Sierra Dawson:	Good morning Everyone. Good morning Rebecca. Thank you all for joining us this morning. I'm thrilled to see you all here. It is my sincere pleasure to introduce Dr. Emily Miller, who is Associate Vice President for Policy for the Association of American Universities. Emily and I met in October in DC, where she was hosting a conference that was a STEM networking conference.
	I was really excited at that meeting to hear about the leadership that AAU has been putting forward, especially under Dr. Miller's work around teaching excellence. I know that this room is not full of STEM educators, we are all educators across campus. I want to let you know that AAU has a particular STEM initiative that Emily's been working on, we're going to talk more broadly about teaching excellence across campus.
	But it was just so exciting to listen to the AAU talk to us about how excited they are about our Teaching Excellence. Here's a quote, specifically, from the AAU president, Mary Coleman. "At AU institutions, we educate close to 1.2 million undergraduate students every academic year.
	In educating these students, AAU universities have the responsibility to promote the use of evidence-based teaching practices proven by the research to be the most effective at advancing student success. Additionally, they must provide their faculty members with the encouragement, the training, and the support to effectively employ these instructional approaches in the classroom." So, I'm excited for that messaging. I'm excited for that leadership.
	I was thrilled that Dr. Miller was willing to come to campus. She'll be doing a number of meetings with different groups all day today and tomorrow. This morning she's going to talk to us about the importance of aligning practice to policy, which is one of the key components in really recognizing and rewarding excellence on campus and seeing cultural change. So thank you all for being here, and welcome Dr. Miller.
Emily Miller:	Thank you. Good morning everyone. Just so I have a sense of whose in the room here, if you're a faculty member, could you raise your hand? If your role is more of an administrator across the campus? Do we have any undergraduate or graduate students in the audience?
Male:	Yes.
Emily Miller:	[inaudible 00:02:32]. Anyone that would be put in a different category? That's helpful for me to know, just whose here, faculty members and administrators, really. Thank you so much for coming this morning and starting your day with a conversation with me. I'm very happy to be here at the University of Oregon. I have not been on your campus before, so this is my first time at the University

of Oregon. I have been to Eugene before but I have not been on the campus, so I'll have ...

I joined AAU about five years ago in the policy division. It's a 27 member organization, and I work for the Vice President of Policy, Toby Smith. I was brought on, really to focus in on institutional policy. The work that AAU does with its member campuses in the space of undergraduate and graduate education.

So I work on projects within the association and our member campuses on the improvement of the quality and effectiveness of both undergraduate and graduate education. My disciplinary background is higher education administration and policy. So I look at this work very much from a lens of institutional and organization chance, and a real understanding of faculty work. So that's a bit about me.

As it pertains to AU, why don't you just quickly turn to groups. Do you know about AAU? If you could put your head ... Like, do you have a sense of what AAU does as a national association? Okay. Sometimes when I talk to groups, they're like, "AAU who? Or the Amateur Athletic league?" There's variance on who AAU is. So I thought I'd just give a little bit of information about AAU, but I can move through it quite quickly.

So, AAU is a national association representing 62 leading public and private research universities. Two are Canadian and 60 are here in the United States. The portfolio of work that the association really works to support across all our members, I could say falls in three main areas. We have the policy shop that I work in, that works a lot on institutional policy, cross cutting issues that affect our institutions.

I have a group of colleagues that do Federal relations work that really look to advocate for issues at the Federal level that affect our institutions. We have a public affairs unit that focuses on very much public affairs, press, media, how are we telling the story and the narrative of AAU institutions? As I said, there's about 27 of us.

As a collective, we convene the institutional leadership of our member campuses on annual basis. In those conversations, they're very rich conversations amongst the presidents and chancellors, or the provosts, or your senior research officers, around issues that our member campuses are wrestling with both in this space internally and externally.

Who makes up the AAU institutions? Just to let you know, the AAU member campuses are very highly engaged in research, produce a tremendous amount of research nationally, and our recipients of a large amount of federal rewards for the advancement of research. There's also a significant economic impact that our institutions have within their state and nationally on work that emerges

from our campuses. We are very engaged in education both in the undergraduate and the graduate education space. We produce a significant number of Ph.D. students across the nation.

I wanted to talk about the work in undergraduate education. As Sierra mentioned, about 1.2 million students are educated at our institutions every year. AAU in 2011 launched an initiative called the AAU Undergraduate STEM education initiative. This initiative had some significant motivations on behind why AAU chose to engage in undergraduate STEM education. I would say it was the starting place.

I know that many of you here are in the arts and the humanities. The initiative overall, when we look at it, when we start to look at institutions and cultural change and what will sustain efforts on campus, it cuts across all disciplines. But the place that we began was in undergraduate STEM education.

That was largely in part of the policy environment in 2011. There was the presidential PCAST report that was put out around, "How do we prepare a scientifically literate society? How do we think about the scientific workforce going forward?" There was also significant research done and was culminated together in a National Academies report in a consensus study on evidenced-based teaching practices, that we knew how best to education undergraduate students in science and mathematics. It was thinking about, "Well, how do we scale and spread, and support faculty members in using these evidence-based pedagogical practices?"

AAU, amongst this national context, I wanted to also acknowledge, have been engaged in work in undergraduate education. We had talked about student success. We had talked about a previous report that was done. In some informal surveys, post Boyer Commission Report, when research universities were highly criticized for undergraduate education. We asked our campuses, "What are you doing?"

The large response by campuses is, "We have undergraduate research opportunities. We know how to educate graduate students, so we're going to provide that same experience to undergraduate students." Every had Europe programs. We said, "Beyond Europe programs, what else do you have on your campus?"

There were very few things that actually emerged beyond the Europe programs. Things that did present themselves were often outside the classroom. They were in very important co-curricular spaces, but it was not necessarily the curriculum of the courses and working directly with the faculty members in their departments.

So, with this larger context, we moved forward with our initiative. Over the course of the initiative, we received 11 grands; we brought in about 8 million in

this project, to work with our member campuses. The primary, over-arching objective was to really think about the culture of STEM departments at our institutions. And, "How do we help support faculty to use the evidence-based practices that we know are to be effective?

So with this larger objective, we moved in. We've had five goals for the initiative. I'm going to go through the initiative goals, talk about the work we've done in those spaces, and what we've learned. If you have questions as I go along, please raise your hand and ask them. I've also tried to prepare some times for some more reflective questions that you can discuss at your tables as we move forward.

The first was to develop a framework. If we were to put a framework together for systemic change in undergraduate STEM teaching and learning, what would that look like? How could that maybe drive behavior and conversations on our campuses to think about the improvement of the quality and effectiveness among graduate education in a wholistic manner?

We also had funds to seed fund project sites at our member campuses, to be laboratories, to be pilots to implementing this framework. We had funding for eight project sites, but it became very evident as this project was unfolding that all the AAU, the intention was for all AAU campuses, but it became very evident with the call for the eight concept papers that many AAU institutions were wanting to be engaged.

So we quickly wanted to figure out how do we support a broader network across the AAU institutions of a community, of individuals who are dedicated to improving undergraduate education? And how do we connect them across our campuses? What [inaudible 00:11:44] could we have, and how do we support them?

We also felt it was very important to look at critical institutional policy, and that was around promotion and tenure. How at research intensive institutions, where you are highly valued for your research contributions will you be credited, acknowledged, rewarded, supported for your dedication of time and effort of improving undergraduate education?

So, we felt that this was a critical institutional policy that really needs to be thought about how it is enacted and practice. I don't think any AAU campus does not have a policy that teaching is considered as part of the process. But what actually happens in reality, I think, varies greatly by discipline, department, and across institutions. So, that's a space where we've given some dedicated work and partnered with some key collaborators nationally.

We also wanted to acknowledge that there might be some federal policy levers that we could pull upon to help advance this work. The area where we've spent energy and time is in the space of broader impacts. Broader impacts, as many of

you are aware, are part of NSF grants, and it is written into Federal legislation. So we wanted to understand how is broader impacts supporting the improvement of undergraduate education? I can speak more about the work that we've done in the space of broader impacts.

To just move forward .... Oh, the fifth was dissemination. As we move through this process, how are we learning and how are we sharing this both within the AAU community and the broader higher education community?

The framework as a documents, is available online. It has three layers to it. Really, what is the pedagogical practices? What's happening in the classroom? Scaffolding, how are you supporting faculty members and departments in the implementation of evidence-based practices? And what are the large institutional cultural norms and values that we need to be looking at as we look to have systemic change.

I would say this document was sent out to all the AAU institutions campuses for comment. It was began as much more prescriptive document, and it got feedback to say that it needed to be more conceptual. Campuses wanted to see themselves in this document. So this document's available and online for you to look at, but it was the first piece that was kind of guiding the work that we had.

We followed up with this report on essential questions and data sources. This was the development of a document that we felt like, "How would a campus know that it's doing work across the framework?" So, we have put together a set of questions that could be asked at the department, college, and institutional level to reflect on to see, "Are you making progress across the elements of the framework?"

We also found across our campuses the institutional data was being harnessed in very new ways to answer really thoughtful questions around undergraduate education. This is a very emergent and developing, and growing space, and so we have put together and it's more robust online, a what we are aware of across AAU campuses where there are data sources or analytical tools that are helping to answer those questions and how campuses are using those analytical tools.

Some are open source, some are research publications of different types of protocol or surveys, but we found it very important to list what do we know out there on how campuses are answering those questions, what methodologies and instruments and tools are they using.

Finally, the addresses some challenges that we recognize campuses have in this space, and gives some good examples. Some campuses really struggle with IRB. Where's it located? Is it education research for institutional improvement, or is it been done for publication? Where is data located? Who has access to data?

How can data be used on campuses? How do you address questions around FERPA?

So, campuses have wrestled with these challenges and they're coming up with some very interesting solutions on how they navigate a path forward where they've run into some tensions, and collecting and analyzing data to answer these questions. So, we're trying to keep apprised of what's happening on our campuses in this space.

Across the AAU institutions, as I said we have the eight initial funded seed project sites, and we had the broader network. I think a theme that came across in our research, when we talked to faculty members and administrators on our institutions, was how can we as institutions, be as excellent in teaching as we are in research?

All our campuses have had undergraduate students, and there has been a commitment to undergraduate students. But I think it was just resonated, how in the value orientations of our institutions, and, how in our practices do we support being excellent in teach as well as the research?

These are the eight seed funded campus project sites. We still are engaged with them, but the data collection for our report went across three academic years. These are the total number of departments, the number of transformed courses, and the total students seats in transformed courses within that three year time.

What we're observing in these is many campuses would begin with one section of one introductory course. With evidence that it worked, went to maybe all sections. Then if all sections, then went to every semester. The graph is just going up with the number of students touched by redesigned pedagogy and redesigned courses. So this is just the numbers that were produced across these eight project sites.

Each of these eight projects sites took on a different approach and strategy that connected to the culture of their institution. Different departments were engaged. On some campus fields, you might say, they've been leading in this space for a long time. That doesn't necessarily equate that that's the leading discipline within an institutions.

So, I think each of these campuses had different departments that were really the leads in doing this work, different strategies and different approaches. We were comfortable as an association that there were going to be different strategies and approaches on how to advance this work locally within the campuses.

We moved quickly to saying, "Okay, we have these eight project sites and that's wonderful, but half our member campus sites submitted applications, 31

submitted applications, we need to move them forward." So we have, as Sierra mentioned looked to annually convene individuals across our campuses with conferences. You had focused workshops. We convened department chairs, and we will be doing that again.

So we've had very targeted convening for individuals across our campuses. I visit campuses regularly, along with other colleagues. We try to find other ways to seed fund work on campuses, and we recently have secured a million dollar grant from Northrup Grumman, where we awarded 12 mini-grants to 12 institutions, and a second round of that competition will start this fall for other institutions. So I put that on your radar for coming up in September.

But a large number of our institutions are engaged. But the engagement doesn't just have with the institutions and us being engaged with the institutions, these are conversations that happen. We bring this work to the president's and chancellor's meeting, to the provost meeting, to the graduate deans meeting.

They are having conversations about this work. We are sharing regularly with them what's happening across our campuses in this space, and they are engaging in conversations and we push them and challenge them to consider findings that we're learning about.

So, we published, this fall, a five year status report. The executive summary of the report is around on your tables. The full report is available online. The report has five section areas. Just quick, we talk ... The first section, what did we do? What happened over five years across all the goals? We have a deep dive into the project sites about what was learned at the project sites, evidence of outcomes that happened at the project sites. We discuss what's happening across the network.

Section four really talks about the cross-cutting strategies that we saw happening across our campuses, and I'm going to spend time talking about those cross-cutting strategies. The online appendix, it's just, if you wanted to see any piece of writing, or any RFP for the process, what our common data collection efforts were across an evaluation, we've really tried to put an online appendix up.

It's more for my colleagues who are running other multi-institutional projects. If you wanted to know, really, how did we go about doing this? All our resources are there. So we wanted to provide to the community what was our approach and strategies and communication that we had across the initiative.

So I wanted to discuss what we learned. This was published in the report, but we also put out a Change Magazine article this fall, as a shorter summary of these findings. These are the key elements that I would say that we saw happening across the project sites and the network, that really catalyzed a

campus to be moving forward in the space of improving the quality and effectiveness of undergraduate step education.

One was, there was a shift explicitly on campuses that the department took collective responsibility for the introductory foundational courses. It was not the course that just got passed from one faculty to member to the next with different learning objectives and outcomes. They really thought about what is the curriculum, the learning goals, and the corresponding assessments that go with that course?

And regardless of who's teaching it, the commitment to those learning goals and to that assessment? That was some difficult conversations within departments. What is the foundational content for this course? When we've see departments engage in those conversations it's been very fruitful.

We've also seen a variety of hiring that's happening within campuses. I don't know your campus well. Some campuses have discipline-based education researchers hired into the departments within the STEM communities. Others have hired done more of a [Carl Wineman 00:23:30] SEI model with post-docs that are embedded expertise in the department to support and work with faculty members.

Other campuses, you know, are working with undergraduate learning assistants or graduate students. But I would say campuses that have really focused to say, "How do we bring pedagogical expertise into our department? And how do they not be considered second tier faculty members?" Have really been affective, that they sit on committees.

They might not vote a tenured track faculty member on a research line, but they are part of curriculum discussions, they sit on committees, they partner with faculty, they help re-design courses, and they are evaluated that a part of their job is for the institutional improvements.

So as they work to improve the courses in the course, that is being valued, and recognized and assessed for them. No campus has really designed a new hiring track. They've capitalized on tracks that already exist, because they knew going through the faculty senate or new lines, or if they were in the system were harder barriers to overcome. But they've worked within established hiring lines to think about, "How do they bring the pedagogical expertise in the department?"

Some campuses have made a shift to saying, "No, we're going to take a research faculty line, and it's going to be just a discipline-based education researcher, and they're research is going to be in education research. That's what our department values." So, it varies by campus, but that expertise is being brought into the departments and it's very local.

Institution-wide data, it is being elevated to new spaces. I think in a lot of times it's research and compliance focused. It might have been in institutional research. We see institutional research being moved closer to the provosts office. The office is being talked to more about institutional research along with student success, has information get back down to departments to make decisions in a timely fashion. What type of evidence does your department need, or your college need, to know that this is working? So we see institutional-wide data being harnessed in some very interesting ways.

There's some campuses really on the forefront of this as well, some national groups coming together on looking at institutional-wide data. But that really does with require leadership from the top saying that this is a priority and bringing those, wherever it's housed on your campus, together, and putting together the supports for that.

We actually had two campus leads talk to the provosts about this, and you could see in the room as the provost turned and looked, like, "I don't know if I can answer those questions on my campus. I don't have the infrastructure." We've just seen that emergent of growth on a number of campuses.

Teaching and learning is being supported in new ways on campuses, and campuses are going through some time of some hard mergers of different units, of bringing them together. Sometimes campuses, necessarily, are starting at a blank slate where how are they going to support teaching and learning?

They're able to design whole new offices. Some campuses have very robust teaching and learning centers that are expanding their work and portfolio. Then on campuses there have been some emergence of STEM ed centers, or other areas. I think it's very dependent up on the culture and history of your institution.

Some campuses I go onto, the teaching and learning center is, that's where you're sent when you're a bad teacher. It is a punitive location to be go. So it doesn't resonate well with faculty. So, new centers are being developed. But we see re-organization on how teaching and learning is being supported.

We see how undergraduate tutoring is now being brought in with the graduate student training on pedagogy because students are going to the TAs of the courses, as well as the tutoring centers. So, how are these supports and infrastructures really being brought together?

The financial models and the business models that drive things on campuses cannot be avoided and campuses are talking about it. Are you responsibility-centered management here? Do people know what that is?

Sierra Dawson: We're not any more.

Emily Miller:	Not anymore. Okay. So sometimes, I think very always and well-intentioned designs at one time, have unintended consequences down the line. So in some cases, mathematics really wasn't doing well in teaching well in structural statistics, so then the college of natural science -- I'm making this up -- the college of natural science says, "We're going to teach the statistics internally because we think we can do a better job."
	Great. Well then the mathematics department does a whole new curriculum redesign, the evidence-based pedagogy. Now they're like, "Well, if we give up the statistics, we're losing a lot of tuition dollars that's been really good to our ... " So, the business models drive behavior in very unique ways on campuses. Understanding that, I think, is one of the many intellectual challenges of my job when I go to a campus, like what are the drivers on campus?
	And the business and financial drivers are there. You look about how are undergraduate learning assistants supported on a campus? Are they supported? Do faculty have more TAs? On some campuses they're like, "Well, we need funding lines for more TAs to do the work in the classroom."
	Learning spaces are being re-engineered and redesigned. Spaces just like this that are often used for talks or alumni events, the people are saying, "Well, that's a really good setup here, there are round tables." So, how do you space differently on campus? Sometimes it's been large expenditures of resources to redesign spaces. Others, it's just capitalizing on space that already exist in new ways.
	I would say one key thing that we learned is when campuses have redesigned learning spaces, who owns the space is critical. So, often in redesigned learning spaces, the provost owns the space, and no one goes in that space unless they know how to teach effectively in that space. That has been a real sense of creating some faculty learning communities that then really want access to the space.
	Then they're learning how to change their courses. And that's engaging the registrar, then, in conversations around the improvement of academic education. I can tell you the registrar will go, "I was never in these conversations before." So things are new.
Speaker 3:	Question?
Emily Miller:	Yes.
Speaker 3:	Wondering what you mean, as I'm sitting next to the provost here, by "The provost owns that space," you were talking earlier about?
Emily Miller:	Right now, often on campuses, the registrar just have every single space of university teaching that's on campus. Then they'll ask the department chair,

"We need to know what classes your teaching?" So, say it's spring right now, "Spring 2019, how many classes? How many seats?" And then they're just plugging a schedule in and making sure bodies can move. There's not a sense of, "Well, how's that course being taught? What type of space do they need?"

With the redesigned learning spaces, the provost is more, they are filtering who's teaching in that space, and then there's sometimes pre-requisites, like, "Well, if you're going to teach in this space, you need to be part of a faculty learning community. All the faculty teaching in this space are part of faculty learning community." Or, "We need to see your syllabus of your course that shows that you're going to use the space.

You're not going to be in a very redesigned classroom space, but yet still being sage on the stage from start to finish," in their talks. Does that help answer your question?

Speaker 3:   Pretty much.

Emily Miller: I think, what our phrase is the simultaneous pursuit of high quality teaching and research. How do you support ... Some faculty members are going to do education research. Some faculty members are going to be embedded expertise in their departments and working on education improvements. Other faculty members are running a wet lab bench, but they really want to do well in their undergraduate teaching.

So, how do you support them and know that their entire research agenda isn't going to shift? That's an unrealistic expectation across our campus, so how do you support a real mixture of faculty who are working in this space, and how do you reward all the contributions of faculty work?

Then the really commitment to systemic and long-term STEM reforms. I'm sure you see this in the arts and sciences as well. Grant-to-grant funding of efforts to improve the quality and effectiveness of undergraduate education is not a sustainable model. If you've done something or piloted something and it's working, what is going to be the business model and the institutional resources that are going to sustain that over a period of time?

So, while research is often funded grant to grant, undergraduate we really don't think should be looked at it the same way. Then we, as AAU, we want to continue to leverage ... How can the institutions benefit from AAU being engaged in this space? How can we leverage AAU to further help things on the campuses?

So these are some of the larger cross-cutting elements that we saw were real factors to campuses moving forward. Some campuses, they were leading in these areas and other spaces were growing edges, but they've dedicated time to them. I think on your campus there's probably spaces where you're leading,

and there's probably places for growing edges as well. So I wanted you to just take a moment right now, at your tables, and just kind of talk a little quietly, or not quietly, but talk amongst ourselves at each table. Those were the factors we observed in our study.

Are these cultural shifts occurring on your campus? How are they being communicated, supported, and measured? Are there other evidences of culture change that you've seen on your own campus? So if you could just turn to your neighbors there and have a little reflective time on ...

Female: Hi.

Female: Good morning.

Female: You want to introduce yourself?

Female: Yeah. That's good.

Group: [crosstalk 00:34:14 - 00:38:20] …

Emily Miller: We're going to maybe give you one more minute to have your conversation, and then we're going to ask, with the time we have, if comments want to come from the tables. So, 60 seconds.

Group: [crosstalk 00:38:31] …

Emily Miller: Okay, I'm going to bring everyone back together, and I've been told that with our live streaming to colleagues in Portland, as well as other parts of, maybe, the country who might be watching in, that we do need to make sure that report outs are on microphone so that everyone can hear. But, I'm not going to give choice.

We're going to go from table to table and ask for just some thoughts. So is there a table that is interested or willing to go first. Okay, why don't we start back here in the back? I'm going to try and be on this side of the room. Hopefully if I maybe stand beside you or close by, the microphone can be ...

Speaker 9:   Online education. So ... Thank you. So we talked about two things. We do think there are cultural shifts happening across the university, across departmentally in terms of grant proposals and development, outreach across university library systems and departments in lots of exciting areas.

I wanted to ask for your perspective. You've been talking about physical spaces and physical resources. Can you talk a little bit about how that fits with online or digital or virtual kinds of spaces and resources as well?

Emily Miller:	Thank you. What I've and noticed on some of the AAU campuses is how the online elements that many of our campuses have, and they vary in their infrastructures, but it is allowing faculty members to repurpose how they use in class time. So I think while some of our campuses have 100% courses online, or larger MOOKs, that they facilitate, I have an MIT report I would really encourage you to look at that was very robustly done looking at MITX. MITX, just to let you know, is a report.
	MITX is the online educational portal for the on campus MIT students. They did a lot of cognitive and neuro science with that report. It really emphasizes how, in the learning process, how students learn, the real benefit of both the online and the in person. But with the hybrid combination, how in class time could be repurposed or restructured or re-bundled in very different ways that were very productive for student learning.
Sierra Dawson:	Who's next, these guys?
Emily Miller:	Yeah.
Speaker 10:	Hi, Bill Hard well, economics department. So, we talked a little bit about using data to try to improve teaching practices, and also the kinds of courses that students are taking so that they can get through in a timely way, and learning something. I think our general conclusion was that the university really suffers from a lack of consistent, high-quality access to data and analysis of that data for those purposes.
Emily Miller:	That's a growth area for many campuses.
Sierra Dawson:	This table. You can argue over it.
Speaker 11:	Dean [inaudible 00:42:39], physics. I think what you said at the end there, the commitment to systematic STEM and other areas of education reform versus a grant to grant mentality, is a real challenge for this institution. The research side really emphasizes grant to grant and year by year metrics and things.
	In the past many of us have had what we considered to be very successful STEM undergraduate initiatives that have fallen, that have died off essentially from lack of long-term commitment.
Speaker 12:	Let me add to that?
Emily Miller:	Yes.
Craig Parson:	Craig Parson, photo science. Just an optimistic note, these systems absolutely are essential. But what I'm seeing in photo science and I think in other departments is, in terms of our cultural shift, absolutely [inaudible 00:43:37] out

of the ground. Our younger faculty in particular, are totally on board with this whole conversation.

Also, I have the impression this university at the various levels of leadership, also totally on board. So it really is that it's there to be put together, then the systems to make it last.

Emily Miller: Are we talking about when, for AAU is really beginning to want to ... What's the relationship amongst historical activities, current activities within a campus? And how are those effectively brought together?

Sierra Dawson: Who wants the mic? Sarah.

Sarah Hodges: Sarah Hodges, psychology and graduate school. One of the things we talked about is that there are initiatives and a number of cultural shifts. We give a big shout out to the Science live-see program. We talked about the senate's evaluation of teaching, you know, figuring out teaching evaluations.

One of the things we talked about is there are resources for starting new teaching initiatives, and faculty get a term off or get some extra money to do this, but then they're not -- I think this goes with what this table said -- they're not the resources for supporting that.

Then the other thing that really was compelling to me and to our table, you said was, "You can't fund teaching initiatives from grant to grant." You maybe want seed money to start a program, but then you need to figure out how you're going to support it beyond that.

Sierra Dawson: Thank you. Who from here would like the mic?

Ian: Me. Ian [inaudible 00:45:08] physiology undergrad school. We had a discussion about how teaching was valued at the institution from the point of view of tenure promotion, and also merit. And whether or not, for example, if I don't want to poach your example, but if you had exceptional research, how bad would your teaching have to be to not get tenure? It was just a discussion around these issues, about how much ... Not that teaching's not value, but how it is rewarded.

Sierra Dawson: Who here would like the mic?

Karen: Karen [Ford 00:45:54], I don't know where I'm from. Somewhere in limbo. You're all gaining a faculty member. I was here for part of the conversation where we really think there's a cultural shift going on on campus, thanks especially to a few people in this room. Then I was interested in your point about IR being in the provosts office.

I think it's distinctive that undergraduate studies or teaching excellence student success has been moving to the provosts office. Or the provosts office has been dedicating a lot of position and a lot of time and his ability to student success. I'll put it that way. It's not that we don't have undergraduate studies elsewhere, and wonderfully on campus. But you see it in our provosts office.

Emily Miller: Very nice.

Adrian: [Adrian Lung 00:46:46], Dean of Libraries. We didn't get a chance to discuss this at the table, but lately been reading about how girls and young women are not entering the T part of the STEM as much, and wondering how AAU is addressing gender equity and people of color entering STEM fields?

Emily Miller: Yes. We've been tracking about how do you create, as part of thinking about teaching pedagogy, how you create inclusive and welcoming classroom environments, just as much as ... I would put it this way, as we think about how we improve the teaching pedagogy, be evidence-based. Also, how do we look to improve the environments being inclusive and welcoming.

I think that fits into the pedagogy and I think it's just as the poor teaching could have moved students out of the disciplines or areas, I think not having an inclusive and welcoming environment for students in those classroom spaces also can be a factor in student's choices.

In regards to the overall demographics, that is very discipline specific. I think talking about it monolithic ally you get into not-good spaces. It's a very discipline specific. But I think one thing you can say in the aggregate is the students who come to our institutions with the intentions and the aspirations to study certain subjects do not persist. They flow out.

And when we look at the analytical data and you look at the student pathways, you can see the students and how they move. It's interesting with some of the analytics that are put out from campuses, the students are making the choice and the institution has no idea, because they're making the choice with their choice-taking behavior. But because they've not officially documented that with the institution, their advising structures are not transitioning or changing at all.

We also have a large number of transfer students coming into AAU institutions, and there's a real ... What counts? And I think sometimes admissions is saying, "X counts." But then when they get actually in a department, it doesn't add up. So time to degree of what, maybe, the student was initially told is shifting on them.

So there are ... and when you look at just the demographics of where students are going, I think the data has been demystifying in some departments on campus, they're critical of who they are losing. Actually, they are losing some of their best students. Despite maybe the lore in the department that that's not

the case. So I think the data has been a very powerful tool to start a conversation.

In of itself, it will not change behavior. Research has shown that. I mean, if we use the data to say that's going to change our behavior, I probably wouldn't be standing here talking to you or having a large national initiative association. But it is a very important foundational place to start the conversation with the data, I think, in all the spaces that you just brought up.

Speaker 16:   [inaudible 00:50:01], communication.

Emily Miller: Very nice to meet you.

Speaker 16:   The same. We talked about four things or five things. But, briefly, the main aspect is the fact that we are in this session having this conversation is part of the cultural shift. The second is that there are some areas in chemistry that the emphasis has been on research. But they can shift from research excellence and also teaching excellence.

The next aspect was computer sciences. How you work on [inaudible 00:50:37] situations and teaching capacity when your major is growing significantly. So, your emphasis should be on how to handle this growth. It will be challenging for them also to introduce a person that is expert in communication when you need to [inaudible 00:50:50].

In the case of professional schools like journalism and communication, in fact, we are going through international implementation right now. And the [inaudible 00:51:01] is going to be in February. [inaudible 00:51:06]. We go beyond teaching evaluations for individual faculty to also evaluate academic portfolios, professional portfolios for new students and also [inaudible 00:51:17] performance and placement which is the most difficult part.

But to see teaching excellence through a wholistic view or [inaudible 00:51:29], especially faculty [inaudible 00:50:32] performance.

Emily Miller: Very good. Thank you. Accreditation has been a lever that some campuses have really used to keep it at the forefront of discussion.

Ron Brown: Ron Brown, [inaudible 00:51:45] vice provost and we were preaching to the choir at this time. We're all involved in this effort but I guess I would say that I'd first give acknowledgement to some really critical department driven initiatives over the past five to 10 years, math, chemistry, biology, doing some things to really address [inaudible 00:52:05] gateway courses and things like that.

I think we're now beginning to elevate the conversation to an institution level. So that's good. I think the systemic change is where we really see cultural

change. Right now we're elevating the conversation. We've got a great teaching engagement program that does great work.

We formed a teaching academy last year that brings together recognized teachers to both learn from each other and inform teaching excellence. We formed three faculty learning communities last year that are doing critical work around specific questions. Can we keep those things going? That's the big question.

Emily Miller: Thank you. I appreciate your acknowledgement that locust is the department. I mean, when you study faculty, faculty's a [inaudible 00:52:51] discipline. And that community and locust of the department is really central to where I think you need to have long lasting and sustained changes. So ignoring the department unit as the real locust is a mistake.

How do you acknowledge the work in that space but make it supported institutional wide.

Scott: Scott [Brett 00:53:16] from Velocity and the provost office. We talked about two things mainly. The first was the space issue that you raised and that we have some pilot programs in place but we're a ways from being able to implement a pairing of teaching approaches and space. But it seems like a good idea.

We also talked about the importance of squaring our budget model and tuition structure with student success. The fact that we have a long way to go. without a credit plateau students are in a position where they're incentivized to register for fewer courses. The upshot is that it takes them longer and it makes the process more expensive and so on.

I know we've worked on this some but that's sort of part of the thinking about student success has to also be thinking about tuition costs and the way it impacts undergraduate students. One thing we didn't talk about was the issue of cultural change and I just wanted to follow Ron and mention the teaching engagement program and the impact it's had over the last couple of year.

As the former graduate school dean one of the things that happened when I was bargaining was that the union and the administration implanted mandatory training. Part of that mandatory training is actually about teacher education for our teaching GEs and I think that's part of the general shift being much more attention to pedagogy. I think it's being really well supported by TAP and things like the teaching academy and the [inaudible 00:54:46].

Emily Miller: Very nice. Thank you.

Sierra Dawson: This table.

Speaker 19:   [Bryan Rebar 00:54:58] with STEM Core, STEM Research and Education Center in the College of Arts and Sciences. Our conversation echoed many of the other comments that I've heard here touching on the relationship between research and teaching and the incentives and structures to support both endeavors. We also touched on the changes in the business model that had some impact as you commented earlier.

I'm going to pass to one of my colleagues here from business to explain his comment on that.

Chad: Chad [Carlock 00:55:35] from the College of Business. From the RCM Model there was a ... I sat on the curriculum committee for the university as that was being implemented and we saw a huge number of courses being implemented at the department. So the RCM Model drove behaviors that we didn't want.

So we really need to think longer term at the unintended consequences as we implement some of these things and not just say this is a good thing to do right now but think longer term in that regard.

Speaker 19:   Just to add onto his thought, thinking about also the how you can merge both the research and the teaching into related efforts is something I'm involved in and I think others are thinking about as well.

Sierra Dawson: The next table.

Speaker 21:   [inaudible 00:56:30], College of Design. I think we spoke mostly about the faculty perspective and how do we incentivize and encourage faculty to make changes in their courses to take the time to learn how to learn how to teach. To change their behaviors that they've been doing possibly for decades in an environment where I think a lot of faculty feel like they're already being asked to amp up their research agenda, amp up service work.

There's been a lot of change in the university over the last few years which has required a lot of policy development and other things. So, I think faculty are feeling a little burned out and how do we make this attractive to change the pedagogy rather than making it one more thing that they have to do from the top down.

Emily Miller: Are there any other comments that anyone would like to share? Thank you for taking the time to have conversations with colleagues you know well or new colleagues this morning. I learned quite a bit about your institution just in hearing your reflections and thoughts.

So thank you. I wanted to speak now to some of the work that Aarau done in the more latter two goals of the initiative and that I think touch upon some of the things that were raised in the discussion here. Not all the things but two of the things.

We have, as I mentioned, when we talked about the goals talked a lot about how are we thinking about the reward structure broadly on AAU campuses. We really set that there should be expectation for project sites. So all our campuses that we see funded resources to was how were they going to think about the faculty reward structure. That has been an effort that we've had to put a lot of ... We had to nudge the campuses quite a bit and not let them not have that conversation.

But I would say that AAU's collaboration with the Cottrell Scholars that are funded by research corporation, RCSA, that's based out in Tucson has been a very productive collaboration. That emerged when Toby Smith, Vice President for Policy, we was invited out to the Cottrell Scholars meeting and in that meeting he shared in 2010 when AAU was thinking about launching this effort.

The Cottrell Scholars are physical scientists who are highly rewarded for their research discoveries but a strong interest in undergraduate education. The scholars there said very quickly, "If you do not address the promotion and tenure process", because they were early career faculty ... "If you don't look at promotion and tenure, you can do all this other work in all these other spaces it's not going to change the behavior at a research intensive institution".

The Cottrell Scholars also include PUIs. It's been very fascinating to see PUIs have some of the same pressures on them as well and the demand for research in those institutions and the [inaudible 00:59:37] has been growing by the day as well. We partnered with the Cottrell Scholars over a number of years in some research collaboratives and we've had it workshopped together.

The fascinating part I want to say about that research workshop was we had research active scientists in the room who didn't know probably -- who knew very little about education, educational part of pedagogy, how people learn, how you discuss teaching. We had those who had been working in that space in education for years. It was this aha moment.

Like oh there is literature in scholarship in this space. Yes there is. Okay. Then you had those in the education space say well this is how you do it and they bring out the long surveys or portfolio based and the scientists were like oh no, that is too much of an ass. I don't know how I would fit that into my teaching and my research.

It was a very productive conversation to say well how do you come to a place where something that can be of quality of rigor but they could be functionally used by a large majority of faculty members. So, we moved from that workshop report. We wrote an article in nature. As I said, my discipline was higher education. Did I ever think I would write an article for nature? Never.

But the scientist said if the scientists are going to change we need to publish this in the place the scientists read. So we got an article in Nature about the work

we were doing and then we moved to a workshop that moved to really about practices to policies. AAU surveyed kind of a small sample of our institutions about their policies, institutional policies. All of them have something in it about teaching.

But it's the enactment of those policies where we fall short. Where we, our actions do not live up to the espoused values that we articulate and that needs to be thought about. How do we think about that in the hiring, the expectations that are set from the start, what type of tools and resources are we giving to faculty to be able to document both their contributions to research and to teaching. How is it viewed in committees? When you get to the institutional level, I think this will be a good example, who's there kind of articulating that in one discipline two peer review pieces.

We … I'm mixing. In teaching people today it's very … It's hard. How do you document it? How do you differentiate between in? we've seem to figure out how to do that with research knowing that research productivity looks very different in different fields. So we've been able to figure out that being a co-author with 10 others from your lab in one discipline and having many publications is just as robust as maybe someone who published a book in another discipline.

So we're making sense of some real differences and disciplines of research. How do we start to become more comfortable with maybe the ways in which teaching is documented across the campus? But we are talking about how do you think about it. What I would say is campuses are experimenting. University of Kansas has a rubric right now that they're using and they're piloting within departments.

Their strategy is just as you come up with an aggregated number on those student teacher evaluations we need a number and we want it to be a thoughtful number in how we come together. But in the eyes … They think like how do we come up with something that looks similar, feels similar for documents. So they're piloting a rubric based approach.

University of California, the policy says two forms of evidence. The online form, there's only a box for one and it's for student evaluations. So no one ever put the second piece of evidence. So, their practice change was the online system form needs the second box. Oh, that caused a stir. "What do I put in the second box" Like, I don't know what to put in the second box. So then it's been an educational process, particularly at the University of Irvine campus like what could possibly go in that second box to document effective teaching.

UMass-Amherst is doing some work. Colorado is looking at seeming in their senate. I mention these because in a CBE life science essay article that was just published this fall, we talked about aligning policies to practices but we highlight three institutional examples in there of what they're piloting so you could look at that.

In addition, they just received an NSF [inaudible 01:04:27] grant where it's going to be studying about these implementations and learn from them. So I think there's a lot of emergent work happening in this space. That research group that's doing the study it's part of the Bayview Alliance.

There's also a national group called Accelerated Systemic Change Network and it has working groups. One of the working groups is on thinking about faculty work and how do we think about rewarding and acknowledging all aspects of faculty work the starting places they're going to look at teach.

I'm co-chairing that with a faculty member at Laverne University and that working group is cutting across all higher education sectors. So, I'm very much trying to represent the research universities in that space.

Lastly, AAU thought about and has put together a prospectus. We've worked with RCSA on defining this more, working to raise the money to launch this. But, and a department award. How could you recognize a department for quality and effective undergraduate teaching? We're thinking about it wouldn't be an AAU award.

I think it would be a STEM department award managed out of RCSA. We are working to define it though. It'd be for probably the very high Carnegie classifications. But I think if I were to ask you right now across your discipline could you tell me the leading departments in research in your field. You could probably name some institutions for me where the departments are really leading.

Can you do that for education? So how can we think about it in that way? So we're really working this space in multiple areas. But it's a space where there's experimentation, learning but it's a place where we're kind of continuously to put pressure forward.

Broader impacts, I'm going to speak to this. Toby Smith who does work AAU very much in the space of federal relations has been very active in this space. There's a national alliance of broader impacts. I just wanted to speak to you a bit about broader impacts. NSF proposals are required, as you know, intellectual merit and broader impacts.

Broader impacts can result from a number … Many things can meet broader impacts. But many faculty members don't know that improving undergraduate education in your courses at your university count as a means to meet broader impacts. We did this informal survey with NSF about – on broader impacts. The reality is is if you exclude career awards and other things it is very … Faculty members don't use it. They do not use it.

I think it's the easy way to have if your research is maybe on the line. If you have your broader impacts on improving undergraduate teaching it will sink your

proposal. So there's real fear in this space on faculty. We're working with NSF and the program officers to like how do we have more thoughtful conversations in this space. But something that was done between the 2010 when the broader impact criterion was put in the America that competes legislation was that we … So it was moving education.

What we did in the most recent legislation, the ACIA, which Betsy can you help me with the acronym of the AC? The American Competitive and Innovation Act I think is what it was. We lobbied and worked hard to have the word "and instruction" added in. so it said improve undergraduate education was what the initial legislative language said. But we've made it improve undergraduate education and instruction and wrote bill justification language that supports why we wanted to add the words "and instruction."

So with that in law, and I know that sounds very high, then we can start working with the program officers and the panels so that maybe we can get to a place where broader impacts when faculty members are talking about the improvement to their own courses on their campuses that it's used more readily. And it does allow research funding to be committed towards this space. So we've been … We worked hard with the legislative language last year and now we're kind of moving into the space of education around this legislative language.

AAU is advancing further research agendas in two areas that I want to just bring it to your attention that go beyond the five goals of the initiative. But I think more important research projects that we wanted to advance. The first one is in partnership with [Adrianna Keyzar 01:09:28] and it was asking about what's the role of a national association.

That's more for AAU internally to know. What leverage is … What levers do we have? Where is our strength as an association in working with our member campuses to improve undergraduate education and what can we say to our other peer associations, our other national projects.

So we've learned quite a bit about ourselves in this process and that will be coming out in a report in the next month. As we've learned, it is helping us design our efforts going forward. The other study that is with Jim Fairweather and Mary Dean Sorcinelli is understanding the relationship amongst multiple efforts on campus.

So as I went to campuses initially as part of the project site we had talked about their engagement within the AAU STEM Initiative. But then I'd hear, "Oh, there's an HHI funded project and we have something over here in DUE. And we've gotten institutional dollars to do this." I started to ask the question, "What the relationship amongst these activities within a campus. That's when I started to learn that maybe there wasn't as much of a relationship or alignment as we would hope for.

So, we are studying eight of our campuses that have a high volume of activity going on where we see some real promise in how they are aligning or organizing these efforts. We have completed our first round of case study data collection this past fall and we'll be going back for a second round next year.

But we hope that this could be beneficial to our campuses. Knowing that all our campuses have many activities going on but just to really understand what would be principles of practice that really help align and coordinate efforts within a campus and not have them operating in silos. So, we're excited about this project and it's in a real recognition of the multiple efforts happening within any one individual campus that are AAU members.

So I just want to say you might want to mark your calendar with that on the second round of mini grant proposals are going to be due in September. Those are funds that go to an institution. So, your campus will be … A call will be sent out if your campus wants to submit something.

In effort to support the network but also support the department, we're going to alternate the larger broader network conference that you'd all be invited to on alternating years with targeting STEM department chairs. So the department chairs are … Workshop is going to be held this October in 2018 and we'll be looking to have provosts and teams of department chairs to a meeting that we're hosting.

Really allowing department chairs within AAU institutions to have conversations within their discipline and across their discipline. We found that to be very productive. So with that, we have an advisory board. I just want to acknowledge that they've been really thoughtful leader from the STEM disciplines and education that have guided the initiative all along.

They have continued to provide guidance and push us in good direction. So I want to acknowledge their continued support over the years. But I thank you for your time. I know that your campus at this point like moves to like next shifts but I'm happy to answer any question that anyone might have. Yes.

Speaker 22:   Is there any sign of parallel [inaudible 01:13:17] outside STEM?

Emily Miller: Right now in the undergraduate space we have been staying focused in the STEM space. But as we [inaudible 01:13:25] institutional rewards that cuts across all disciplines. So it will move to that. I also have, as I said in my introductory remarks, I'm responsible for graduate education. So AAU is in the process of standing up an effort in PhD education and that will cut across all disciplines.

                So we're looking in the space of graduate education. We will be doing work across all disciplines. Where we go in undergraduate education to the broader disciplines, I think will come in time. I think some challenge that I face in that

space is the evidence base that was really developed in the sciences is not as coordinated and as strong in the arts and the communities.

But I do think when you think about what we're learning in the STEM disciplines I think that there are ways that that can carry over [inaudible 01:14:18]. There's things in the arts and communities that can be brought into the STEM disciplines. One thing to also acknowledge is I think with AAU's initiative in STEM, we focus in on large introductory courses.

I imagine the first place we'd go outside of STEM would be in social and behavioral sciences. Looking at the economics courses and maybe some of the introductory psychology where they're just really high large enrollment courses on campuses.

Speaker 22:   I think that this is a fantastic opportunity on how we become bringing together different people in this [inaudible 01:14:52]. Our opportunity is how do we add up all the pockets of initiatives and experiments that are going on right now on campus? How do we discover what they all are and actually build some connective tissue institutionally.

Tonight at the Hope Center we have a performance of Tesla which is a world premiere which is [inaudible 01:15:19] laboratory by four faculty here in physics and digital animation and choreography and music. They are addressing on stage scientific experiments and arts and music. How do things like this get translated into our curriculum and pedagogy?

We are doing this across campus in all these conversations and here we have this opportunity to begin to add it up for the resources that are here. So I'm very grateful for this.

Emily Miller: Thank you. I'm glad to hear about that work happening here. It is about how who builds the bridges within your campuses and the relationships and the connections and it's a full time job if not more among 20 people. Any other … Many of you I think I might see in subsequent meetings over the next two days.

So, I look forward to meeting with you if I have the chance in a more one on one conversation or small group conversation. Also know that I'm available at any time at AAU. I speak to individuals on our campuses at all times so if you'd like to call or a Skype conversation I happily accept your request and invitation. So, please feel free to contact me at AAU if you'd like to speak more. Thank you.

Sierra Dawson: Stay tuned for more conversation. [inaudible 01:16:48], he will be coming and visit us as well on February 5. So, barely a month from now so stay tuned to hear more about that visit as well and thank you so much again. Thank you.