Indiana University
BLOOMINGTON FACULTY COUNCIL
January 20, 2015
Kelley School of Business – CG 1034
3:30 P.M. – 5:30 P.M.

Attendance

MEMBERS PRESENT: Joelle Bahloul, Abhijit Basu, Purnima Bose, Andy Braden, Carrie Docherty, Lori Duggan, David Estell, David Fisher, Alyce Fly, Lessie Jo Frazier, John Gibson, Margaret Gray, Daphna Rae Greiner, Dennis Groth, Brady Harman, Jeff Hass, Bradley Heim, Ed Hirt, Cheng Kao, Jonathan Karty, Bradley Levinson, Karma Lochrie, Jon Lozano, Jon Macy, Patricia McManus, Joseph Miller, John Paolillo, Jennifer Pearl, Jamie Prenkert, Ben Robinson, Steve Sanders, Micol Seigel, Jim Sherman , Catherine Sherwood-Laughlin, Jon Simons, Rebecca Spang, Geoff Sprinkle, Cassidy Sugimoto, Alex Tanford, Herbert Terry, Frances Trix, Justin Vasel, Nona Watt, Sung Un Yang

MEMBERS ABSENT WITH ALTERNATES PRESENT: Edward Vasquez (Linda Gales), James Wimbush (David Daleke)

MEMBERS ABSENT: Marlon Bailey, David Baxter, Michelle Chung, Nathan Ensmenger, Thomas Gieryn, Laura Ginger, Krista Glazewski, Gerhard Glomm, Israel Herrera, Timothy Hoch, Gretchen Horlacher, Laura McCloskey, Michael McRobbie, Sharlene Newman, Deanna Reising, Lauren Robel, Leslie Rutkowski, William Swanson, Mikel Tiller, Michael Wade, Rega Wood

GUESTS: William Brown, Daniel Calarco (OVPIT), Catherine Dyar (Office of the Provost), Jeff Kaden, Bob Kravchuk (BAC Co-Chair), Debbie Lemon (Office of Board of Trustees), Mark McConahay (Registrar), Tom Morrison (Capital Planning and Facilities) Ashleigh Sherman (IDS), Brad Wheeler (VPIT)

Agenda

1. Approval of Minutes

November 18, 2014: http://www.indiana.edu/~bfc/docs/minutes/14-15/11.18.14.pdf
December 2, 2014: http://www.indiana.edu/~bfc/docs/minutes/14-15/12.02.14.pdf

2. Memorial Resolutions for Irvin Millman Grossack and Jan Włodzimierz Jaworowski

Irvin Millman Grossack: http://www.indiana.edu/~bfc/docs/circulars/14-15/B21-2015.pdf
Jan Włodzimierz Jaworowski: http://www.indiana.edu/~bfc/docs/circulars/14-15/B22-2015.pdf

3. Executive Committee Business (10 minutes)
(Faculty President Jim Sherman)

4. Presiding Officer's Report (10 minutes)
(Provost Lauren Robel)

5. Question / Comment Period

6. Proposed UFC Bylaw concerning IUB Co-Chair of the UFC (5 minutes)
(Past-president, Herb Terry) [ACTION ITEM]
http://www.indiana.edu/~bfc/docs/circulars/14-15/B23-2015.pdf

7. Update on eTexts and Report on the Unizin Initiative (30 minutes)
(Prof. Brad Wheeler, Vice President for Information Technology and CIO) [DISCUSSION]

8. INPIRG Report on Open Textbooks (15 minutes)
(Matthew Gough, Indiana Public Interest Research Group) [DISCUSSION]

9. Energy Initiatives at Indiana University (25 minutes)
(Tom Morrison, Vice President for Capital Planning and Facilities and Jeff Kaden, Director of Engineering) [DISCUSSION]

Minutes

AGENDA ITEM 1: APPROVAL OF THE MINUTES

SHERMAN: Okay, let's begin the meeting. Lauren is off on a meeting in Washington D.C. so… First item on the agenda is the approval of minutes from November 18th and December 2nd, so before we vote on approval Lauren and I received a comment from David Fisher about the minutes and what they included and what they – what he felt they ought to include. So I – I'd like to have a short discussion of – of that issue before we vote on the minutes for this. David, do you want to talk about what you said?

FISHER: Sure. The – the – the – the comment I sent to – to Jim and Lauren this morning is essentially about the fact that before the November 18th meeting – I don't know if people remember [comment indistinct]. This was the meeting in which we voted on the resolution on Academic Freedom, and prior to that meeting there was a slew of e-mails sent to the entire BFC starting with one by Steve, followed up by one by Ben Robinson, and then I think several others that I never had time to read because they arrived as the day went on, and there were many of them concerning the issue that would be debated in Council that day. And I want to say that one of the things that I value about this body that I think we do a tremendously good job of is that we are very transparent. You know, not everybody on the planet posts literal, verbatim minutes the way we do. I think this is a great thing about this body and I think if we carried the

debate [comment indistinct] the internet the way we have without thinking about its limitations we risk losing some of that transparency. And I do think that we've lost some of that transparency here, and that I do think the debate about that resolution was very much affected by what was said in e-mail. And I have had some back and forth with this today with both Jim and Lauren, where Jim said something that I do sympathize with, which is just that we shouldn't move the debate to e-mail. If we could legislate that I would be heartily in favor. Steve and I have had a conversation about that where we disagreed, and I do understand he has some point that – that – that there is room for more thoughtful, protracted discussion in e-mail than there is in this room. But I do really think that we really are at risk of losing something by not keeping the conversation as transparent as possible. Lauren injected in e-mail today saying that, you know, asking people after the fact to have their e-mails officially in the record was, you know, just not entirely fair. My proposed solution for today, and for the e-mails in questions about the debate in question is that I'd like to ask that everyone who sent one of those e-mails to the entire Faculty Council concerning that resolution consider making their e-mail public perhaps as some kind of appendix to the minutes. And I would like us to think for the future about how best to allow debate to be extended to the e-mail medium. Lauren made some very good points about there needs to be time for informal discussion among members for us to function as a body, with which I agree. I don't think e-mails sent to the entire body are ever really informal discussion. I don't think that that e-mail exchange was an informal exchange. I think in fact, Steve, that justification about [comment indistinct] was a very formal, very thoughtful exchange. And so I'd like us to consider the solution for this particular event of people voluntarily adding their e-mails to the minutes and that being part of the official record of that meeting, and I'd like us to consider going forward in some kind of extension of our formal rules of discussion and debate and transparency applied to any debate that takes place in this body.

SHERMAN: Okay, thanks, Dave. I – I think there are two different questions that – that you raise. One has to do with what the formal minutes should look like, and – and the second is – what is or what should be the role of extra-public meeting communications of debate. With regard to the first, what – what are minutes and what makes up minutes, I – I think, Steve sent an e-mail from his position as parliamentarian about what minutes include in a public meeting and what they should include and – and why don't you talk about – about that for – for the minutes that go out to the entire faculty and to the public?

SANDERS: Sure. Jim made me aware of the concern so just, you know, although I realize I was a participant in what Dave was talking about. I mean just speaking as your parliamentarian and trying to give some sort of a legal understanding. Can, you know, can communications electronic or otherwise outside of the meeting be reasonably considered to be minutes of the meeting? In my opinion, no. Our bylaws refer to, "minutes of the proceedings and actions of

the Council and to the minutes of meetings." And, for what it's worth, the Oxford English Dictionary defines minutes as, "the record of the proceedings at a meeting of an assembly of any meeting of an assembly, society, committee, et cetera…" In short, my conclusion would be communications outside of a meeting are not part of minutes and so I – I don't think it'd be reasonable to say these were – these were part of the minutes of the meetings so they should be included. If a motion is made, if a recommendation is made, that the Executive Committee study the possibility of including these sorts of e-mails, obviously that would be appropriate and proper. And to figure out what e-mails it included, how would we know, and so forth – my – my point is simply under what I think would be a reasonable understanding of "minutes" would not include outside discussions in the hallway, e-mails, even e-mails sent to the entire body. Again, that's not – whether the idea is good or bad – that's simply what I – what I would understand minutes to be.

SHERMAN: So, I think that's the – the current situation that we are in. We would be glad to take this up at the next Executive Committee meeting and perhaps come forward with – with a suggestion. Yeah, Alex?

TANFORD: Can I make one suggestion and it's a compromise in this, which is if you think of the quintessential set of minutes as the Congressional Record, it reflects both what people have actually said on the floor and if they have brought a document with them and ask that it be included then – then – then it could be debated if anybody wanted to or objected to. So the most simple solution would have been if somebody thought it significant enough that they have brought the electronic e-mails or even physical copies of the e-mails, say I would like these to be a part of our record of the discussion. I'm not sure if that would be satisfactory or [comment indistinct]

SHERMAN: [comment indistinct] I think that sounds –

TANFORD: – might be if the Executive Committee is going to think about it, that way –

SHERMAN: That sounds reasonable. I – I don't want this discussion to go on and on. It's not on the agenda and we have a full agenda, but I will say with regard to the second part of the issue I really am not as extreme as I – I think David may have indicated. I'm not opposed to these outside-of-meeting e-mails or discussions, but there has to be some sort of limit on what was added. David's memory and mine is the same. A "slew" is what I felt. I couldn't keep up with them, and I felt it was really getting out of hand, so I suggested let's – let's do this at the meeting. So I – I think there's a place for it, but I don't think we can get carried away with it and conduct our business entirely through e-mail. So we'll bring this up at the next Executive Committee meeting and – and – and come back to you. For now, can we vote on the approval of the meeting of these – the minutes of these two meetings?

UNKNOWN MALE SPEAKER: So moved.

SHERMAN: All in favor? [Aye] Opposed? [Silence] Okay, then let's move on. Tom Gieryn is also not with us today, but Claude has kindly offered to read the memorial resolutions.

AGENDA ITEM 2: MEMORIAL RESOLUTIONS FOR IRVIN MILLMAN GROSSACK AND JAN WLODZIMIERZ JAWOROWSKI

CLEGG: Okay. Good afternoon everyone. We have two of the memorial resolutions. I'll read them in alphabetical order and I think that afterwards the tradition is to have a moment of silence.

Professor Irvin Grossack was born in 1927 in the city of New York. After completing his secondary education at the Bronx High School of Science, he entered the City University of New York where he received a bachelors degree in economics in 1952. After graduation, he worked as a research assistant at the National Bureau of Economic Research in New York City (1954), as an Economic Statistician at the Bureau of the Census in Suitland, Maryland (1955-59) and as a Senior Economist at C.E.I.R., Inc. in Arlington, Virginia (1959-62). He completed his PhD in economics at Columbia University in 1962, and in the same year he moved with his young family to Bloomington, Indiana to join the Department of Business Economics and Public Policy at the Indiana University School of Business, where he taught until his retirement. On a leave of absence from IU, he spent three years (1966-68) in New Delhi, India as a Program Economist for the US-AID Mission (1966-68).

Professor Grossack's research centered in microeconomics and the history of economic thought. His best work was on industrial organization. Here is a selected sample of his most significant writing. In the "The Concept and Measurement of Permanent Industrial Organization" (*Journal of Political Economy*, 1972, 80:745-760), Grossack argues that the monopoly power of large firms should be judged by their ability to stop smaller firms from entering the market rather than by static and backward-looking measures of concentration. Dynamic measures of concentration can be decomposed into a permanent and transitory components drawing from a similar concept that Milton Friedman had used to measure one's income. The permanent component of concentration imbeds the power of large firms to inhibit entry and the growth of smaller firms.

In "Duopoly, Defensive Strategies, and the Kinked Demand Curve" (*Southern Economic Journal*, 1966, 32: 406-416), Professor Grossack starts with the premise that the acceptance of the famous duopolist model by French philosopher and mathematician Antoine Augustin Cournot (1801–1877) is on the decline because it is built on the "unrealistic" assumption that each duopolist takes his rival's level of production as given while ignoring the impact that his own

level of production may have on the rival's. When this assumption is relaxed, the modified Cournot model produces a large variety of solutions. For example, a duopolist facing a leader does best in most cases with a defensive strategy that ensures small cost changes while raising the probability of outliving the leader. Leadership has no clear antidote against a defensive strategy except becoming much bigger than the rival.

In "Asset Rentals and a Theory of the Intermediate-Run Cost Function" (*Southern Economic Journal*, 1968, 35: 121-130), Professor Grossack tackles another classic aspect of microeconomics, the difference between the short-run and the long-run production planning horizon. In the former, one or more inputs of the production functions are fixed in supply: for example, a single truck used for transportation. Alternatively, if the firm rents a truck instead of owning it, the short run is defined as the period during which the quantity of truck services cannot be changed. In the long run, instead, all inputs can be changed, meaning that owned trucks or rented trucks can be expanded or contracted in the most flexible manner to suit the firm's objectives subject to the usual constraints. Professor Grossack argues that the cost analysis of the firm could benefit from a third planning horizon, the intermediate run, a period where flexibility of the input quantities is imperfect: that is, inputs are neither totally fixed nor totally flexible. The existence of a rental market for assets permits the intermediate case to break down the law of physical diminishing returns before reaching the long run.

In his later years, Professor Grossack became more interested in bridging the gap between mainstream economists, who use formal modeling with streamlined assumptions, and institutional economists, who emphasize the role of power, elites, exploitation and regulation without much formal rigor. In "Institutional and Mainstream Economics: Choice and Power as the Basis for a Synthesis" (*Journal of Economic Issues*, 1980, 14: 925-936), Professor Grossack and his co-author Professor Samuel M. Loescher provide a flexible framework to incorporate various forms of power – government as well as firm power -- in mainstream economics. Today, mainstream economists have gone a long way in filling the agenda set out by Professor Grossack.

Professor Grossack was a congenial colleague with a strong allegiance to Indiana University. He was an accomplished pianist and an inspired performer of George Gershwin's music. He also enjoyed bridge and *Seinfeld*. He was predeceased by his first wife, Maryann Higbee Grossack; his parents, Mortimer (Murray) and Antoinette (Nettie) Millman Grossack; and a brother, Donald Grossack. He is survived by his wife, Marcella Keating Grossack, of Bloomington, IN; his son, Marshall (Gerda) Grossack of Connecticut; his daughter, Victoria Grossack (Johann Rafelski) of Switzerland; and his daughter, Mara Grossack of Bedford. He leaves behind four grandchildren and eight step-grandchildren.

In 1964, Jan Włodzimierz Jaworowski decided to leave his home in Poland, where he had established himself as a leading mathematician, and to move to the United States. Poland's loss was our gain. After academic visits to Oxford University, the Institute for Advanced Studies at Princeton, Cambridge University, and the University of Chicago, and an appointment as an Associate Professor at Cornell University, Jan selected Bloomington as his permanent academic home. He chose IU over offers that came from research universities across the country. Bloomington continued to be his home for the next forty-eight years, during which time he was a valued colleague and friend to all of us in the mathematical community.

Jan was born in Augustów, Poland, on March 2, 1928, one of ten children. His college studies took place at Warsaw University, and he received his PhD from the Polish Academy of Sciences in 1955, under the direction of one of the pillars of modern mathematics, Karol Borsuk. Except for breaks for sabbatical leaves, Jan lived in Bloomington until his death on April 10, 2013, at the age of eighty-five. From the time of his arrival in Bloomington and until the last days of his life, he was fully active in the department, participating in seminars and giving talks about his latest research. Although we often think of Jan first as a mathematician, he was also a dear friend to many of us. His wife Wanda, whom he married in 1974, his daughter and son-in-law, Eva Jaworowski Martin and David Martin, and his grandchildren, Andrew and Sophie Martin, continue to be welcome members of the wider community of the Mathematics Department.

Jan was a citizen of the world. In addition to his home in Bloomington, he maintained a flat in Warsaw (which he visited several times a year) and often spent summers and winter breaks in Zürich (with easy access to the ski slopes). He was fluent in German and a frequent visitor to Heidelberg. His visiting professorships included stays at Oxford (1957-58), Saarbrücken (1963), Heidelberg (1972, 1975, 1978-79), Auckland (1983, 1987, 1995), the University of Western Australia (1983, 1995), and the University of Munich (1982, 1985-86, 1995, 1997).

Much of Jan's research centered around generalizations of the Borsuk-Ulam theorem, named for his thesis advisor and collaborator. These generalizations are deep and theoretical, but the fundamental result is a favorite in mathematics because of its easily stated and unintuitive consequence. At every point on the Earth, one can measure the temperature and humidity. According the Borsuk-Ulam theorem, there exists at every moment some pair of opposite points on the globe with the same temperature and with the same humidity. Jan's work revealed that this theorem is simply the first case in an array of results, unconstrained by the limitations of a three-dimensional universe. Jan’s contributions in this direction used the techniques of algebraic topology.

Another theme in Jan's work was symmetry. The symmetry of a sphere is the starting point of the mathematical study of symmetry in general. Among Jan's most notable contributions in this study was his proof, announced in the *Bulletin of the American Mathematical Society* in 1972, titled "Extensions of maps in spaces with periodic homeomorphisms," that when one space is contained in another (like the surface of the sphere is contained in three space), symmetries of the smaller space are reflected in the symmetries of their neighborhoods on the larger space. Jan's contributions in this direction used the techniques of geometry topology.

Jan's publication record is impressive, including sixty-four papers written over a span of fifty-seven years. His first paper, in the important journal *Fundamenta Mathematicae*, appeared in 1952, and his last paper appeared in 2009 in the *Journal of Fixed Point Theory and Applications*. Of course, Jan's mathematical contributions were not limited to journal publications. He always gave beautifully polished lectures, in seminars here at IU, but also in invited talks at leading research centers, including in many European countries, in Korea, Taiwan, New Zealand, and Australia. A useful service that Jan provided for his colleagues and students was to return to IU Bloomington and give talks surveying the new results he learned in his travels.

A further contribution of his was as a prolific reviewer. For nearly sixty years he wrote reviews for the *Zentralbatt MATH*, the leading sources for current reviews of mathematics in Europe. He also wrote reviews for *Mathematical Reviews*, published by the American Mathematical Society. In total, he wrote well over 100 mathematical reviews.

As a teacher of mathematics, Jan's work was exemplary. He was known to be especially welcoming to graduate students, twelve of whom completed PhD dissertations under his direction. As in instructor of undergraduates, who knew him as "Dr. J," his clarity and dedication made him an effective teacher at every level, especially in large freshman courses, such as Mathematics M119.

Jan was in ways indefatigable. In 1988 he suffered a serious collision with a car while biking in Bloomington. His injuries threatened to be life changing, yet he was soon back to work in the department, and eventually returned to his favorite sport, skiing, which he kept up until recently. Until the last weeks of his life, Jan continued to be a visible presence in Bloomington, riding his moped about town in his brightly colored coat. Even while in the hospital during his last days, he was sending out apologies for missing a seminar and not being able to participate in departmental events. He will be sorely missed.

Be it resolved that this memorial resolution be presented to a meeting of the Bloomington Faculty Council and that copies be sent to his wife Wanda and to his daughter Eva Jaworowski Martin, both of Bloomington.

AGENDA ITEM 3 AND 5: EXECUTIVE COMMITTEE BUSINESS AND QUESTION/COMMENT PERIOD

SHERMAN: Thank you, Claude. All rise. [All stand in silence] Thank you. [All sit] I will limit my comments today to what we have coming up on the agenda for this semester, and before I forget because there may be many important issues to discuss and it's not clear how long it may take to discuss them, the Executive Committee has decided to – is that the 28th, Craig? April 28th? The Executive Committee has decided to designate April 28th as a possible necessary last meeting. There's nothing scheduled for that day. It's still within the semester. We may not need it, we may, but put it on your calendars as possible. With regard to important issues that are – that are coming up, number one let me remind you that because of requirements of Office of Civil Rights and Department of Education and Title IX the university, as all universities are this year, is updating, rewriting the policies concerning sexual misconduct both for students who are accused and for faculty/staff who are accused. This initiative is being led by Emily Springston and Jenny Kincaid. And I think I've mentioned to you before there is a – a small committee of university-wide faculty who have been collaborating with Jenny and Emily on this. There are two of us from Bloomington, myself and Laura McCloskey. There are two members for – from IUPUI, and there are two members from the regional campuses, and it's been a, I think, a very good and very productive committee. It's – it's – it's been an interesting experience for me. [Electronic noise, comment indistinct] ever remember being in a situation where I am clearly the unique, sole, minority. Everyone else involved in this is a woman and I'm the only man among all the women. I'm sure for you women out there, academic, you've been in such a situation many times in your careers. But I can tell you it feels odd. So, you know, it was just like we do it by videoconferencing and someone on the other end said, you know, would you please identify yourselves so I can know who's speaking except from Jim. We – we can know who you are. Anyway, there's – there's Laura and – and Emily have, I think, been very responsive to suggestions by faculty – have changed the proposal a number of times and I think it's really getting into shape. And let – let me tell you that the "final" proposal, that is the one that is going to come out for – for comment should be ready by the end of this week, and then we had suggested that Emily and Jenny do what – what John Applegate and Michael Rushton did with regard to the strategic plan, and that is do a town hall meeting at each and every campus of IU. So at the end of January, beginning of February, they'll be going from campus to campus to campus. As of right now, you can write this down, if you'll be reminded. Their plan is to be on Bloomington campus February 6th, Friday, from 2-4. We haven't yet

determined the place, but it will be open to faculty, to staff, to students. So there may be quite a big turnout and it'll be a chance to ask questions, make comments, make suggestions. Then between then and February 24th there will be additional time for making suggestions and comments that will be taken into account, but this will go before the University Faculty Council on February 24th. The Office of Civil Rights has given every university a pretty quick deadline and we've already passed that, but they agreed that we could go to the end of February and that's where we'll be. So this isn't an issue that's going to be put off until next semester. Also, after that meeting we will have February 17th to have it as an agenda item for this body, where we can discuss it more, make other suggestions. Jenny and Emily will not be here then because they will be traveling around no doubt. So that will be on the agenda on the February 17th meeting.

Other important issues that are coming up: online – online questionnaire evaluation for classes will be on the agenda soon, post-tenure review, shared governance, the replacement for faculty annual reports, a discussion of Academic Analytics, and – and a discussion led, I suspect by Pete Goldsmith, on the Greek system at IU. What's it doing? Are we subject to some of the issues that have come up with the Greek systems on other – on other campuses and exactly where our – so those are some of the issues that will be coming up this semester. If Lauren were here she would present a report, but she's not here so she won't. I – other than David's comment in e-mail – I received no others, nor did Lauren. So unless there are items to bring up we'll move on to the first item, and I hope it will be a quick one. Herb Terry will talk about a proposed UFC bylaw involving who would serve as Co-Chair, one of the three Co-Chairs noe..

AGENDA ITEM 6: PROPOSED UFC BYLAW CONCERNING IUB CO-CHAIR OF THE UFC

TERRY: Thanks, Jim. I'm going to sit here. If you can't hear me please waive your hand or yell at me. As Jim said, I hope this can be quick. I call your attention to circular B23-2015, which is at your desks. The faculty of Indiana University approved the two constitutional amendments that we set out to them last semester. As a result of that faculty vote the UFC now has three – as its faculty leaders – three Co-Chairs rather than two Co-Secretaries. And the three Co-Chairs are to be designated by bylaws in the UFC. The constitution says that one of them shall come from Bloomington, one shall come from IUPUI, and one shall come representing the regional campuses. Well, when we put that constitutional amendment together we deliberately left the specifics of that for the bylaws. The reason for that is that it takes a vote of the entire faculty to change the constitution, but it only takes the vote of the UFC to change the bylaws, and that gives us flexibility for changing how these Co-Chairs are selected. That means that the IFC, the Indianapolis Faculty Council, the Bloomington Faculty Council, and the regional faculty leaders must recommend bylaws to the UFC governing how the Co-Chairs are selected.

The third paragraph of circular B23-2015 I think accomplishes that for us. It basically continues our current recent traditions which were not entirely in – in accord with the constitution of the UFC, namely what we would ask the UFC to do if we got this last paragraph is designate by bylaw that the president of the Bloomington Faculty Council is the Co-Chair of the UFC representing the Bloomington campus. Another advantage to this is should the Shared Governance Committee recommend a change in the name of this body, getting rid of the BFC, naming it something else. Should it say that the BFC's head should be a dictator rather than a president or something like that – all we would have to do is change the UFC bylaws to accomplish that. If we vote on this now the IFC has, I think, already voted or is voting today. The regional campuses are meeting. The goal would be to pull all the bylaw amendments together and add them to the UFC agenda February 24th, and if that's done then this whole thing would go into effect immediately and then the Council would have its three Co-Chairs, including the representative from the BFC. So I ask for your approval for those of us representing Bloomington at the UFC to take this proposed language to the UFC meeting for adoption as a UFC bylaw.

SHERMAN: Okay – are you putting it forward –

TERRY: Yes.

SHERMAN: – as a motion? Second?

UNIDENTIFIED MALE SPEAKER: Second.

SHERMAN: All in favor?

TERRY: Quick discussion?

SHERMAN: Discussion?

TERRY: Okay.

SPANG: Is that discussion?

SHERMAN: No.

TERRY: [comment indistinct]

SHERMAN: All in favor? Opposed? Okay. [motion is carried unanimously]

TERRY: Thank you.

AGENDA ITEM 7: UPDATE ON eTEXTS AND REPORT ON THE UNIZIN INITIATIVE

SHERMAN: Okay, the next item on the agenda is Ben Wheeler, the Vice President of Information Technology and he is going to talk about eTexts and Unizin initiative.

WHEELER: We're good. Thank you everyone. It's a pleasure to be here. It feels very – almost like home giving – teaching MBA's in this room many times in the past. Given the breadth of topics that we want to cover with eTexts as well as Unizin, I'm going to pre – speak from prepared remarks just to manage time a little bit. And I think we should have time for a conversation with – for each topic. So again, thank you for the opportunity to engage with the BFC. We'll start with the eTexts first and then head into Unizin. I think it's important as we get started to get clarity about what I mean by the term "eTexts." It's a really, really, really unfortunate term for the industry applied to digital, okay? So when we say "eTexts" we really are referring to any course material in digital form. It could be a digital version of a paper textbook. It could be a video, a simulation, adaptive tutoring exercise with online homework. It could be labs. So we mean all of that inclusive with the term "eTexts." A second thing to note is when we say the "IU eText program," that's not the same as just any eText offering out there because we've negotiated some terms that are favorable on pricing and such, and we'll share those in – in a moment as well. When we say "eTexts" we do mean all things digital, and that is inclusive of open educational resources, or open access textbooks, and we'll hear more about that from Matt Gough in just a moment. As you know, people are working on improving the cost of education. The price of $0 for open access is a really, really good price and a good deal. So a little history to make sure everyone knows where we are at in this.

IU moved earlier than any other large university in our work to reshape what I think everyone here understands as a very broken textbook market and textbook industry. Our first initiative was to mobilize pilot projects in 2009 per action item number 57 in the IU Strategic Plan, and after two years of pilots, by the end of 2011 we formally had our eText model ready to roll out. So for classes that began in January '12 it was available for use by anyone. Our approach at the time was simple and entirely consistent with our values. So the key thesis is digital should cost less, but at the time it was trending to cost students more, not less, than paper textbooks. So we began with four goals and these were presented to BFC in 2009 and I'll – I'll repeat them here. Goal number one, drive down the costs of materials for students. Number two, it needs to be access to the high quality materials that faculty want to use, whether they're from publishers or their own course packs or wherever they may come from. Number three, enable some new tools that may be valuable in teaching and learning, being able to interact with students around a particular paragraph in a book or enable study groups' annotations. And number four, we weren't looking at just flash in the pan news releases, we wanted something that would really endure physically or structurally change the industry and pricing in ways that would work for students, for faculty, for authors and others. So we implemented the IU eText model as an add-on option for faculty prerogative. It doesn't substitute for anything you've

done, any way you've wanted to work in the past, want to work in the future. It's an add-on option. We dispensed with the debate about print or digital – which is good or which is bad – because we really embraced both. All of our eText agreements have unlimited printing available with them and not [comment indistinct] as you see with some other options. We enabled the use of no cost open educational resources, where they're the material of choice – and we've enabled links into the library systems so that if you want to assign an article from *The Economist* or somewhere you didn't have to pay a royalty for it to put it in a course packet. The library has already licensed that to make it easy to just connect straight through from Oncourse or Canvas. And we have automated much of this now. So with support of BFC and the faculty councils across all of the IU campuses we've really made a lot of progress in the five year journey. And if my memory's correct, I think this is the fourth time I've been back to update you on eText.

Since 2009 – just to be clear of what all has happened – we've incrementally studied the net cost of book ownership, talked to students and the instructors, tried new things, gained experiences – empirically measured, developed policy, launched the Office of Scholarly Publishing, and used the substantial size and girth of IU to negotiate better deals with the publishers. And I can honestly tell you IU is without peer in the breadth and depth of materials that we have license agreements with across a number of publishers at privileged prices relative to anyone the size of IU.

So the handout that you should've just received has two sides. The crimson side is the whole of the university, all campuses. The blue side is for IU Bloomington. It shows current Spring of '15 numbers as well as a little historical trend for each of the – the categories. We've also learned faculty motivations for adoption of digital are not just about economics. These include – one of the things that the faculty like the most that go this direction is they know that day one when they walk into class every student has the digital book. Day one. They've had it because they have logged into Oncourse or Canvas and it's just there. The ability to share highlights and annotation in the books, so for example, the book has an error in problem set thirteen, you can just go into the book and say there's an error in problem set thirteen, change it, and you've just changed every student's digital textbook. So they – they see that. Enabling study groups to work together. Being able to project parts of the book digitally during class or being able to search the whole text to find something you're looking for. So that's our history and now looking ahead and getting to really the main point that I want to make today, relative to BFC.

Absent a very deliberate intervention in the path to digital course materials – what we've been calling "eTexts" – the economics of the industry will drive IU students to pay more, endure ridiculous use terms and limitations, and make our work of educating [comment indistint] more complex. Now, to give a little illustration of that. Since 1978 [comment indistinct] was

published recently – since 1978, the price of textbooks has increased 812%. The price of healthcare, reviled as it is, is only 575%. [Laughter] Inflation is 250%. So textbooks have increased at a one and a half times the rate as healthcare over that time. So we know that that's clearly a – a problem. This is also happening at a time when many industries, as they move to digital, prices have often come down and convenience has gone up. But for the textbook industry the trend and the strategy of many of the major textbook publishers is precisely the opposite. They're looking for how to use digital as a means of lock-in to be able to jack prices of a fairly monopolistic good. Now, we can tilt at windmills but reviling them is really ineffective. It may make us feel good about this or that. And we've gone through that with the journal publishers and such, too, but it's not going to have any effect. If we're really going to have any effect, our opportunities are open educational resources and using IU's scale to negotiate very good prices for digital just like we've done with the Microsoft agreement over many years, the Adobe agreement, other software that you guys and your students regularly use. So if that's the real options we have forward to try to reduce the cost of attendance for IU students – and of course the cost of educational materials. I think the question for this body and for the faculty now is when is it our job to counter those forces on behalf – behalf of IU students who otherwise have near zero negotiating power in the emerging direct consumer digital market? I think that we have an opportunity to give them good quality, things that we want to use in the classroom, that students value and drive down the cost of college education. Now, I want to be really clear the lowest cost for students are not always in digital form or if we negotiated contracts. In some courses there may be activities in the classroom that digital is just not appropriate for. So let me give a few examples. If the assignment is to read Homer's *The Odyssey*, we have the full book in digital form in eleven languages in an IU library at the Hathi trust. Download it. Print it all you want without cost. Where open educational sources are the option, but you may not like the form they are in out there on the web somewhere. They can be brought into our eText program and delivered through Oncourse or Canvas for annotation capabilities. So OER can be brought in. If McGraw-Hill's or Pearson's sophisticated tutoring software and auto-grading lab software is of interest, we've got the deals negotiated for that that are the most favorable prices you're going to find anywhere on that relative to when they offer it directly to students. If the new addition of a book comes out and that's when – this is where the greatest dysfunction in the market is, you know, the 13th edition of a new book complete with different fonts is often the one that you get killed on because there's not an abundance of substitutes. There's not many used books out there yet. If it's in the third or fourth year of an edition the market is pretty full of alternatives that may be out there. So if it's a new edition of a book – here's an example, retail price $160, we've got it for $93 via eText, and we often know that students are even engaging in selling books back before the final exams or studying for the final exam sometimes because they want to get into the book buy back quota before they stop buying certain books back because they've reached their – their

limit. So with the eTexts students have ongoing access to their digital texts as long as they're students at IU. Of course, they have the ability to print otherwise. So there's a range of options out there. And again, for some books the current model is just fine. The part we're driving at though is to encourage our faculty to look at this very carefully. We've now got contracts with the big five publishers and it took a long time to get all of them in. They were very, very reluctant at first. But over 60% of assigned materials by the faculty are now covered by our eText contracts and with eleven publishers and a few more coming in. We also have the Office of Scholarly Publishing housed with the library for all faculty here at IU that want to self-publish books, need editorial assistance, and we will – even with course packs – we've seen in our course packs for the core MBA program it cut cost in half to the students – half, from over $800 to about $400 when we moved into eText program. So I ask the BFC, and the question I think is, how can we encourage our colleagues to fully consider all options that can reduce the course of required course materials? All of the services, the mechanisms, the contracts, the gears are in place, and it is an add-on option, but how do we make more faculty aware of the option and the impact that their choices have to students? So before going to your questions, I'll also share that the single loudest and most recurrent message that we hear from students is frustration that faculty list materials as required for the course when they are never used. Renewed attention to what is listed as required versus recommended or optional I know would be greatly valued for students. Recall that in the end the cost of educational materials for any particular student are really – is really the sum of the individual choices made by his or her instructors. So there is no macro gain that changes it, it really is influencing our colleagues to take a look at what's the best option for the course goals and the opportunities that are available to get those materials. With that I'll pause and take your questions and then we'll preserve a little time to explain Unizin as well.

SHERMAN: Yes?

TERRY: Brad, since I am an emeritus I haven't ordered textbooks in a few years. Do we have in place a mechanism when a faculty member orders something, and does not specify how long the eText version of this, to write back to them say that's available we have a contract with that publisher?

WHEELER: We do not. There's nothing automated that if you turned in, you know, the fifth order of physics or the fifth edition of physics it would like signal back to you – say have you considered – ?

TERRY: Would that be difficult to implement?

WHEELER: It's an interesting idea. We haven't approached it but if we were guided to do so we probably could.

TERRY: Okay. I think it would be helpful. I think we have – we have trouble educating faculty that this system exists at all. I don't think many of them would resist a reminder you don't need a physical copy you can order this eText we have a contract for it.

WHEELER: Yeah, and by and large what we're doing is we're signaling to the students that if it's the fifth edition from McGraw-Hill that's the book, and now if you're really [comment indistinct] to go find it. We really aren't taking that next step. In some ways what we're observing, you know, agency as far as economists consider it, students aren't really free to shop and say I think the Pearson book would be better. You know? We have taken them halfway there but then they're kind of left to the wolves after that for what happens to go track it down and find it. We have students showing up for the second/third week of class, they found a really good deal on the web but the book has never arrived, you know? You can just go through story after story after story that we hear around students. Questions, yes?

PEARL: When students download eTexts are – is there information that's collected from them if we – on the initial download and then on usage? And if so, what is IU doing to protect their private information?

WHEELER: Yeah, so all the eTexts that – first, I mean, you can attach anything digitally to your course that you want but for the things that are informal the eText program – the software to read or annotate whether the book comes from McGraw or Pearson or Wiley or whatever, it goes into Courseload. Courseload is our tool. It gives, you know, you use an iPad or whatever, to read and annotate and such. There are obviously server logs that we know how many times someone logs into Oncourse. We know how many times someone clicked into certain courses. Instructors, if you look at Oncourse or Canvas you can look in and see if your students have logged in or – or not. And some of that kind of data is available as well for eText. The instructor has access to see it and then usually the university policy would apply around – for protection of what can be shared or used in any other way. So it's really very consistent with what we've always long had in Oncourse. Other questions, yes?

BASU: For comparison's sake, can you tell us what would have been the savings if students were to rent the book? Retail price and rental prices are tremendously different.

WHEELER: Yeah, the whole pricing game is very different and, you know, cause and effect is hard to completely establish. But our engagements with the large publishers, we have had an effect in moving the market in pricing. So I can tell you that for sure. So the rental idea came along. Rental, if you think about it, you're paying the depreciation on the book and you're obtaining a guaranteed sellback because you're going to be able to take the book back. But that is also subject to all sorts of terms, how much you mark up the book, what happened to the book over time. So there are many varied experiences, both great and some pretty big

disappointments with rent. But the pricing of it – when you ask about savings there's almost three chapters to every book's life. There's the, you know, typical three-year revision cycle. The economics you can see in year one from buying new and selling it back, doing a rental, or doing it in eText differ from what you would see in year two or what you would see in year three. And the cost of it varies so much because the buyback market starts to go down and the rental market starts to go down in those – those later years. Amazon is participating very, very aggressively right now in ways that have been very helpful when it's put its throw weight in. So it's hard and we have done this, shopping every ISBN number every year, you know, in comparison, and it's getting increasingly difficult to be able to make broad, sweeping generalizations about something one way or another. Just also to that point, on the handout you got I want to make sure there is clarity on that bottom number. The one thing that you absolutely do know is you can do a head to head retail price comparison. So that's the number that you see. It doesn't speak to how many students may have succeeded buying used, may have succeeded in selling back, or didn't sell back, or students who didn't buy anything at all. It's a dynamic marketplace and that's why it's hard to give prescriptive advice to faculty say a new text, because depending on the life of the chapter or the edition of the book you're in, digital might be less expensive, the used book might be less expensive. If it's a big mass book rental might be available. If it's a specialty book rental may not be available.

HASS: Brad, one of the greatest ploys I think publishers have employed in the last few years is they have these online access codes –

WHEELER: Oh…

HASS: Which kills the used book market for most students even though, as you say, the professor would never use those. But students when they go to the bookstore and they buy a $30 copy or a $100 copy with the access code they feel like they're going to need those online materials. How – how do those work with the eTexts that have those materials – may also encourage professors to let their students know they don't need the access code.

WHEELER: Yeah.

HASS: They don't need it.

WHEELER: And it's even more subversive than that. Look – so the access codes are principally designed to kill the used book market. That's the goal of the access codes. To the extent that faculty need anything digital, there's an automatic homework exercise or students actually have to submit something electronically or digital then what it really becomes is a monopolistic good. There's no substitute. There's a used book market. If you buy a used book, you got to go buy the code somewhere along the way. The approaches we've been taking don't require any of that. It's your IU login at IUB that get you all the stuff that you need without having to

play that game. So when you start to see access codes you should just buyer beware right from the beginning.

SUGIMOTO: So a lot of this conversation has been on costs and reducing costs, which is an important concern. But how much attention is this initiative paying to the quality of learning? So many of the studies that have come out recently saying that screen reading actually has a reduction in student learning over the course of the class compared to paper reading. So what sort of attention is being paid to that? What disciplinary differences might come out in this that we should be aware of?

WHEELER: So instructor engagement with eText – the case study of Indiana University eText Initiative will be published by two of our faculty within the month. It's coming out. It's got a lot of depth, most of it perceptual, what students are saying, what faculty are saying about – the thing that we learned most, the overwhelming point about eTexts for students is if the faculty use the eText then students really like it. If they use it to annotate, if they use it to highlight, if they link to things – if they use it as a pedagogical tool – I don't mean anything like really slick. I'm talking about highlighting, you know, and – and pointing students there. Students' perception of the value of it pedagogically goes way up. The other thing that we've heard from students early on and throughout this is printing mattered. They really wanted to be able to get a hard copy to interact with. The data are overwhelming, they don't print. Okay? They got – they – and when I – I talk to students who own iPads and various things and I ask them, 'So how do you read your eTexts?' They go, 'On my MacBook Air or on my laptop.' So what we hear perceptually and what we see behaviorally does often differ a lot. We've also seen a change as people are just, you know, as we get into younger and younger students. It seems younger and younger today – I guess they're always eighteen. Their habits of living and reading digital – they'll read textbooks from their phone, which I don't think I would find that a great pleasure – Dennis?

GROTH: Yeah, so I've been involved with eTexts from the very beginning on the – on the committee. And I have to – I just want to share with the – with the BFC that every semester I get complaints from students and they are along the lines of there's an eText available, I have it, it was cheaper than the paper one, but my faculty member refuses to allow me to use a computer in the classroom. And so I haven't received one yet this semester, but I expect it pretty soon.

WHEELER: It's early.

GROTH: Yeah, it's well, not – students are still scrambling looking for books, but even if it wasn't – so I'd just suggest that faculty be aware that whether they've put an eText out there students may still elect to get an electronic version of it, and I think you have to really think

about whether access to the – to the book – you have to be up front with them why they would need to spend more money for the paper version because you don't want them to use their computer. It's just something that every semester I get these.

WHEELER: And being mindful of time, I probably should go to the next topic. Is there any other question that somebody would like to ask?

MILLER: What is the – what is the mean saving?

WHEELER: I'm sorry?

MILLER: What is the mean saving? Is it following the same trend that you give – give here?

WHEELER: Boy, you know, two years ago I could have given you a pretty solid answer to that. You would see in many cases around $20 a book, $25 a book, but the market is just so volatile. And the publishers, by the way, we worked pretty hard with them to get them to where we want them to be. Many of them – they're making it up as they go. They don't know how they're going to do digital either. But look, the core principle here is if you think about – let's take a book for whatever reason they think is worth $200. That book probably has a six to eight semester life in general. So instead of killing the first person with it and playing a game all the way through, why not price the book at $20 or $25 for each of the users? With, you know, longevity and access to digital, you can do that. That's the core argument we've been trying to make back to them. And then they don't have to worry about piracy. They don't have to worry about students not buying books, all the craziness that goes on afterwards. So we do have faculty across many disciplines – languages, sciences, business, law, health who have used eTexts. If there was a way to somehow – if you can help us figure out how to get faculty to think about the choices they're making in an informed way I think that's really the opportunity for guidance from BFC. And Herb, that's a really good idea that you raised as possibility –

TERRY: As a member of the BFC Executive Committee, I will take it to the Executive Committee and we'll maybe assign it to Educational Policies or something to work with your staff.

WHEELER: And – and while we have made progress as you see in those graphs. Consider that those numbers of sections that you see listed there that would be out of about 10,000 sections.

TERRY: Yeah.

WHEELER: So the impact is – is meaningful but it – it's not stunning at – at this point.

Okay, for our second topic, if I may, some of you have heard about Unizin, some of you have not. So I'll give a brief introduction to this. If you reflect back to 2012 it was the year of "MOOC mania." We saw dramatic events at the University of Virginia. Silicon Valley threw tens of

millions of dollars in startup dotcoms to fix higher education. Flip classrooms became common vocabulary, and students in for fee and for credit courses began illustrating their openness to varied forms of residential, blended, or fully online courses. Many institutions joined various commercial ventures to provide front door access to faculty authored MOOCs, or in some institutions, even outsourced and contracted with firms to have the firm take the course online with a perpetual revenue share of tuition into the future. So in 2012 IU choose to be very deliberate in our approach around digital education and we did not leap into some of those trends that were going on in those early years. We sought a strategic approach to best enable our faculty, departments, schools, and campuses to engage in varied forms with the growing interest in online education. During the year of assessment IU was very concerned regarding how faculty's and the university's intellectual property might be protected. Who is responsible for the relationship with our students? And what happened to information about our students who were using materials? So a little bit to the questions you asked a moment ago. You know, who owns the data? What are the policy and the privacy rights around interactions with it and does it comply with IU policy? It became very clear that IU's prerogatives and opportunities could best be served in academic institutions rather than for profit companies – here I say that in the Business School, or other commercial vendors control the infrastructure for digital education. We should not watch it go the way of commercial ownership of many of our academic journals or PeopleSoft, or other things that continue to take a lot of our money. So with considerable support and the persuasive engagement of Provost Robel, Unizin was formed in June 2014 by IU, the University of Michigan, the University of Florida, and Colorado State University. By the end of 2014 we've now been joined by the University of Wisconsin, the Ohio State University, University of Iowa, University of Minnesota, Penn State University, and Oregon State University. So over half of the Big 10 have now come in with us in this endeavor. Our goals, enable faculty and university innovation on a common digital platform for dealing with course content, learning management systems like Canvas, and learner analytics on an infrastructure that we can erect from the academy itself and within our values. This is very similar to what was done in the mid 1990's when a few universities created Internet2 saying that we needed to own the network to enable our research to go across it without having to worry about what the AT&T or others may think whether, you know, were their interests. Ownership enables us to preserve our rules for digital education rather than being subservient to someone else's. So we're now in the earliest stages of Unizin. Unizin is a consortium. Universities are members and get educational services from it. It cuts contracts on our behalf with tools and things that we need and integrates them together, and we're in its early stages. If you haven't looked at Unizin and you want to know a little bit more about it, it's – the website is unizin.org. U-N-I-Z-I-N, so it's not zen as in calm, it's more zin as in zinfandel, if you think about it. We have an essay there called, "Why Unizin?" that's a bit of the manifesto for why we think digital education – universities need to be able to steer and control where it's

going to go. So we'll soon have greater capabilities to store our digital work for course materials and manage rights to those materials according to existing university policy and faculty prerogative. In fact, IU faculty will not be signing over our rights to companies in ways that some book providers and others have required. We'll also have easier access to find and use open educational resources from a variety of locations. So I'll have more to share with you about Unizin and its capabilities going into the summer or fall, and as always UITS will provide training as these services become available and I'm happy to take your questions on Unizin as time allows. Yes?

ROBINSON: So one specific idea of Unizin is to host an archive, what's – and the reason why I ask is I'm just curious – on the one hand it's a very nice idea, as you put it, that we have increasing control over the data and the way it's used rather than – than third party vendors. But I do have a concern that it opens the gates to MOOC learning. When somebody asks these questions about eTextbooks, I mean the concern is most of the research shows that MOOCs are very ineffective learning devices. And I know there are some noises in the university strategic plan rather than the campus that we want to really work on building online offerings. So the question is again, is how closely do you see Unizin as related to the process of expanding the role that MOOCs and online education plays?

WHEELER: Yeah, that's why we're really starting to derive the term "digital education," and I think it's really an important label. When you think of online you're often, it's kind of like well, it's residential or there's online, like Kelley Direct is online and a degree program. But when we say "digital education" we really mean to encompass all of the modalities around education. So, for example, many of you have long used Oncourse in your courses or are using Canvas now. That is a form of digital education and support of students who are residential on the Bloomington campus. You may have some courses that are a little bit blended, some part of it's residential, some part of it may be at a distance. Someone's on a summer study abroad program, but they're still taking a course in – in some way. Some of it may be fully at a distance. Some part of it to more variance could be – some of you have really great modules that we could take to IU alumni that won't be credit bearing, but they might be small revenue bearing courses or there may be MOOCs. So MOOCs in – in our view are just one small end of the tail that may be very useful in some segments. Katy Borner has taught a great MOOC in data visualization. Geoffrey Fox in School of Informatics and Computing, a number of his colleagues has assembled a group. So it's one of those tools but MOOCs are a very, very small part of what you're thinking about with digital education. Principally it's the tools to enable a lot of what we're offering.

MACY: [Comment Indistinct] But I just want to know more details about [comment indistinct] to control it? What's the mechanism on campus within the university for deciding how this is going to work? What it's going to offer? Stuff like that.

WHEELER: Yeah. So Unizin's legal construction is it is organized under Internet2 which Internet2 is a 501(c)(3) with university [comment indistinct]. It's a big network. So rather than create a whole other legal entity we've just tucked it under a corner there. The governance of it is around the Unizin members. So I listed our ten members and we're putting money in and that gives us a voice and rights for what should happen next. Then a whole set of advisory committees around services to be built and turned on. We just got – Unizin is going to be headquartered in Austin because the labor market is pretty good there for hiring some help that is needed, and you'll see past courses and study groups come along – how do we want to manage rights around content? How do we want to consider being able to do research things around what are our analytics. It will be compliant with university policy. Now, we're going to have some fun in reconciling our view of policy about something from Minnesota's and Iowa's and with Ohio State's so that's where some of the work is in the future. And it's just out of the box right now.

MACY: So more specifically, like is there going to be a campus committee for digital learning? Digital education? I mean, I'm kind of asking, you know, are we as faculty are going to be involved in what this looks like, how it develops?

WHEELER: Very much so. I think the opportunity will be as fast as the demand is for it. So what type of mechanisms for engagement there will really be the key to it.

TERRY: Or will go to a higher level of – I presume it's Indiana University, not Bloomington, that's the member of Unizin?

WHEELER: That is correct.

TERRY: So I assume you, as the system officer, are the primary liaison or someone you have designated.

WHEELER: Correct. I'm the voting member for Unizin right now, as we've just gotten it out of the box. And some of you know Professor Stacy Morrone, a professor in the School of Education also runs teaching and learning IT and the Center for Teaching and Learning, and she is also on the board. Other questions?

ROBINSON: How about some specific information? I mean one thing I was concerned about with MOOCs, a lot of the contracts they were signing they were getting out of. We don't have to sign them anymore but were for – that wasn't necessarily activated but you see in the

contract was around ownership and sale of grades essentially as – so, maybe this is somewhat in line with John's question. I mean, it seems like a campus committee or – or as Herb pointed out it has to be at larger level, but it seems like we do have a pressing concern on even as we switch to IU control of it that that we want to be – that we are concerned or should be concerned with how that information then gets used. Like just to take that example of grades, it would be disturbing to me if we tried a similar marketing strategy that Coursera, say, was trying and we tried to sell grades into third party head hunter companies or something like that. Now that might be a strategy and we might want to do it, but it would be very important to me to have some sort of –

WHEELER: Absolutely, you're spot on. This is what we're avoiding.

ROBINSON: Okay.

WHEELER: Coursera is – has – I don't know what the latest number is roughly $80 million of venture capital in it which is not benevolence. You know, it wants payback. And then so it can be used to adapt its agreements with universities to get more and more restrictive and grants more rights to Coursera to do things because it's a business and that's what – what it does. And that's why the provost bought into us being able to control what the rules are around that, and to first order, they would be compliant with IU policy. You wouldn't do something there that wasn't consistent with policy we already have on the books. But what if we have a faculty member who comes and says I want to do a research study around learner analytics and, you know, I want to understand what cause and effect is with students who work in certain ways. Well, that would go through IRB and then does it pass, you know, our further rules and et cetera… It would proceed that way. But to John's point and yours, we're in a frontier here. But we're in a frontier where we can shape very much what happens. The first thing you – for those of you who've already switched over to Canvas, you're already using a Unizin service. So we licensed Canvas through Unizin with substantially better prices and terms than we would have been able to do had IU gone alone. So that was one of the first areas. The roadmap in general is to get content service up and available by summer and to get the analytic service by Christmas of next year. So I hope I'll be invited back to give more updates on that as it happens. And anyone who has particular interest in this, Dennis is going to be on one of the working committees around analytics already, just e-mail me. Just feel free – bwheeler@iu.edu and e-mail me and we'll see how we can do [comment indistinct]. Again, another thing, if there's information in your college, school, or department, you'd like to know more about it, we'd be happy to arrange, you know, one of our folks to come and sit down for a departmental meeting and help people see what's going on.

SHERMAN: Okay, thank you so much.

WHEELER: Okay, thank you.

AGENDA ITEM 8: INPIRG REPORT ON OPEN TEXTBOOKS

SHERMAN: One of the great mysteries of – of the campus during our winter break at least for me has been the disappearance of INPIRG I don't know where they've gone. I do know that Matt Gough who was the INPIRG representative, we had talked a lot and he was on board to come to this meeting and he hasn't answered e-mail forever. I tried, Craig has tried, we've tried to get in touch with INPIRG, and called their office and gone up there in person. It's gone. But, so I figured let [comment indistinct] – I do know something about the open textbook initiative –

WHEELER: Can I just talk for a couple of comments for things he might say then?

SHERMAN: Yeah. I was going to do that, but I'm sure you're more equipped. Go for it and I'll add to it if I can.

WHEELER: Okay, to short order over the last four years you've seen a tremendous investment by the Hewlett Foundation, the Gates Foundation and a number of other sources, some from the Department of Education, and open access textbooks or open educational resources, OER. It's been out there for quite some time. And IU had some stronger engagement in it about four years ago. But in many ways, the materials were just not there other than a few narrow areas about four years ago. But that has changed a lot because of this massive capital investment from many of the foundations. And you will find there's open access materials often written by notable scholars in your field or groups of people who've worked together that are at a level of maturity that they really bear your consideration. Would they be suitable to use in your courses? They are without fees to students. They are generally organized in such a way that you can extend and annotate them yourself for your own course. As I've said, we have the ability to bring them in digitally into our environment already, and this is one of the primary tools to try and reduce the cost of attendance. Where you see the most OER is in what you would typically think of as first and second year courses because the cost of textbooks are a much higher percent of the cost of attendance for a student at a community college that has a much lower tuition rate than a research intensive university. So particularly first and second year there's pretty good stuff out there. Then the final thing I'll say, and yield the floor back is on the content side of Unizin, that is one of our early goals is – the problem for a lot of faculty if they said I – I'm interested in using open access stuff, where is it? How do I find it? The – the groups who have OER out there are very fragmented. There's not even really a good federated search where you could go look at intro physics across a whole bunch of them. So Unizin wants to make that better so that faculty can more easily discover OER when they're looking for it. But many of you in your own professional associations and academic disciplines there'll be

words bouncing around on listservs saying these open materials are available. So that's what I'll add.

SHERMAN: I – I would simply add to that that the – the Big 10 leader when it comes to open access textbooks is the University of Minnesota, and if you go to their website you'll see that there are quite a few open access textbooks that when I look I didn't realize there are a couple in psychology with very good, well known authors. And the University of Minnesota has recently allocated a bunch of money for them to travel to all the CIC schools and have workshops to educate us all on open access texts, what's available, how we could use them, how we might want to write textbooks that could be used. So I – I think Brad is right. Now that there's been some financial support for this it's – it's a lot cheaper than even eTexts. As you – as he said they're cheap, sometimes they cost $20. I mean, compared to what you would pay for used text or renting or even for eText it's minimal cost, so it's something to look forward to.

Okay, the last set of items on the agenda have to with issues of energy conservation and sustainability, and I had the idea for doing this at the last Trustees' meeting where Tom Morrison and – and Brooke Peyton gave a presentation to the Trustees and how to give a presentation involved the energy initiatives at IU. And I thought even independent of the fact that it's a topic that we should know more about was the fact that y'all ought to know who Tom Morrison is and who Jeff Kaden – who knew we had a Director of Engineering at IU? This is the first time I – a well-kept secret but Tom I've known for a number of years. He's the Vice President for Capital Planning and Facilities. All the buildings, all the sidewalks, all the stops, steam pipes break, you know, whatever is up, this is Tom. I wish you all could come to a Trustees' meeting when Tom presents the capital projects that have recently been completed or are in line, or will be completed soon. It's – it's amazing to me because you realize how, I don't know the right word – ethical? Eye on the cost? The expenditures won't go into a project unless he knows it's going to be done right and he has assurances about how it will be done and when it will be finished. And I would invite you all the next time the Trustees meet here come to his presentation. You'll – you'll – you'll be proud of the way we do our capital projects at IU. So with that, you've a lot to live up to, make it good.

AGENDA ITEM 9: ENERGY INITIATIVES AT INDIANA UNIVERSITY

MORRISON: Jim, thank you very much. I don't know what – where to go with that other than to say thank you, but... Thank you so much it's our pleasure to be here with our team. As Jim said, this is, again, a presentation that after that introduction we're going to show you lots of graphs, and bar charts, and talk about utilities and engineering and – and I – we should never do that right before dinner so I – I apologize in advance. But our team is – is excellent. Jeff Kaden who is with us today has been at IU for a long time. How many years, Jeff?

KADEN: Twenty-six.

MORRISON: Twenty-six years, and he's been university engineer and so a lot of what Jeff worries about every day is the – are the things that you can't see. But when the buildings – when the lights go on, and the heat works, and the air conditioning works, and all those things that we – and buildings stay standing, we give Jeff credit for that. We also give criticism when it fails but – but Jeff is a great, great colleague, and one of the things that we have just done is name Jeff the University Director of Energy and Utilities because we – we've looked at the important topic of energy and utilities and realized across the spectrum of all IU campuses we did not have a unified approach. And this is a business that requires that. It requires us to have a unified approach to – to how we save energy, but also how we purchase it, how we deliver it. And also in tandem, Bill Brown, who many of you know is IU Bloomington's Director of Sustainability, we have just named Bill University Director of Sustainability and so he will have responsibility for all the IU campuses. He has done a phenomenal job as you know here at Bloomington and so we want to take that effort system wide, and so it doesn't mean we will expect any less of him here, but we think that it's going to make IU even better.

So what Jeff is going to share with you today is an energy presentation that we did for the Board of Trustees in December. It's exactly the same presentation, I think, and to talk about – we think is a – is a good story and a strategic story that builds out of the energy master plan that we completed a couple of years ago and this was the presentation that every year we're committed to doing an energy presentation for the Trustees and this is that presentation. So with that, Jeff, I'll have you do the presentation and I'll add in as we go.

KADEN: Thank you. I'm not sure where to stand for this, but I can barely hear. This is good. Is this okay?

SHERMAN: Yeah.

KADEN: Thank you. I'm Jeff Kaden, University – former University Engineer and now Director of Energy Management and Facilities. I appreciate the opportunity to tell what we think is a pretty good story. I'm going to spend a little bit of time talking about qualified energy savings, this is a legislative process that the state allowed us to do about ten, fifteen years ago. Some of the strategies for energy monitoring that we're doing on the Bloomington campus, something that we're hoping to transmit to the regional campuses as we move along. I'll talk about how we're building buildings. We have developed some standards over the last ten or fifteen years that in many ways have led the resurgence of our high performance buildings. We've got a lot of LEED buildings. We can talk about LEED. And finally, what we're doing for the future.

In the late – in the mid '90s the state allowed universities to enter into agreements with qualified vendors to go through our buildings, designated buildings, identify opportunities for

projects that could save energy, and then we would borrow the money and pay that loan back with the money that we saved from the energy that we saved. So we've done that at five campuses now starting in 2003 at the Northwest campus and as recently as a couple years ago at IUPUI. The legislation changed so that we can do bigger projects now. So we can do up to $15 million per campus. The original legislation was $10 million per institution, so it limited us to working on the small campuses first. But now we can do some bigger jobs and we've been very successful both at South Bend, at IUPUI doing some fairly major projects which include things like these. They're fairly straightforward in many ways. Lighting modifications has always been the low hanging fruit, but making changes to heating and cooling systems. One of the unique things up here at the Southeast campus was we put misers on vending machines so they don't cool Cokes at night, which is kind of an obvious thing but it saved a bunch of money. We did put some solar voltaic panels on a project up at IUPUI. So we've got a number of things, for some very unique, some very obvious.

The Bloomington campus, we have been very lucky in funding a number of major steam and condensation return projects using R&R money, the student funded R&R money as well as energy savings that we generate year to year. We share some of that energy savings with the campus, the rest of it comes back to us. We get to produce projects that Vice President Morrison will approve, hopefully. But we've done a bunch of projects that have saved about $1.7 million dollars a year. Condensate is the liquid that comes back to the central heating plant and when we take the steam energy and use it in the building. That condensate has incredible value. We don't like to lose it. When I started they were only returning about 20% of that back to the campus to the chiller – to the central heating plant. Now it's close to 85%, and that's about as good as Purdue and all of their condensate is in tunnels that's fully accessible. Many of ours are direct buried, so it's much more expensive for us to – to work on those projects. So we've been very successful at returning it, so... We have a number of teams who are working on power savings. We're going through up to thirty-three buildings now at this point with a ten month payback and some rebates from Duke. So we've used a number of different alternative funding options to help us perform some of this work. Our water reductions have caused the City of Bloomington to question whether we're in fact stealing water. But in fact, we're stopping leaks. We're putting in low flow fixtures. All of our new buildings are meeting the LEED requirements for significant water reduction so that's a real number. And finally, chilled water has been significantly upgraded through the work that we've done with developing satellite chilled water plants. The residence hall folks have funded three plants with our assistance at North Woodlawn, Forest, and the Ashton – or the Union Street plant. We also put a large plant at the Musical Arts Center, and so these new plants have really done a great job. Switching back to steam here, and those of you who don't know the purple is, in fact, our steam distribution we go all the way east to the University School all the way north to the tennis pavilion, and those highlighted areas are areas that we are going to be looking at

to in fact remove them from the steam system. Those long legs of steam are very expensive to repair and replace. So we're thinking that there are some satellite opportunities here for gas fired, localized, distributed heating system, gas fired here for some future opportunities. We currently have a study that's about to be delivered to us at the Collins Center over here at 10th and Woodlawn and finally the tennis center. This is a very long and expensive piece of utility. So we're looking at opportunities that we can switch to natural gas, get off the steam system.

This is the chilled water storage I started to talk about. We are now producing more chilled water. We're cooling more buildings during hotter weather for less money. It's – it's an incredible story that I wouldn't have believed if I didn't see the numbers. But we put in seven new chillers recently and their cost to produce a ton of cooling is significantly lower than the machines that we put in ten and fifteen years ago. So it's a great story, and we rarely have what I used to call cooling reallocation program. The acronym is what you can figure out there. But we had to implement that. You had to have some time in your buildings where we actually shut off the chilled water. Hopefully, you did not notice that, but we had to. So we don't have to do that anymore. We're very lucky.

This is the slide that shows the satellite plants up here at North Woodlawn, central plant's on 13th street, the Musical Arts Center we put a very large machine and tied it back to the loop here. This was the most efficient machine that we've got in the system. And then over at Forest. The Union Street plant serves the brand new buildings. It's the corner of 10th and Union and someday there will be a link that will bring that back to the loop, too. So we've got a very robust, very flexible system that allows us to produce all the cooling we need at this time.

This is why we're doing what we're doing. The rates are escalating from January '04 to June of '14 with very little opportunity for reduction. So we're – we take a look at this on daily basis. We watch our peak. We have opportunities to reduce electrical consumption without you noticing it. There are some very transparent projects that we can do on a – on an immediate basis. Yeah?

MORRISON: Explain "peak," because that's very important.

KADEN: Peak is – peak demand is measured in kilowatts. We have historically the maximum amount of electricity we ever used in any one fifteen minute period is about forty-three megawatts. Lately we're down to thirty-five, thirty-six. So, Duke has to have enough facilities to generate forty-three megawatts of power that we could use in any fifteen minute period of any time of the year and we get charged, I think, $19,000 a megawatt for that peak, and our peak consumption is in fact more than half of our bill which is now about $1.5 - $1.8 million a month. So anytime we can reduce that peak we can reduce, not just consumption, but we can reduce big dollar amount, too. So we watch peak, we also watch the consumption. The energy

is in fact the kilowatt hours that we use over time, but Duke has to have all the plants sized to produce a peak that – assuming everybody would hit that at the same time. And it's a – it's a challenge for Duke and us to figure out how to do that.

MORRISON: So that is why many of you get e-mails during winter months when it's going to be an impressive day asking for you to turn off your computers, turn off lights, [comment indistinct] because it helps to shave the peak. We know it's going to be a very difficult day, and we're probably going to hit our peak. If we can shave other things it really saves us a lot of money. So if you get those e-mails and you wonder why they come out, that's why.

KADEN: Yes. This is a rather complicated slide, but again, it talks about the peak. The red line on the top graph is five years ago, and the green line is last year. The units obviously are very close together but we're – we're reducing our peak. That's the story that this slide is supposed to tell. We're also reducing our peak per thousand gross square foot and our annual kilowatt hour, which is the consumption of energy per gross square foot, is going down. So these are good numbers. Prices going up, our consumption is going down. And as we do build new buildings that are more efficient that trend will continue.

IU is a member of a Sightlines group. Sightlines is a subscription service that benchmarks physical plants on all of the things they do – custodial services, grounds care, utilities, customer service, and in the energy arena we are 16% below the average of a number of schools. We don't know who B through H are, but we know that they are similar to Indiana University in size, location, geography, and type of school – research, residential communities. So we're doing pretty good compared to our peers. This is a terrific representation of energy consumption in a week in January of 2013 built by a student. This is an Excel spreadsheet that identifies based upon energy consumption in every one hour period of the week. So dark blue is lower energy consumption that you would expect to see on Sunday and red is the higher energy consumption that you would expect to see in the middle of the week, middle of the day. And this is a holiday. In fact, it was two years ago yesterday. So this is a very clever way of pictorially demonstrating where we need to address our peak energy consumption. Now what – what's interesting about this student who did this is that he also did a heat map for a residence hall and all the red is over here and all the blue is down here. So when you look for peak reduction and when Duke tells you the peak is at 3 o'clock in the afternoon, the residence halls aren't the problem. It's something else. So that's what we need to concentrate on. But this was a very clever way to demonstrate that.

We've had several teams of physical plant workers going through some buildings. And I'm sure some of your buildings have been affected by this, where we've taken and tried to restore them to like new condition by cleaning things, oiling things, greasing things, changing filters, making sure thermostats work. It's very simple, took a long time, but it's resulted in some dramatic

savings. More than 15% of the steam and 16% of the power savings, multiple buildings that we've addressed now, and it's nothing more than the kind of routine maintenance that – that we're good at. So hopefully you benefitted from improved opportunities for teaching and learning. We are now aggressively in the middle and nearing the end of a metering program where we can take all of our energy and utility meters' readings every fifteen minutes throughout the day and so someday we will hope to demonstrate that to you and you'll be able to see real time data. What is valuable for us additionally is to get a monthly bill – a monthly meter reading for each building and then identify which buildings are contributing to that peak that we set with Duke so that we can start to recognize which buildings have the most opportunities for us to reduce energy consumption by either fixing building systems or addressing behavior problems. We don't know quite what those are yet. But we see electric and – and water – condensate is where we're measuring the energy from the steam system and gas, so we've got – we're very close to having a fully automated system for meter readings. We hope to duplicate that on the regional campuses. What we're finding is on the regional campuses the utility companies do more of the metering than the internal campus. So we'll be working with utility companies like AES and IPL and Richmond Power and Light for some of that data, but hopefully we'll standardize on the way we can invoice, bill, read, interpret, troubleshoot with a system that is standardized around the system, which is some of the things that I'll be working on in here. I guess there's a danger in [comment indistinct] everybody now know what I'm having to do, but this is a – another – this – a demonstration of the standardization that we hope to have system wide where we have electronic processing of invoices, for example, and the ability to distribute this information to anybody who needs it. I've been a personal advocate that if we can give you information on energy consumption, it may trigger some behavior efforts of things that could drive that graph even further.

When we design buildings we have done quite a bit to establish parameters for everything in the building including the envelopes as well as all the systems. So our architects and engineers when we sit and design these we insist that this is the baseline, and this has resulted in a number of very successful, very high performance buildings on campus, and in fact thirteen of those are currently LEED certified in one platform or another with five more on the horizon. So we lead the Big 10 in the development of LEED projects. LEED is –stands for Leadership in Energy and Environmental – what is it Bill?

BROWN: Leadership in Energy and Environmental Design.

KADEN: That's it.

MORRISON: And let me also share that we are a leader in the Big 10. We're proud of that and – but one of the things, we never want to stand on our laurels, and one of the recommendations in the new strategic plan is that we are existing – we're one of the first institutions that had a

LEED standard, and we have LEED Silver as our case light standard. We're now, upon recommendation of the sustainability taskforce on this campus, we're going to bump that to LEED Gold so that every building that we do will have a baseline of LEED Gold as our goal. And – and we think that – we think that's achievable. In fact, we know it's achievable because when you look at that list you'll see that – you'll see several Gold buildings in there and we know that it – it's – I got to be careful how I say this. It's not that hard to do. It – maybe it was ten years ago, but now people's expectations are different, their behaviors are different, and the design is more pervasive. So we're looking forward to implementing that. So that's a hot off the press kind of thing within the last month that was reported for you.

KADEN: So moving within the integrative energy master plan we're hoping that we can establish improvements in buildings first. But that's not the only source of the problem. We have distribution issues, and one of the things we're trying to do is continue with that steam piping and condensate replacement projects. We still have opportunities to return more condensate and we hope to continue to get close to that 90% return. That would be an outstanding goal for us to meet.

MORRISON: So when you see lots of under street and under sidewalk construction going on, that's probably it. Apart from the street, you know, we're doing stuff on Jordan Avenue right now. But, when you see a street get dug up, like Law Lane last semester and – and do a big project through there. Around the student – the IMU last semester that's – that's what that is.

KADEN: And finally, interconnecting those central chilled water plants. That's again, a very positive thing, and hopefully at – at some point that Union Street plant will provide another 1,500 tons of cooling for our system.

We fixed the buildings. If we fixed the distribution systems, now we can go back to the source and – and optimize that. Right now we have large boilers in the central heating plant that's firing both coal and natural gas. Our current mix is about 90% coal, 10% gas. It has a budgeted number, but as gas prices go down we burn more gas, and in fact in February we will burn all gas because the prices have been so significantly reduced. There are now – it's cheaper for us to burn coal – or to burn gas than coal and it's – and in fact that's our charge is to do it as cheaply as possible. But there's other opportunities up here including gas fired combined heat and power. So there's an opportunity for us to develop a machine, it exists and other campuses have them, where you burn natural gas, you turn a turbine, you make electricity. The waste from that turban goes into the boiler house and it gets distributed as steam, so you get two energies for the price of one, and so we're looking at opportunities there. We're limited by how much heat we can reject in the summertime. We don't need a lot of heat in summertime, and we don't want to put a lot of cooling towers up there so we can just produce more power and – and waste more heat. So we can't do a Purdue job here. We cannot build fifty

megawatts, but we might be able to build seven or eight. That would drop that peak, we could waste the heat to the campus for showers and reheat, and the minimal heat load that we do have in the summer and then save some money. Solar heat, I think, has a real opportunity. Solar thermal I think is a very proven technology. We're testing a couple of inventor products at the plant right now. And then opportunities for converting to hot water distribution. Again, we talked about those seven plants. Fuel switching we're already doing. Geothermal, [comment indistinct] came from a campus that jumped into the geothermal big time. There's opportunities here, I think, in strategic locations. I don't think we will have the opportunity to drill the thirty or forty thousand wells it would take to do our campus, but we might be able to pick pieces on the campus – on the edges for example, you know, target those for geothermal. Finally everybody is – is excited about renewable energy. We are, too, but it has to make financial sense, and so we're looking at various projects. I mentioned the solar water heating and the PV thermal demo. We found two products vended by companies from Indiana. This – the PV thermal is a very interesting product. They have a photovoltaic panel with a thermal – essentially a radiator on the back of it – and so we can produce power from the front and hot water from the back and it's like solar cogeneration. It's actually pretty exciting. PV at other selected locations. Again, we need some help either regulatory or with the power companies to assist us with some incentives. It doesn't really pay right now. There are products that you can put solar PV right on the glass. We haven't tried that yet. But we do buy energy credits for all of our LEED projects. In fact, we comply with the enhanced credit where we buy two years' worth of 100% power. These days it's about $1/10^{th}$ of a cent per kilowatt hour – very, very cheap. And finally, there might be some wind turbine demonstrations but we are in the southern half of the state where wind profile is very poor.

These are eight of our demonstration and renewable energy projects around campus. Nothing quite very remarkable here except that several of them are on the residence halls and performing quite well. And so, the last slide is just indicating some additional stuff that we're going to be working on. Right now, I've got a colleague working on parking garage and sight lighting upgrades. We're trying to standardize on the type of LED products that are out there that work for us. Significant savings in sight lighting. Finally, the renewable energy trends, we need to stay aware of those because those change about as much as – as Brad's computer technology. So we need to work on that.

SHERMAN: Thank you Tom and –

KADEN: - Thank you very much.

SHERMAN: No, it is great. I'm sure that there would be questions, but I do want to make sure that Bill has enough time to do his presentation. I would – I would just say that if we all did as

good a job on our homes as they're doing on our campus, it would make a difference. Thank you all. This is – this is Bill Brown, and what's your new title, Bill?

BROWN: The University Director of Sustainability. Well, I'm very grateful to be here. It's a great opportunity to thank the faculty for making our office possible. I don't – I wouldn't be in this job without faculty involvement, and we are very much a unique creature on this university where I report to Tom, but also to Provost Robel. And I'm not sure how many other entities are like that, but we take great pride and great strength from that. And as I want to show you that we are a combination of academic and operation brain power, and obviously a lot of student involvement as well. And since we are such a unique entity it's very difficult, and we've tried this hundreds of times, to represent what our network looks like and lines don't do it. We are very much a network and so we have this Venn diagram that still doesn't quite tell the story but I'll try to fill in some of the – the details. But in essence, we try to pull together the academic side and the operations side of the university and create opportunities for students to participate in that. And we also involve the community. Obviously, sustainability crosses the border of 10th St. and 3rd St. Just about everything that we do on campus affects the city and vice versa. So we engage with the Bloomington community and communities throughout Indiana.

We are a very small office. This is our staff. Kristen is the Assistant Director. Andrew is our new Associate Director, and Andrew really is charged with academic programming and, in particular, something we call the Living Learning Lab or Transitions Lab, and I'll say more about that. Nancy is a part-time project coordinator, but we figured out that she also was the first development director at the Kinsey Institute so we've pressed her into raising some money for us. But really the engine that drives us is a very talented pool of students. We have eighteen student paid interns at a time. I like to say that 96% of our staff turns over every year, which if you were a basketball team or a corporation it would be death, but for us it's life because it allows us to very rapidly change and morph as we need to. We are hiring interns right now for the summer and if you know of any bright students send them our way. We hire about 6% of our applicant poll so we get the best and the brightest, and they work with six – our seven working groups, and one of these is education and research, environmental quality and land use, energy and the built environment. Jeff is a former co-chair of that working group. The food working group, resource use and recycling, sustainable IT, and transportation. And each of these working groups has an academic co-chair and an operations co-chair. Each of them are populated by faculty, staff, and student volunteers. So really we are also powered by volunteers. We have about 200 volunteers associated with these working groups, and what we try to do is get the stakeholders to the table that can make things happen. That is why we had Jeff as the co-chair of the energy and built environment working group. Hank Hewetson is now co-chair of the resource use and recycling working group. Those are the kinds of people that if

a faculty or researcher or someone from the student body has a great idea, there's somebody sitting at the table right there that can take advantage of that. Our student group, particularly in the summer time, they take a seminar. We teach a one credit course in the summer. They all get credit for this and we typically – they're each working on their own research, they're working with the working groups, they're working with mentors from the faculty and staff. But in the summertime we get the opportunity to go out and look at things. This happens to be in the middle of the solar field at the airport, which they get a big kick out of that. But the other very important thing that we do is try to work with faculty to develop new courses and to integrate sustainability into existing courses. So we had a sustainability community practice. This is David Orr, came and talked to our community practice. This is at E-house where our office is, and we have various events like this throughout the year. We have green lunch and learn series and then there's – there's an opportunity at the end of the year for faculty to be paid to participate in a community of practice around the topic of sustainability. We also coordinate funding for graduate research grant program. We don't have the money, but we're able to coordinate that and collect the money from various departments and then coordinate this program where we provide this seed funding to graduate student research. And as Jeff pointed out, we do support the effort to provide IU with leadership in green buildings. That happens to be my background and something that's personally very interesting to me, but energy is one of the largest impacts that a campus like this has and so we participate and try to make this as easy as possible to do Gold buildings so that people don't have to – to dig up stuff that is right there in front of them. And we've had some really brilliant interns help us with that research.

The food working group tries to expose students to the wonderful food community that – that we have, and many students unfortunately don't venture very far off campus sometimes. So we, during the Big Red Eats Green bring the food and culture of Bloomington onto campus so they can experience that. But the food working group has been working very hard through three summits now to work with vendors to work with our food suppliers, our food services about getting more real food in the dining centers. More local food, more healthy food, and working with the whole network, the whole system to make that happen. It's a very complicated process but very educational for everyone involved. We were one of the first twenty bicycle friendly universities and we got a bronze rating which means we have room for improvement all the way to the platinum level, and we're very grateful that the university is now conducting a bicycle master plan for this campus. And we're excited to see where that leads. We also do a lot of things with waste management and diversion of stuff to the landfill and – and one of the things that the community helps us with is the Hoosier to Hoosier community sale. And this is an attempt to divert, move out waste from the landfill and keep it out of the dumpsters and off the curbsides in Bloomington, and this has been a very successful program. Again, it's a student idea that led to implementation of this program.

The energy challenge was another student idea that – how do you get all of these people on this campus that don't pay a utility bill to be aware of energy use, and his idea was to have a challenge, to have a competition. And this has been very much a collaboration with physical plant and student groups, RPS, but this is a very unusual energy challenge in that it's huge. It's – it's about six million square feet of buildings. It's 18,000 people that are affected by this. Twice we entered a national competition during our energy challenge and twice the water savings on this campus were greater than in the total of the water savings on the hundred other campuses that were in the competition. So our students are pretty good at this, and we've done some research to see what the persistence of that effect is, and it's very persistent. So if you do this in the fall semester, the behavior that people learn and they typically – the winners will be in the 20% savings range. That behavior is persistent, so we feel it's very interesting and we continue to study this. We also award achievement – we award the catalyst awards for teaching, for research, for leadership in sustainability and you might recognize some of your colleagues in that photo. And one of the things that we also are responsible for is our university's reports on various metrics, and before I was hired I think there was a controversy because Bloomington was rated a D+ on a particularly prominent rating system, and so metrics are something that – that we take seriously. Unfortunately, some of the rating systems are not very good. They're not very scientific. They're not very transparent. So the Association for the Advancement of Sustainability in Higher Education came up with their own rating system and this now seems to be the leading metric for campus sustainability worldwide, but you can see that about half of what is looked at is education and research, then you have operations and planning, and administration. And we struggle to get information that we need, especially in education and research. There is no easy way to search, for example, for education – or for research in sustainability. There's no way to do that search that we have been able to find, and it's also difficult to find out who is teaching classes that are sustainability focused or that have modules that focus on sustainability. So this is a constant effort and we'd love to have your ideas and your help on how best to do that. But it certainly reflects the success of this university in terms of sustainability. So it's an important metric.

We also do venture off campus sometimes, and we're talking to NSA Crane right now. The Department of Defense has charged all the bases to work very aggressively on their sustainability goals and NSA Crane actually reached out to IU to say, hey, we could use some help with this. And of course the way we think about this is, wow, this is a great opportunity to involve faculty and students in their research and to get some, perhaps some capstone courses involved with working with Crane. And we are very happy with the result of the bicentennial strategic plan, which now has a core value which includes sustainability. One of the missions of our office is to catalyze a thriving culture of sustainability in academic research, operations, administration, campus life, and community outreach to enhance environmental health, economic prosperity, and social equity. So when you see something like this in the strategic

plan we feel like we're making some progress and this is something that now is very recognized by the administration as something that's important, so we're grateful for that. You've heard from Jeff that we've made a major commitment to LEED certified green buildings. There's going to be a focus across all of our campuses now on environmentally conscious campus design including bicycle master plans and extension of the green buildings throughout the system. And looking at a variety of different approaches to energy and utility supply as you've heard from Jeff, and then using our guiding documents like the campus master plan and the innovative energy master plan to see what opportunities exist for us to go further.

And then finally this piece – support innovative campus living laboratory initiatives that provide opportunities to integrate campus operations, faculty and student research, education, student life, and community engagement to apply solutions-oriented sustainability research. That is why we hired Dr. Predmore to formalize this idea of a living learning lab, and this is something that is growing across the country. There are only about four institutions now that do this in a very formal way. We want to be in the first group and we've learned from them, but we think we can extend this. We've learned a lot through our internship programs and through our working groups that we think we can apply to this concept but we're calling this the 2020 Transitions Lab to foster collaborations between operations, academic, and the Hoosier community to accelerate student learning and sustainability. And this is something that we think have benefits for faculty, for students, and for operations. It very much fits with the campus strategic plan and the bicentennial strategic plan, and high impact learning, and collaboration across disciplines, interdisciplinary research, undergraduate research. It strengthens operations by allowing operations to say, hey, we're getting this data every fifteen minutes what do we do with it? What's it mean? And, in fact, we have a class that's going to take this data and start to do some mathematical analysis of that. So there are opportunities that come out all the time on this campus from the operations side and also from the faculty side. In this case we had a math professor saying, hey, I could really use some data for my class to crunch the numbers and show them how you can take big data and make sense out of it. So we're looking for those marriages of operations and academics that can be very fruitful and profitable for everyone involved, and that's somewhere we could use your help.

So my last message is, how can you get involved as faculty? You can join the working group. We have faculty members on all of our working groups. You can engage in the 2020 Transitions Lab, and please contact our office if you are interested. Incorporate sustainability in your courses and research. Many of you are already doing that, but we may not know about it, so tell us about that. There's actually a designation, a course designation, asks you for those classes. You can join in the community of practice and apply for course development fellowships. We offer course development fellowships in the summer and we hope you will

apply for those. But again, I thank you for the opportunity to present to you, and we may have a minute or two for – for questions.

SHERMAN: Are there questions for Bill?

BROWN: Yes?

SPANG: So I'm one of at least half a dozen people in this room with an office in Ballantine Hall, which seems to fall under none of these wonderful categories and, you know, we've grown accustomed to its face. But is there any thinking in your offices about how to bring –

MORRISON: To – to all of you who work in Ballantine, I apologize. [Laughter]

GREINER: You need to help us.

MORRISON: We have done some – some projects to make it more energy efficient. No question, Ballantine needs to be renovated. It – it will be part of our state request in the next biennium to fully renovate Ballantine. And the worst piece of energy and efficiency in that building is all those window air conditioners and so it bothers me to no end to walk by buildings, you know, like that one that have window air conditioners and hear them going this time of year. So – so no question it needs work. We've been doing – you've been doing work in there with some – some E-teams –

KADEN: The E-teams have actually gone through there. You've probably done more to make it look good than we have to make it feel good.

SPANG: Well, my thermostat is set at 55 and it's like 90 in that room.

KADEN: Sorry. [Laughter] All I can say is that we had a director one time who would respond to a comment like that by saying, "Our opportunities for improvement are increasing every day." [Laughter] That's the best I can put it.

MILLER: Is there some opportunity to improve air quality? How are we doing on air quality with our coal fired plant?

BROWN: Well, I think Jeff addressed that. That that's our challenge is to –

MILLER: [Comment indistinct]

BROWN: – reduce the amount of coal that we are burning and to look at other fuel sources, and as you saw there were a whole range of opportunities to try to do that. And I do think that it is something that the university is taking that quest seriously and working very hard to try to identify those opportunities. But the fact that we're reducing the amount of energy we're using

in these buildings – the innovative energy master plan, for example, pointed out a way to reduce our energy use by 37% which reduces our emissions by 51%. So that's a significant way to reduce our impact, and it's great that we have got Jeff on the job to help us with that.

MORRISON: We've – we've been a few years now of being primarily natural gas. In the last couple years, almost all natural gas. I recognize that's a big – produces greenhouse gasses, too, no question. But it is our desire to try to get away from coal, and we've been doing that the last couple of years. But there's a cost element to it. One there's a cost element to it – and I always want to be completely transparent. Somebody asked me last year when I made the statement about burning natural gas, and they said, no, I heard from somebody you were burning goal last January. And I said, darn right we were burning coal last January, because we have an obligation to keep you all warm, and we cannot in really, really cold periods – we have to burn everything we can and so – but in a static state, and Jeff correct me if I am wrong right now, we're burning natural gas at a higher percentage. And a lot of that has to do with, you know, all other things being equal that's what we want to do, and that's what we've been doing the last couple of years. There are times when cost factors come into that, but that's been our predominate source the last three years or so?

KADEN: Yes. 2012 we were all natural gas the entire year. And those of you who've been around a while know that we used to have a coal pile on the grounds. That's gone. So those emissions and that fugitive dust is gone. We have upgraded the bag house so we can reduce more particulates that leave the smoke stack, but that drives our costs to dispose of those wherever they're going. So there's always financial tradeoffs with this discussion as well. But I can tell you the plant is running as clean as it can for the technology that – of 1971.

MORRISON: Because we made a lot of adjustments – we have over the last few years renovated the plant to be as clean, you know, I would say we are running that plant as clean as it ever has.

KADEN: Yes.

MORRISON: And – and so that is our quest always.

KADEN: We – we've spent millions of dollars on a modern control system that is now digital. It used to be pneumatics and pneumatics is very slow to react so when you change the heat input or the oxygen input or the coal input, which is what you need for a fire, those things always – never really matched and things would slow down and then you'd get poofs of smoke. So we light boilers cleaner than we ever have and we fire the boilers cleaner than we ever have so, you know, it's not ideal but it's the best that we've got right now.

SHERMAN: Well thank you all for coming, and there's a big chance for faculty involvement. If you want it, it's here.

MEETING ADJOURNED: 5:31PM