgrounds, physics backgrounds, actuarial science, all these different backgrounds are taking the same seminar, learning these same data analytic techniques through R and other things, Python as you referenced, but then taking it back to their discipline.

(16:18):

So you have this great opportunity for social connection. He teaches it in the dining hall halls you're eating too, which is always great. Who doesn't like to eat some boneless wings while doing statistics? It is great. So you're doing these, learning these skills, making friends. You have teaching assistants and graduate assistants constantly roaming around to help you as you hit some obstacles with the work, making those connections. And then again, taking it back to your own section of The Data Mine. And so that, again, the social connection and interdisciplinary learning are two great things that this program really features.

Nolan Schultheis (16:48):

Why should students seek out living-learning community experiences like The Data Mine?

Mark Ward (16:53):

Nolan, at least in Data Mind, we don't give any majors or minors or certificates, and there's a handful of programs on campus that have us embedded in their curriculum or The Data Mine coursework can count toward a major minor certificate, but largely no one needs us. And still somehow, I think 1,700 students found their way to Data Mine this year. So we really like it that we don't spend lots of time recruiting and students recommend to their friends and colleagues and classmates to try out The Data Mine just something about the model seems to really resonate with students and because students have that sense of belonging and they enjoy what they get out of The Data Mine and keep coming back year on year and the program keeps growing. We have learned a great deal from our students and our faculty collaborators and all of our partners in industry and been able to keep this program very, very student-centric over the years, even despite the enormous growth.

(17:51):

So yeah, nothing happens without the students. That would be the succinct way to say all the good things Dr. Manz kindly said earlier is the students are the heart of what we do.

Making College “Worth It” – Season 1, Episode 5

The Data Mine

Jonathan Manz (18:03):

To add to that, and I think this would be a great point for any listener, that potential incoming student or a parent of an incoming student or connected to a potential college student in any way, a program like The Data Mine, a good living-learning community really does a great job of helping make a large institution small. And Nolan, you referenced pandemic interruptions that we've all experienced. And my work currently, I focus on first year initiatives and working on a retention rate at my own institution. One of the challenges that we face, I think is fairly common right now are students' abilities to effectively make meaningful relationships with peers and others. And so when you have large institutions in particular like Purdue University, The Data Mine really helps make it small. And yes, there's maybe over 1000 students involved in The Data Mine, but then you got to remember that seminar class is much smaller and each section of The Data Mine is much smaller. So you're getting these small, almost familial units to allow greater peer-to-peer connection and peer to faculty staff connection. So the learning very important.

(19:01):

The community aspect is also very important. And we know the relationships matter. An institution, maybe Elon University, a couple of people put out a great book called Relationship Education, which I highly recommend and emphasizes about the importance of relationships and that happens in places like The Data Mine.

Nolan Schultheis (19:18):

I'm so glad you said what you had said because it actually helps build even more on the point I was going to make. So this is a bit of an external kind of application to this information. I know a couple people that go to larger colleges such as Purdue. The common experience I hear from first year students is it's really hard to make friends and socialize. And Dr. Ward had said, what 1700 people had joined The Data Mine this year, and that was our accepted class into Elon. So that kind of really puts into scale just the amount of people ending an institution such as Purdue and the value of joining a living-learning community and kind of building a network of friendships that you can build even off of from there. It creates a spiderweb effect. And I think that's probably a great way for students to initially plant their social seed in the school.

Jessie Moore (20:11):

And thank you for plugging Relationship Rich Education. Definitely a good read. And we actually talked with them for our last episode or when this airs will be two episodes ago on the new student facing version connections are everything. So definitely relevant to this conversation in terms of, as you said, these spaces that allow students to really develop relationships with their peers, with faculty and staff on campus, and to make that big institution feel smaller and more community oriented. Thank you for the plug.

(20:46):

And my probably last question for you actually follows up on some of what you've just been talking about. You've been sharing all the different partners involved in this project, whether it's the industry partners, whether it's partners on campus, as I think about, you're talking about dining halls, residence halls, faculty and staff. There's a lot of cross silo community building that's happening to make this happen. And you've also mentioned that there are now similar programs on other campuses. What could other colleges and universities and their faculty and staff learn from your development of The

Making College “Worth It” – Season 1, Episode 5

The Data Mine

Data Mine? What are some tips or strategies that you might share? Share as other institutions try to implement something similar to The Data Mine?

Jonathan Manz (21:28):

A couple of things come to mind that in particular this project thought a lot through the different people that were directly impacted working with Dr. Ward's area, the other faculty across the campus that were involved and thought a great deal about their involvement. Going back and opportunities to learn through our own experience. Who are some of the parties involved that may be indirectly impacted that we did not think through as much? So let's think about because this is a residential setting, your facilities team, because you're having greater foot traffic and areas that might impact their cleaning patterns, their trash pickup, things like that that we may not think of are important but are important to having a positive environment. And if we didn't sit down, we didn't, could have sat down and talked about how would this kind of impact that other operations teams. For example, we were starting to put staff and faculty in spaces that traditionally did not have it.

(22:21):

And so you have people who are accustomed to running their ship, so to speak in a certain way, and now we're interrupting that flow a little bit by inserting some people in different locations. Everyone had the best of intentions, but if you don't sit down and go, "We are going to introduce this change", it could be mildly offputting to the folks that have been doing that kind of work for a long time, and I totally get that. And so hindsight being 20/20, we could have gone in and said, okay, how do you feel about this? Let's invite them for their input as well so they feel greater or feel part of this greater project. So again, those ancillary or indirectly related organizations, entities in your campus, I would think through who those are and invite them to be involved at some point so they have a sense of understanding and a sense of agency in this project.

Mark Ward (23:07):

I could follow on with that, but maybe the flip side of that coin, we are just so fortunate that the university, all of the colleges and at the leadership level, faculty at all levels, and then as Dr. Manz has alluded to, just staff and so many units have embraced this state of mind model. People have been just so good to us far beyond what we deserved. As a result of the university, really embracing the newness and interdisciplinary nature of this model when alumni are on campus or companies are visiting or government officials and so on, they so often are making The Data Mine one of their stops during their visit, and then alumni are just here all the time. So my sense is as we think about economic development around the state and the models for higher education and how colleges and universities interact with the business world, with government and with industry programs like The Data Mine can enable us to think beyond our typical classroom interactions with students and really think carefully about the types of skills that are going to be valuable for students in the real world.

(24:20):

It is common when we're meeting with alumni to say, "Wow, I wish there'd been a Data Mine program when I was in school." And I say that tongue in cheek just because we want to make this the kind of program that students would really find a value when they do join the workforce or get into their careers. We want to do something substantive and useful.

Jonathan Manz (24:44):

Making College “Worth It” – Season 1, Episode 5

The Data Mine

It reminds me a story Mark of when I was still there, but having our building and our offices scouted out by Secret Service personnel because as the secretary of one of the armed forces, Army, perhaps? The Secretary of the Army was visiting in town and visiting The Data Mine. I remember the Secret Service, scouting it out, having safe rooms if of course none of that needed. But then just walking in the lobby and you have very decorated military officials and the secretary, but she was sitting down chatting with students. It was really great. But that just speaks to the kind opportunity that presents itself when you have a program like this for the students are getting to meet people in the cabinet for the United States president who's in town. So that's really a neat opportunity.

Jessie Moore (25:26):

It's such an amazing student-focused program and so many layers of opportunity and so many benefits for everyone involved. So thank you for taking some time to share about it with us today. Is there anything else you'd like our listeners to know about The Data Mine or the work that you've put into it so far?

Mark Ward (25:45):

I'll just say thank you, Dr. Manz, for being such a good partner in this effort and really giving birth and support to this effort in the early stages. Before we had even tried to earn your respect or your trust, you really trusted us from our infancy. I'm really thankful for your vision and thanks for giving us time to discuss and reminisce a little bit on this podcast. I hope your listeners found something of value here. I would personally be interested in follow up discussions if people want to reach out to me at Purdue and discuss the potential to partner between our university and your organizations.

Jonathan Manz (26:25):

I'd say that the respect and admiration is certainly mutual, is a wonderful opportunity to build something. I certainly still miss it, really enjoying what I have the opportunity to do now, but I do miss great people like Dr. Ward at Purdue and that program, and it's fun to watch it from a distance. If I'm not mistaken, there's a new residence hall being built as part of this program. So that speaks volumes in and of itself that the board of trustees sees the merit that this new residence hall has built for the reason to expand this wonderful program. So it's just so great to see something continue to grow and flourish and impact so many students in a positive way

Jessie Moore (27:01):

That speaks volumes of the program success too. So that's really exciting. Well, thank you very much for taking time to visit with us today. It's such a fabulous program and I'm glad that our listeners will be able to learn more about it and we will include your bios on the show notes page for the episode so that listeners can reach out to you.

(27:37):

Nolan, what stood out to you in this conversation?

Nolan Schultheis (27:41):

Really the merging of academics and kind of home life. I mean obviously it's not home life living on a campus. It's definitely a different style of living. And I think that's kind of why The Data Mine was created as a living-learning cohort in that it kind of synthesizes a topic that most people would stray

Making College “Worth It” – Season 1, Episode 5

The Data Mine

away from because it seems like a scary topic and it's a big math involvement and a big time commitment. And to kind of break that down into something more digestible, going from day to day checking in to your house, your dorm, whatever have you, and just kind of learning about the information. I thought that was a really good way to kind of crack that barrier of too scared to approach or too hard to learn.

Jessie Moore (28:28):

I also appreciate that they really appeal to a range of interests in data analysis and data science, that there are opportunities for people to participate who probably would not anticipate majoring in related areas, but then there are also more advanced opportunities for students who are, so it's a nice mix of students who get to be involved and who get to participate in that sense of community around the work as well.

Nolan Schultheis (28:57):

Yeah, kind of linking back to the whole synthesis idea again, I remember, I'm not sure if it was Professor Ward or Dr. Manz, but one of them had said that they actually built this living-learning community on the side of campus that generally the academic kind of life doesn't reside on. And I also found that very interesting in that it's kind of trying to break the barrier between social life and school life and in their creating something in the almost enemy zone enemy territory of academics and seeing it thrive, which is great.

Jessie Moore (29:35):

And really working to make it so it is less siloed, which I appreciate from the faculty perspective as well, there's a richness in the living-learning community being grounded in a residential space with the dining hall right there. So it really unsettles some of our expectations about where academics happen, but that requires a really strong collaboration between the academic side of the university and the residence life, dining services, student life parts of campus as well. One of the other things that I appreciated was the central role of relationships and this living-learning community and others like it, but we really heard how even just having a faculty member present there steps away from the dining hall allowed for more faculty student interaction and for meaningful relationships to develop. And then we also heard about relationships with community partners, industry partners, and then peer-to-peer relationships as well. So as we're thinking about opportunities for relationship rich education, living-learning communities are really exciting space to help those types of relationships flourish.

(31:05):

Once again, I'm Jessie Moore.

Nolan Schultheis (31:07):

And I'm Nolan Schultheis. Thank you for joining us for Making College Worth It from Elon University's Center for Engaged Learning.

Jessie Moore (31:14):

To learn more about living-learning communities and The Data Mine, see our show notes at www.centerforengagedlearning.org. Subscribe to our show wherever you listen to podcasts for more strategies on making college worth it.

Making College “Worth It” – Season 1, Episode 5

The Data Mine