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Faculty Senate Chronicle for October 1, 2015

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the university of akron Chronicle

a report to the faculty of the university of akron

October 1, 2015

42 pages

SENATE ACTIONS

- **Adopted a resolution from the Academic Policies Committee to create the Center for Data Science, Analytics and Information Technology**
- **Adopted resolution from the Curriculum Review Committee approving curriculum proposals**

Any comments concerning the contents in The University of Akron Chronicle
May be directed to the Secretary, Pamela A. Schulze (x7725).
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Minutes of the Faculty Senate Meeting of October 1, 2015
3:04 - 5:07 p.m.

The regular meeting of the Faculty Senate took place Thursday, October 1, 2015 in room 201 of the Buckingham Center for Continuing Education. Senate Chair William D. Rich called the meeting to order at 3:04 pm.

Of the current roster of 59 senators 43 were present for this meeting. Senators Cutright, Gandee, Landis, Lashbrook, McCullough, Moritz, Pope, Sastry, Saunders and Schaeffer were absent with notice. Senators Coffey, Kemp, Kidd, Morath and Srivatsan were absent without notice.

I. Approval of the Agenda

Senator Raber moved to adopt the proposed agenda. The motion was seconded by Senator Saliga.

The agenda was adopted without dissent.

II. Approval of the Minutes

Senator Bouchard moved to adopt the minutes of the April meeting. The motion was seconded by Senator Sterns.

The April minutes were adopted without dissent.

III. Remarks of the Chairman

Chairman Rich remarked as follows:

> On today's agenda are the election of a second representative of the Faculty Senate to the Graduate Council; from the Academic Policies Committee, a proposal for the creation of a Center for Data Science, Analytics, and Information Technology; from the Curriculum Review Committee, a set of curriculum proposals for our approval; and from the Computing and Communication Technology Committee, a resolution concerning on-line student evaluations of instruction, consideration of which was postponed in the May meeting of the Senate.
>
> Another round of run-off elections in the College of Arts and Sciences has been completed. Five Faculty Senate seats were filled as a result. There is one seat remaining to be filled. In addition, Parizad Dejbord-Sawan of the College of Arts and Sciences has submitted her resignation from the Senate, so there is also an unexpired term to be filled by special election.

I want to welcome three new Senators from the College of Arts and Sciences: Stacey Nofziger of Sociology, who was elected to a full three-year term; and Robert Pope of English and Randall Mitchell of Biology, both of whom were elected to unexpired one-year terms. I also want to congratulate Senators Janet Klein and Phil Allen, both of whom were re-elected.

In addition to three elected representatives on the University Council, the Faculty Senate has two representatives on each of the several committees of the University Council, of which one must be a member of the Senate and the other must not be a member of the Senate. Appointments of these representatives are made by the Faculty Senate's Executive Committee. There are currently two vacant positions. One is for a faculty senator on the University Council's Communications Committee. The other is on the University Council's Information Technology Committee, and that is for a faculty member who is not a senator. If you are interested in representing the Faculty Senate on the University Council's Communications Committee, please let me know. If you know of a faculty member who is not a member of this body, and who you think would be well suited to serving on the University Council's Information Technology Committee, please let me know after confirming that he or she is willing to serve.

Last Friday I attended a meeting of the faculty senate chairs of the universities of the Mid-American Conference, which was held on the campus of Eastern Michigan University in Ypsilanti, Michigan. The subject of the meeting was the escalating costs of intercollegiate athletics in general and especially football, and the strain that those costs impose on university budgets.

In absolute terms, the University of Akron is behind only Eastern Michigan University and Buffalo in the amount by which the University subsidizes intercollegiate athletics, according to published figures. Akron, however, has the largest intercollegiate athletics budget in the MAC, and is in the middle of the pack in terms of the proportion of its intercollegiate athletics budget that the University subsidizes. On average, MAC universities subsidize their intercollegiate athletics budgets in the neighborhood of $20 million annually.

All of the representatives in attendance agreed that, in this era of declining state support for public higher education, the escalating costs of intercollegiate athletics pose a serious threat to their respective universities' ability to perform their core academic mission. This year all of the MAC universities decided to increase athletic scholarships to cover the "full cost of attendance." At the University of Akron this increase cost the University approximately $700,000 annually, which is roughly the amount of money that was saved by the elimination of the University's baseball team.

An Eastern Michigan University faculty member in attendance at the meeting, who is highly knowledgeable about intercollegiate athletics, having previously been a football coach and an athletic director at various universities, predicted that escalation of the cost of intercollegiate athletics will continue unless and until deliberate steps are taken by the universities to restrain this escalation.

There was also general agreement that the MAC universities ought to work together toward de-escalation of costs, and that the leadership of the faculties of those universities should take action to encourage their universities to pursue such a course, and to educate the public about the consequences of the increasing cost of intercollegiate athletics.

In the September Faculty Senate meeting I reported that the Administration had promised to conclude the process of allocating full-time faculty positions for the 2016-17 academic year during the month of September. I said, "[T]he outcome of this decision process warrants close scrutiny by the faculty. The recent budget cuts represent an opportunity for the University to do what the faculty have long advocated: to allocate a greater proportion of the University's limited resources to its core academic mission, which is performed largely by the faculty. I expect to be able to report the results in our next meeting, so that we can evaluate how well the University had done at seizing this opportunity."

This past Tuesday, the Administration announced the allocation of 55 full-time faculty positions for 2016-17. Approximately one-third of these positions are tenure track. The annual cost of these 55 positions is estimated to be $4.5 million, which is somewhat less than the total amount of money already in the colleges' fiscal year 2016 budgets for faculty positions that became vacant due to retirements and other separations that occurred after January 2015, for temporary full-time faculty positions that are to be made permanent, and for positions that were authorized but not filled for this academic year. (Positions that became vacant earlier than February 2015 were removed from the college budgets.) None of the 55 positions are to be funded with money from the $10.4 million pool of funds for strategic initiatives.

Essentially, the allocation of these 55 positions means that, so far, the amount of money allocated to full-time faculty positions will be approximately what it was before, but vacant positions will be filled and temporary positions will become permanent, although these positions will not necessarily remain in the same departments or colleges.

The Administration has indicated that a second round of position allocations will occur during October and November in conjunction with meetings with the college deans about implementation of college strategic plans. These position requests will have to be justified in accordance with college strategic plans, and presumably will be funded

largely from the $10.4 million strategic initiative pool. Any such position allocations would represent new investment in full-time faculty positions relative to last fiscal year. It remains to be seen how many positions will be allocated in the next round.

I am concerned about the timing of the second round of faculty position allocations. I had previously urged that all of the allocation decisions be made by this past August 31, and the Administration had agreed to do so. When it became apparent that this deadline would not be met, a new deadline of September 15 was established. When I addressed this body on September 3rd, I already suspected that the new deadline would not be met, and so I said only that I expected the allocations to be made "in September." As it turned out, only the first round of allocations was made in September. We are told now that the second round will be completed in October or November. Even if there is no further slippage in the schedule, the second round of allocations will occur late enough that searches may not begin until December or perhaps even January, which in many academic disciplines is too late to attract the strongest candidates. I have urged the Administration to make these decisions this month.

I am also concerned about the fact that approximately two-thirds of the 55 positions allocated are non-tenure track. Under the current rules, these faculty members will have no job security beyond the end of each academic year. The University may decline to renew their appointments not only for just cause or because the position is no longer needed, but for almost any reason, or for no reason at all. Under such conditions of insecurity, academic freedom is more theoretical than real, and the University is unable to attract the high-caliber faculty it can attract with tenure-track appointments. Moreover, if appointments are made at the rank of lecturer, the service responsibilities are concentrated among an ever-decreasing number of tenure-track faculty, which necessarily detracts from the time they have to do research and teach. It must be noted that, to a large extent, the predominance of non-tenure track appointments reflected a similar predominance in the position requests submitted by the deans, but it must also be noted that the deans appeared to believe that requests for non-tenure track positions would be more likely to be granted than would requests for tenure-track positions. I hope that in the next round of faculty position allocations, there will be a much higher proportion of tenure-track positions, especially because the first round of allocations decisions addressed only the requests that were deemed to address clear, almost undebatable needs.

This concludes my remarks.

IV. Special Announcements

Dr. Carlo A. Bersani, Professor Emeritus of Sociology, died September 24th at the age of 86. The Senate stood for a moment of silence in memory of our deceased colleague.

V. Reports

A. Executive Committee

Senator Schulze reported as follows for the Executive Committee.
Since the Faculty Senate last met on September 3rd, the Faculty Senate Executive Committee met twice by itself and once with the Provost.

The Executive Committee first met on September 17th to conduct regular Senate business and to prepare for the meeting with the Provost. The EC made appointments to the Faculty Research Committee and General Education Advisory Committee.

We were updated on the Gen Ed Core 13, the appointment of the General Education Coordinator, the allocation of graduate assistantships for 2015, and the allocation of permanent full-time faculty positions for 2016-17. We discussed proposed changes to academic calendar, the University Press, strategic plans for libraries, Graduate School, and Honors College. We also discussed the creation of an Assessment Coordinator position. The Provost updated the EC on Fall enrollment.

The Executive Committee next met on September 24th to discuss regular senate business and to prepare the agenda for today's Faculty Senate meeting. The EC certified the election of Phillip Allen, Stacey Nofziger, Randall Mitchell (1 year), Robert Pope (1 year), Janet Klein in a BCAS run-off election. We discussed University Council committee vacancies and a senate seat vacancy. We then planned the agenda for the upcoming senate meeting.

This concludes the Executive Committee's report.

B. Remarks of the President

President Scarborough discussed the process of the first round of faculty position approvals. He discussed the strategic planning process in the Honors College and the Graduate School. He discussed the opportunities he sees with the Honors College. Enrollments have increased the last two years.

One of the initiatives that came from the University's New Initiatives Summit was to brand and grow the Honors College. He would like to find a donor for a significant gift; this would lead to naming the college, branding it, and marketing it aggressively to attract well prepared and general well-resourced students. The President noted that there would be very competitive

financial aid packages that would allow students of all socioeconomic backgrounds to access that experience.

The President discussed the difference between cognitive conflict and affective conflict. He urged faculty to engage in active, constructive debate that would lead to better decision making, but to avoid negative, destructive conflict.

C. Remarks of the Senior Vice President and Provost

The Provost said that the administration was pleased to be able to announce the approved faculty positions this week. He thanked Chair Rich and Department Chair Matt Lee for their advice and perspectives during deliberations. The Provost agreed that we need to proceed quickly with the next phase of faculty position approvals.

The Provost said that things are going well at the University because applications are up the last three years: from 13,000 to 18,000 to 22,000. Graduation and retention rates are up. He asked that we join him in communicating these successes to the community.

VI. Senate Elections

Chair Rich announced that the position of second representative to Graduate Council was vacant and needed to be filled.

Chair Rich called for nominations. Senator Bouchard nominated Senator Allen. Senator Allen accepted the nomination. Senator Saliga moved to close nominations and elect Senator Allen by acclamation. Seconded by Senator Sterns. Chair Rich called for the vote.

The motion was adopted without dissent.

VII. Committee Reports

A. Curriculum Review Committee

Vice Provost Ramsier reported as follows on behalf of the Curriculum Review Committee:

The CRC brings forward a list of curriculum proposals that were distributed (Appendix A). They come to the committee without any outstanding issues or concerns. We bring this to you and ask you to approve them so that they can be implemented by the end of the semester.

The motion was adopted without dissent.

B. Academic Policies Committee

Vice Provost Ramsier reported as follows on behalf of the Academic Policies Committee:
The Academic Policies Committee brings forward a proposal for the Center for Data Science, Analytics and Information Technology at The University of Akron that was distributed electronically (Appendix B). It comes with an addendum with some examples from the literature about the rationale that could support this. As you can see from the authorship on the front page, a good number of faculty worked on this over the summer and then finalized it in the fall after the arrival of Mario Garzia, who was hired to be the Executive Director of the Center. This comes to you as a motion from the committee, doesn't need a second, for your discussion and approval.

Chair Rich asked if there was debate on the motion to approval the proposed Center for Data Science, Analytics and Information Technology.

Senator Bouchard spoke against the motion. She believed that the Center should be better discussed, better led, and better resourced. The Center will cost about $1 million per year, including the salaries and benefits for the director, assistant director, and assistant to the associate director; a $250,000 operating fund; and office expenses. What they are planning to do with this funding seems skimpy. They are going to have a total of 12 hours of meetings with faculty to find out if faculty know anything about data science, and then they are going to be talking to industry to see if industry might be willing to donate money for scholarships and other purposes. We currently have a development office for this purpose.

Senator Bouchard added that she is concerned that there is a lack of clarity in the new Center's mission. The rationale is all about big data. Big data is a specialized area. Mr. Garzia comes from Microsoft, which is in the business of making software for PCs. This is not the same as big data. Senator Bouchard has talked to people from Silicon Valley whose specialty is big data. There is a conference called StrataCon currently taking place. Mr. Garzia is not participating in this. He was hired without a search, and so there was no time for involved faculty who did understand these areas to assess the qualifications of different people who might know something about big data to be in a position to assess the different qualifications of different applicants for the directorship.

Big data is something that is run primarily by people in computer science, math, or statistics. Although faculty from those areas were in the initial group of faculty who helped with the proposal, the ones who are set up to run it are from the CAST, Business, and Engineering. They are all associate professors, and we already overwork our associate professors. They may never make full professor at this rate.

There's talk about trying to raise money for post docs. You can't have post docs without a doctoral program. Computer Science does not have a doctoral program.

The final and biggest point is what is missing is faculty. It is putting the cart before the horse to approve the Center before there's any discussion of having faculty for it. The plan is to invite faculty to workshops in the hopes of identifying faculty who know about data.

It seems that, for a million dollar project, the Center is being put together on the cheap. We are just trying to cobble together pieces from around campus, hoping we look like we know something about big data even if we don't.

The Center as it's currently proposed seems like a waste of money the University does not have.

Senator Allen asked if there was any strategic differentiation between the proposed new Center and others that are popping up at other universities. He expressed concern that UA is a little late to the game.

Vice Provost Ramsier replied that it is his understanding that the intended difference is to intimately couple the work of this Center with the needs of the local economy, local industry. That's why Dr. Garzia has been out meeting with leadership in the region. That's the first, primary goal: to try to provide a format through which our students in the disciplines that are to be represented by the Center--not taken over by the Center, but pooled together by the Center—so that the industrial people know where to go when they're looking to hire our students. That was part of the message the president sent out last year about this. He's hearing from industrial people that they don't know where to go on our campus to hire people with the skills that are needed. So the idea is to bring together as many people—including Economics, as Senator Erickson has suggested—that do train students in areas related to IT, big data, and analytics, all of which are also sparse in these area. They are different; they're not one and the same. It's a three-legged stool. I see the value in having a center that can help our academic programs come together to have what we have always ask for: interdisciplinary training and work for our students, and potentially jobs. Most of the students in these areas are really looking for employment upon graduation.

I think that the fact that we hired someone from the outside who isn't part of the University until recently—and the idea of having summits or retreats or forums where you ask people if they're interested—I don't know how much more shared governance you can get than asking the people that would be the players to come and help us build the thing.

It may not be as well-defined as one might hope, but I can think of other center proposals that were not well-defined either. They were primarily driven by faculty who got together, started an idea, the idea turned into something that looks different than the original idea, because other faculty got involved, and that's the way it's going to work.

There was only one abstention vote on APC. Everyone else was unanimously in favor of the proposal. The one abstention was from Senator Klein, your colleague.

Chair Rich asked Dr. Garzia if he would like to address the body.

Dr. Garzia thanked the faculty for their comments. He agreed that the basic idea is to do something collaborative. He said he also has friends in big data, and that he did big data for many years.

The idea is not to cobble together anything we can and then put a shiny name on it. The idea is to see what we do have, do an assessment, both external and internal, find out what the interest is within the University, what we do have available, where the gaps are, and how that compare with the needs of local businesses, huge businesses, that we have in the area like Smuckers, Goodyear, et cetera.

Senator Lillie said that Dr. Garzia was right in terms of some of the collaborative issues that have gone on in the last few months with regard to the Center. We first heard about this particular Center in the spring, and it was just a couple of pages that were very vague. Then over the summer, the Faculty Senate Executive Committee said no, we need more information, we need to have it looked at, we need to have it fleshed out.

This report, for what it's worth, is a result of that process. In other words, it was sent back, the Faculty Senate Executive Committee said no, you need to do more work on it. So it went back to the committee, and then it came back through our regular process, now, through the Academic Policies Committee, and is being presented to us here.

Senator Lillie added that he was speaking about the process, not the merits of the proposal. This is the kind of thing that illustrates what happens when there is a shared governance process that works.

Senator Erickson said that she was part of the discussions over the summer. The original report came to the group I August. We asked at the time for the proposal to be fleshed out a lot more. The Faculty Senate Executive Committee asked that it be much more clear and developed.

Senator Erickson asked Vice Provost Ramsier to describe the process and why he feels it's ready to be voted on now when it wasn't before.

Vice Provost Ramsier said that it was the three faculty who did the work: Shiva Sastry, Bill McHenry, and John Nicholas. Since the end of August, when the Executive Committee said that this doesn't have enough meat on the bones, they really worked extremely hard to put this together. It's much different than when the EC looked at it in August because of the hard work of the faculty. When Dr. Garzia arrived, September 15th, they met with him and fleshed it out further. Then all of them came to APC to present. Questions were answered to the satisfaction of the Academic Policies Committee. This is the body Senator Lillie mentions that brings centers and institutes closest to the Senate. It seemed to the Academic Policies Committee that its questions were answered.

Senator Klein asked a question about the process. She asked why there would be a director hired before the Center was approved.

Vice Provost Ramsier replied that he did not have a direct answer. It was just an opportunity that an alum, Dr. Garzia, was leaving Microsoft from a very high profile position, he's from the area, had an interest in coming back—it was an opportunity presented to the University that was seized with the intent of following the regular process to build something that could benefit many of us for many years to come. It's a different route, but when opportunities present, decision makers are paid to make decisions, and they have to make a call. Vice Provost Ramsier expressed the opinion that in this case they made the correct call.

Senator Hausknecht applauded the process. He asked about the practical implications of a slightly longer delay in making a decision given that Dr. Garzia has been brought on staff, has begun the process, and there are committees working on this already. What has been the feedback from potential community partners? If we were not to make a decision this month and put it off until December of January to get some more feedback from the community, is the process harmed in anyway?

Vice Provost Ramsier said he would defer to the judgment of the faculty who worked on the proposal. If they were willing to put in that much effort, there must be something there. If it doesn't pan out, he's sure Dr. Garzia would be the first to say it's not working.

Senator Willits noted that the format for the Center is different from others, since they report to the Office of Academic Affairs rather than a college or department.

Vice Provost Ramsier said that while it is true that the Center will report to the Office of Academic Affairs, so does the Corrosion Center, the Biomimicry Center, the Center for the History of the Archives of Psychology, and the Innovation Practice Center. They are interdisciplinary, centrally located centers in order not to have them buried in a college. This encourages faculty to work across college boundaries.

Senator Willits noted that the Center is not self-supporting. There is a fee structure for companies, and the money raised is to be used for student scholarships and projects. The Executive Director, Director, and staff aren't teaching. If we are going to start centers, they should be ultimately self-supporting. Is that part of the review?

Vice Provost Ramsier agreed with the concept that a center should be self-supporting. The fee structure is intended to begin to do that—raise money. First the emphasis is supporting students, then projects by the faculty. There are very few self-supporting centers on this campus. The David Baker Center is partially self-supporting. The salary is not supported by the Center; it's supported by the University. The only center that's fully self-supporting is the Corrosion Center. It's a rare model on this campus, but it's a good goal to have.

Senator Sterns addressed the issue of how centers are created. He has been the Director of the Institute for Lifespan Gerontology. Forty years ago groups of faculty came together wishing to develop research and applications and working with the community in the field of aging. What happened was that there were many faculty who wanted to add aging as an area to their academic teaching and research, so they came together as a group. There was a developmental period of a couple of years and then the Institute was officially designated by the President of the University as a multidisciplinary center. The Institute originally reported to the Provost's Office, but then various administrative shifts have put the Institute elsewhere. He discussed the grant funding for the Institute and students from various programs that have pursued it.

Senator Saliga asked what would happen if no faculty are interested in participating in the proposed Center?

Vice Provost Ramsier said that there were others who were interested over the summer. They are listed at the bottom of the front page of the proposal. If big data is a big deal in Silicon Valley, and other such centers are popping up at institutions, then there are probably a lot of faculty interested in this. If not, it will dry up and blow away. Dr. Garzia is putting his time and reputation on the line to make this work. It's for the faculty and the students. If there are no faculty or students interested, there's a problem, because we have a lot of students in areas that are related to this three-legged stool.

Chair Rich called for a vote.

Motion was adopted.

C. Athletics Committee

Submitted written informational report. See Appendix C.

VIII. Unfinished Business

The Computing and Communications Technology Committee resolution concerning online evaluations was postponed until the next Faculty Senate meeting.

IX. Report of the Faculty Representatives to the University Council

Senators Lillie reported that the University Council is continuing to find a way to move forward. University Council often has trouble mustering a quorum, so there are some serious issues that may need to discussed at a future meeting.

X. Good of the Order

Secretary Schulze reminded faculty of the Town Hall Meeting featuring President Scarborough for students that is being hosted by USG President Taylor Swift, October 5th, 3 o'clock, at the Student Union Theater. Please encourage your students to attend.

Secretary Schulze also announced the upcoming AAUP Chapter Meeting on October 22nd, Thursday noon to 2:30 in Student Union, Room 335. Members were encouraged to attend.

XI. Adjournment

Chair Rich adjourned the meeting at 5:07.

Any comments concerning the contents in The University of Akron Chronicle
May be directed to the Secretary, Pamela A. Schulze (x7725).
facultysenate@uakron.edu

Appendix A

Curriculum Proposals for Faculty Senate

October 2015

A&S-MODL-15-14010	Arabic Culture through Film
BUS-FINAN-14-12988	Investment Analysis
BUS-FINAN-14-12989	Techniques of Financial Modelling
A&S-STATS-15-14235	Statistics
A&S-COMMUN-15-13662	Public Relations Writing
A&S-DANCETHEAT-15-13013	Theatre Arts
A&S-MODL-14-12840	Beginning Medical Spanish III
A&S-ENGL-15-14076	Shakespearean Drama
A&S-DANCETHEAT-15-13058	Acting for the Musical Theatre
A&S-DANCETHEAT-15-13048	Introduction to Acting for Non-Majors
A&S-DANCETHEAT-15-13050	The Audition Process
A&S-DANCETHEAT-15-13054	Musical Theatre Production
SUMM-PUBSVCTECH-15-13280	Emergency Management Research Methods & Applications
SUMM-PUBSVCTECH-15-13281	Hazard Prevention & Mitigation
SUMM-PUBSVCTECH-15-13282	Disaster Relief & Recovery
SUMM-PUBSVCTECH-15-13283	Emergency Management Business
CHP-SPORTSCI-15-13259	Phys Edu-Ex Phy/Adlt Fit-Thesi
CHP-SPORTSCI-15-13260	Physical Edu - Ex Phy/Adlt Fit
EDUC-CURR-15-13121	Teaching Social Studies to Middle Childhood
EDUC-CURR-15-13124	Teaching Personal Finance in the PK-12 Classroom
SUMM-BUSTECH-14-9429	Restaurant Management
SUMM-BUSTECH-14-12781	Computer Information Systems Internship
SUMM-BUSTECH-14-12782	Remote Access
SUMM-ENGRSCI-15-13397	Introduction to Advanced Manufacturing
A&S-ENGL-15-14082	Theoretical Foundations and Principles of ESL
A&S-DANCETHEAT-15-13014	Introduction to the Visual Arts of the Theatre
SUMM-PUBSVCTECH-14-11678	Emergency Response Preparedness & Planning
SUMM-PUBSVCTECH-14-11683	Emergency Management and Homeland Security Capstone
A&S-STATS-14-12798	Advanced Statistical Computing
A&S-STATS-14-12799	Advanced Statistical Computing
A&S-STATS-15-14246	Statistical Consulting
A&S-PANA-15-13594	Pan-African Studies
A&S-DANCETHEAT-15-13294	Theatre Arts
EDUC-CURR-15-13112	Teaching Math to Middle Level Learners
A&S-DANCETHEAT-15-13350	Styles of Scenic Design

A&S-DANCETHEAT-15-13343	Advanced Voice & Movement
A&S-DANCETHEAT-15-13057	Methods of Teaching Secondary Theatre Arts
A&S-DANCETHEAT-15-13342	Scenic Design
A&S-DANCETHEAT-15-13018	Movement Training
A&S-DANCETHEAT-15-13049	Stage Makeup
SUMM-PUBSVCTECH-14-11684	Internship in Emergency Management
SUMM-PUBSVCTECH-14-11686	Hazard Processes for Emergency Management
SUMM-PUBSVCTECH-14-11687	Technology in Emergency Management
A&S-MODL-14-12838	Beginning Medical Spanish I
A&S-MODL-14-12841	Beginning Medical Spanish Certificate
A&S-MUSIC-14-12992	Chamber Choir
A&S-MODL-14-12839	Beginning Medical Spanish II
SUMM-PUBSVCTECH-14-11674	Emergency Mgmt & Homeland Sec
A&S-ART-15-13446	Cooperative Education
BUS-FINAN-15-13084	Finance - Financial Services
A&S-COMMUN-14-9414	Media History
SUMM-PUBSVCTECH-14-11685	Contemporary Issues in Emergency Management and Homeland Security
SUMM-BUSTECH-14-10981	Computer IS - Networking
SUMM-BUSTECH-14-12775	Multilayer Switching
SUMM-BUSTECH-14-12776	Troubleshooting Complex IP-based Networks
SUMM-BUSTECH-14-12777	CIS Senior Projects
SUMM-BUSTECH-14-12778	Web Site Administration
SUMM-BUSTECH-14-12779	Introduction to Computers and Application Software
SUMM-BUSTECH-14-12780	Interactive Web Programming
A&S-MUSIC-15-13392	Chamber Choir
A&S-MODL-15-13004	Spanish Undergraduate Professional Internships
BUS-MANGT-15-13432	Management Project
BUS-MANGT-15-14169	Management - Business Analytic
BUS-MANGT-15-14173	Information Systems and IT Governance
BUS-MANGT-15-14176	Knowledge Management and Business Intelligence
BUS-MARKET-13-8001	Professional Selling
BUS-MANGT-15-13424	Information Systems Management
BUS-FINAN-15-13078	Finance - Corporate Finl Mgmt
BUS-FINAN-15-13085	Finance - Financial Planning
BUS-FINAN-14-12632	Financial Statement Analysis
BUS-FINAN-14-12983	Retirement Planning
CHP-NURIN-15-14041	Nursing
CHP-NURIN-15-14042	Nursing
A&S-DANCETHEAT-15-13324	Theatre Arts
A&S-STATS-15-14053	Statistics - Actuarial Science

A&S-DANCETHEAT-15-13341	Stage Costume Design
BUS-FINAN-14-12990	Strategic Financial Decision Making
SUMM-PUBSVCTECH-14-11675	Introduction to Disaster, Hazards and Risk
A&S-PUBLICADM-14-10441	Computer Applications in Public Organizations

Appendix B

THE UNIVERSITY OF AKRON

RESOLUTION 10-2015

BE IT RESOLVED, the Academic Policies Committee unanimously recommends that the Faculty Senate approve establishing the Center for Data Science, Analytics and Information Technology.

Center for Data Science, Analytics,
and Information Technology

at

The University of Akron

Mario Garzia; Executive Director,

Center for Data Science, Analytics, and Information Technology

William K. McHenry; Associate Professor,

Department of Management, College of Business Administration

John Nicholas; Associate Professor,

Business & Information Technology, College of Applied Science and Technology

Shivakumar Sastry; Associate Professor,

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October 1, 2015

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Executive Summary

A new ***Center for Data Science, Analytics, and Information Technology*** **(CDSAIT)** is proposed to improve *Academic Leadership*, *Student Outcomes* and *Community Engagement* in the emerging areas of *Data Science* and *Analytics,* and in the established areas of *Information Technology & Systems*. This center aims to be inclusive and build on the ongoing activities at UA in these areas. Such a center is timely and relevant in the context of the current national dialog and needs of industry. Through the activities of such a center, UA is uniquely positioned to improve our academic mission at all levels – from the career-focused Associate and B.S. Degree Programs to Masters and Ph.D. Degree Programs – in our departments and colleges that relate to Data Science, Analytics and Information Technology. Data science and analytics are indeed important foundations for our polytechnic emphasis and, hence, this center is very likely to serve as a *new intellectual commons* for cross-disciplinary dialog and collaborations.

The Need

Rapid advances in computing technologies and network connectivity across multiple scales have created a paradigm shift in the foundations of computing. The last 40 years of computing technologies were built on algorithms, programming languages and computability. The next 40 years are envisaged as being grounded in *data and information*[1]. Widespread digitization of business processes, available technologies to generate and collect Big Data, and the complexity of modern systems has created an urgent need to extract actionable intelligence from large data streams to address the evolving expectations of users, across a broad spectrum of applications. *Appendix One presents a more comprehensive argument for the need of such a new intellectual commons*.

New skills are needed from our students to address the future challenges that confront our societies and economies. Our education methods and content are, however, mired in silos that have been created by the artificial boundaries of departments, units, schools and colleges. These administrative boundaries make it difficult to synthesize novel programs and certificate courses to address the national needs for data science and analytics. In order to address serious socio-technical challenges that confront us such as: feeding 9 Billion people by 2050, reducing healthcare spend from the current levels of $3.8 Trillion per year, and revitalizing the advanced manufacturing infrastructure[2], we need to train our students to think and work fluently across

[1] John Hopcroft, J. & Kannan, R. (2013, April 9). *Foundations of Data Science*. Self-published at http://www.cs.cornell.edu/jeh/nosolutions90413.pdf, Retrieved Sept. 15, 2015.
[2] Presidents Council of Advisors for Science and Technology (PCAST). *Accelerating U.S. Advanced Manufacturing,* October 2014.

multiple disciplines. *Appendix Two presents additional information about the demand for such graduates*.

The Opportunity

We propose the creation of the CDSAIT to strengthen the polytechnic emphasis of UA and serve as a synthesizing platform to improve our Academic Leadership, Student Outcomes and Community Engagement. Through the activities of this center, our faculty will get new opportunities to engage in cross-disciplinary dialog and research, our students will get enhanced education and career opportunities in areas of significant national and regional interest, and our regional community partners will get unprecedented support to fulfill their tactical and strategic workforce needs. The center activities will help academic disciplines at UA integrate an appropriate level of skills related to data science and analytics. *The remainder of the proposal outlines how CDSAIT aims to capitalize on these opportunities and gain regional and national prominence*.

I. CDSAIT Activities, Vision and Mission

The overall vision and the mission of this center are *to establish a distinctive position of leadership for UA in the areas of data science, analytics and information technology*. To realize this, we will create specific and actionable goals and plans by fully engaging our stakeholders, i.e., our faculty, students and community partners. This ***proposal seeks approval for the structural elements of the center*** based on the proposed goals described in the following two sections. The ***operational elements of the center will be determined using a collective***, collaborative process that fully engages our stakeholders. The interests and needs of the stakeholders will be used as a basis to *refine the short-term and long-term goals of the center during its first year of operation*. Within 30 days of receiving approval for this center, the Executive Director will organize a collaborative process to synthesize the vision and mission for the center. The vision and mission will be completed within 90 days from receiving approval to form the center before we commence work on the short-term goals.

II. Rationale for the Nature of this Proposal

CDSAIT represents a confluence of emerging technologies and mature technologies and is quite unlike any other center on campus. The area of *Data Science* is relatively young and is emerging. In the current thinking, it is anticipated to continue to grow in importance for all disciplines and serve as a foundation for the next 40 years of activities in computing. While there are directions emerging, many of the educational and research questions remain to be

answered. The area of *Analytics* has been somewhat better developed over the last ten to twelve years. Several commercial tools have emerged and many universities, including UA, offer different levels of training in the area. The area of *Information Technology* is mature; it is a critical service on which many businesses rely and we have a large educational footprint although emerging areas of interest such as network security require additional focus.

UA assets in these areas are distributed over multiple colleges and programs. Consequently, in order to secure an effective and sustainable future for CDSAIT, it is important to fully engage our faculty, students and community partners before finalizing the operational details of the center. Toward this end, the specific details presented in this proposal related to engagement activities reflect our current thinking; we will refine these ideas and find mechanisms to engage with our stakeholders based on two key ideas: (1) CDSAIT will be an inclusive center and not an exclusive center, and (2) the highest community impact CDSAIT can make is to improve the state-of-the-practice in our region, i.e., Ohio and Northeastern USA, because our regional community partners have critical unmet needs related to Data Science, Analytics and Information Technology.

III. Proposed Short-Term Goals (two to three years)

1. *Identify key competencies* and *knowledge gaps* at UA in the areas of data science, analytics and information technology.

   In our current thinking, the Center will convene three 4-hour faculty summits and invite every UA faculty who wishes to participate. We will update the faculty about the needs, opportunities, and goals of the center. Faculty will be requested to identify existing courses that can address the needs, courses that can be improved by incorporating new tools, techniques and processes, and new courses they are planning in the areas of relevance to the center. The next two meetings will focus on faculty members who have provided inputs after the first meeting. The third meeting will be used to identify activities to which the faculty will commit in order to achieve the goals. External partners may be recruited to help evaluate curriculum and identify relevant benchmarks.

2. *Understand the Needs of our Community Partners*.

   The Center will organize in-person meetings and electronic surveys to solicit input from potential regional and national employers, and keep this information current. The Executive Director will personally meet between twenty to thirty companies in Ohio to

actively engage them in the center activities and better understand how to structure the financial model of the center.

3. *Create a Roadmap* for CDSAIT.

   Based on our understanding of UA assets and gaps, and the needs of our community partners, we will organize creative-problem solving sessions for our faculty at UA to create a Roadmap for research and education in the areas of data science, analytics and information technology. We aim to create an online mechanism to maintain both the Roadmap and track the key competencies and knowledge gaps. The Roadmap will highlight significant milestones that will be used both to (a) *generate external funds* from competitive sources or donations, and to (b) *evaluate the progress* and effectiveness of the center.

4. *Create a Technology Showcase and Branding* for CDSAIT.

   After we have accomplished one or two significant milestones on the Roadmap, we will organize an annual *Technology Showcase* day for CDSAIT, perhaps in conjunction with one of our ongoing activities such as UASIS. The purpose of this Technology Showcase is to highlight the research, education and community engagement accomplishments of the Center. We will invite our community partners and make special arrangements for our key faculty and student contributors to be recognized and rewarded. We will work to establish a recognizable Brand for CDSAIT.

5. Develop *cross-disciplinary Certificate of Completion programs* in Data Science, Analytics, and Information Technology.

   The Center will identify the appropriate academic components from existing programs and/or Bootcamp workshops. These certificate programs will address the training needs of our industry partners and offer enhanced learning opportunities for our students.

   "Bootcamp" workshops are short-term, high-intensity educational opportunities that squarely address the needs of our community partners. These workshops are envisaged to be designed and delivered by our faculty colleagues, senior Ph.D. students, post-doctoral fellows and industry partners. These workshops are also expected to be self-sufficient in funding, i.e., a majority of the costs will be defrayed by fees collected from external participants. We expect UA will provide the space to conduct these sessions and in each session several (up to 25%) seats will be offered free of charge to our

students and faculty for at least the first five years of operation of the center. In later years, the costs to our faculty and students will be deeply discounted.

6. *Clarify Programs, Inform Career Placement* and *Co-op/Internship Services* on Campus.

   The Center will help clarify to employers and potential students how our programs fit together and where to go to find graduates with specific profiles. It will work closely with UA Career Service Center, Co-op/Internship offices in different colleges, and the Human Resources staff of our community partners to: (1) share the needs of our community partners, and (2) mentor UA students into positions related to data science, analytics and information technology. *Appendix Three examines these needs in greater detail.*

7. Enhance Experiential Learning

   The Center will mediate between 1) companies and organizations that have data science, analytics, and related information technology problems and 2) UA resources at the Center, faculty, and students who can work on solving them. These projects will enhance and go beyond traditional classroom and capstone project experiences by engaging students and professors in the solution of real-world problems side-by-side with industry practitioners.

IV. Proposed Long-term Goals (two to five years and beyond)

1. *Offer* 30 *scholarships* annually to UA *undergraduate* students and 15 scholarships to UA *graduate students,* and provide support for five post-doctoral fellows in the area of data science, analytics and information technology.
2. Engage employers and industry experts to *enhance the quality and relevance* of academic programs at UA in the broad areas of data science, analytics, and information technology.
3. Help faculty and program coordinators to *integrate* data science, analytics, visualization and information technology *education modules* in meaningful ways into existing curricula across multiple disciplines.
4. Assemble *cross-disciplinary research teams* that can successfully pursue competitive external research funding from federal agencies and industry for highly visible center projects.
5. Establish and maintain a leadership position for UA through seminars, industry and institute partnerships, and research output.

6. Develop distinct brand recognition for UA programs related to Data Science, Analytics, and Information Technology.

V. Organizational Structure and Governance

Executive Director

CDSAIT will be administered by the Executive Director who will report to the Office of Academic Affairs. Initial staffing will include an assistant director, and an administrative assistant. Future staffing growth will be commensurate with program growth and funding from external sources.

Membership & Membership Dues

The primary purpose of CDSAIT is to address the needs of our community partners. Regional, National and International companies will be invited to join CDSAIT as members. Membership will be stratified into three levels at the following rates and minimum durations of commitment. These numbers reflect our current thinking and is likely to change based on the feedback we receive from the initial meetings with our Community Partners.

COMPANY SIZE	Target Fee/YEAR	MINIMUM COMMITMENT
• Large Companies	$50,000	5 years
• Mid-size Companies	$25,000	3 years
• Small Companies	$5,000	1 year

We anticipate that CDSAIT will have about three to five large companies, about eight to ten mid-size companies and about twenty small companies as members. Membership dues will be used to support the student scholarships and strategic projects approved by the advisory board.

Major Activities

The major activities in this center are expected to be educational certificates and workshops (Bootcamp courses), seminars, consulting projects that provide an opportunity for our faculty and students to work on real-world problems, funded research activities, and developing educational modules that can be integrated into curricula in our programs at UA.

External Advisory Board

An advisory board comprising representatives from the paying members of the center will help guide the strategic operations of the Center. The Faculty Steering Committee will nominate two members to this board. The director will recruit board members and will develop mechanisms to interact with them on a regular schedule.

Faculty Steering Committee

A multidisciplinary group of faculty will be elected to guide the academic decisions of the Center. Faculty will elect members for the Faculty Steering Committee from departments that have significant research and/or education interests in the areas of data science, analytics and information technology. Some of the departments with such interests may be Business & Information Technology, Electrical and Computer Engineering, Computer Science, Economics, Management, Marketing, and Statistics.

Relationship with Other Centers

CDSAIT should maintain collaborative/synergistic relationships with other Centers on campus related to Data Science, Analytics and Information Technology. *Appendix Four outlines a proposed relationship with the Center for Information Technology and E-Business (CITE) in the CBA.*

VI. Resource Requirements

Physical Resources

Administrative offices for the Center will initially be located in Buchtel Hall. It is anticipated that, as Center operations grow, additional space will be needed. Funding for any necessary renovations will be part of the strategic initiative investments. Existing campus resources such as rooms in the student union or in one of the academic buildings will be used as needed to organize the Center activities and events. We anticipate that after three years of operations, the Center will defray the costs for the use of such facilities.

Financial Resources

Initial financial resources have been allocated from the President's office.

1. The salary for the director will be $295,000 per year (not including fringe benefits).

2. A Senior Administrative Assistant and an Assistant Director/Program Manager will be hired to assist the Director at an estimated cost (not including fringe benefits) of $185,000 per year
3. A one-time operating budget of $250,000 will be allocated to the Center to cover non-personnel costs such as scholarships, travel, and hospitality.

Additional resources such as funding for student scholarships and revenue sharing for external funds are under discussion. The Center anticipates generating between $450,000 to $600,000 annually through membership dues and additional funds from external sources. These funds will be used to support student scholarships and post-doctoral fellows to support center activities. These funds may also be used to offer summer support to faculty for tactical and strategic activities related to CDSAIT. The Center also anticipates successfully pursuing and winning competitive research funds from federal and state agencies, foundations, and industry to support its activities in the broad areas of data science, analytics and information technology.

VII. Implementation Timeline

As already noted, the operational details of CDSAIT will be discussed, synthesized and refined during the first years of operation by fully engaging our stakeholders. Thus, a detailed timeline for all the activities of the center will be developed through such a discussion. In our current thinking, we expect that the short-term goals will be accomplished as follows:

Year 1 Accomplish the following short-term goals (STG):

STG-1 *Identify Key Competencies at UA (page 4)*
STG-2 *Understand needs of Community Partners (page 5)*
STG-6 *Clarify Programs, Inform Career Placement (page 6)*
STG-7 *Enhance Experiential Learning (page 6)*

Begin discussing STG-3 *Create Roadmap for CDSAIT (page 5)*

Year 2 Accomplish
STG-3 *Create Roadmap for CDSAIT (page 5)*
STG-4 *Technology Showcase & Branding CDSAIT (page 5)*

Begin discussing STG-5 *Certificate Programs (page 5)*

VIII. Assessment

This proposal seeks approval for the structural elements of CDSAIT and commits to a process to develop the operational details by fully engaging our stakeholders. Consequently, we will assess our performance for the first year by evaluating how well we achieve our short-term goals. We will use quantifiable metrics such as the number of external companies engaged, number of faculty engaged, number of students engaged, number of seminars/workshops conducted successfully, etc. As a part of the activities of the first year, we will develop an assessment plan for CDSAIT that will accurately reflect the activities, impact and anticipated growth of the center.

Appendix One: The Need for an Intellectual Commons Centered around Data Science

What do we know as truths about the way universities are evolving in the 21st Century?

More and more disciplines are becoming highly dependent on information technology, mathematical and analytical approaches, and—to a certain extent—big data as the foundation of cutting edge research and development. Professors, instructors, graduate students, and even undergraduate students all have opportunities to acquire data from the environment and society; to take measurements with faster and more ubiquitous sensing devices; to extract data from social applications and networks; to build and re-design products and systems that embed forms of intelligence; and to use this confluence of inexpensive technology, data storage, networking, and algorithms in myriad unimagined ways to transform society.

There is no doubt that humanity faces massive, wicked problems such as huge population growth; food and water shortages; devastating climate changes; and pervasive depletion and corruption of natural resources. Established businesses face start-ups that are grounded in new data-pervasive models that threaten to rapidly undermine their revenue streams. New businesses are racing ahead with “apps” and other products and services—but the consequences of their use may be poorly understood. Who will benefit and who will lose when self-driving vehicles start to overtake the trucking industry?

Information Technology has matured from its early days – when it provided key strategic advantages to corporations – to its current state where it is now an essential service for

conducting business.[3] Portions of IT may be considered commodities, but strategic advantages can still be achieved. Why? Information technology is programmable, so the things that it can do are limited only by the imagination of those doing the programming. One can argue that the massive systems of interacting computers in networks (think "The Internet of Things") are already functioning beyond the parameters of what any single human being can fully understand. Even what would appear to be a well-duplicated technology such as ERP (Enterprise Resource Planning) can be used poorly by some firms and well by others—and every instantiation of the technology is different.[4] Even as the "cloud" provides more and more resources on a plug-in basis, scientists, engineers, entrepreneurs and other users will continue to find innovative ways to put all the pieces together.

Data Science, Analytics, and Information Technology represent a foundational expression of human intelligence. They have to be one of the main bedrocks for the next decades of fundamental and applied research, development, and exploitation. Each next generation of researchers is finding novel and unanticipated ways to link together these technologies in new and transformative ways.[5] We do not have to accept the wildest predictions—(for example, that by 2030, humans and computers will interface biologically through "nanobots," (tiny robots of DNA strands) making humans themselves "artificially intelligent" (Ray Kurtweil, Google Chief Scientist))—in order to concur that data science, analytics, and information technology together are revolutionary.[6] When astronomers brought the Hubble telescope online, vast new horizons were revealed that have led to fundamental changes in our understanding of the Universe. A certain type of blinder was removed. Similarly, big data removes blinders by allowing rapid, comprehensive measurements, thus making it possible to find instructive patterns that were never visible before.

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[3] Carr, N. (2003, May) IT Doesn't Matter. *Harvard Business Review* (81)5, 41-49. This article ignited a firestorm of discussion. For a few reactions, see Smith, H., & Fingar, P. (2003). *IT Doesn't Matter--Business Processes DO A Critical Analysis of Nicholas Carr 's I.T. Article in the Harvard Business Review.* Meghan-Kiffer Press; and Bednarz, A. (2013, May 14). Nick Carr's 'IT Doesn't Matter' still matters. *Network World*. Available at: http://www.networkworld.com/article/2166249/cloud-computing/nick-carr-s--it-doesn-t-matter--still-matters.html on Sept. 12, 2015.

[4] Brynjolfsson, E. & Hitt, L. (2000). Beyond Computation: Information Technology, Organizational Transformation and Business Performance. *Journal of Economic Perspectives*, 14(4), 23-48.

[5] Brynjolfsson, E., & McAfee, A. (2011). *Race Against The Machine: How the Digital Revolution is Accelerating Innovation, Driving Productivity, and Irreversibly Transforming Employment and the Economy*. Digital Frontier Press.

[6] Eugenios, J. (2015, Sept. 13). Ray Kurzweil: Humans will be hybrids by 2030. *CNN Money*. Available at: http://money.cnn.com/2015/06/03/technology/ray-kurzweil-predictions/ on Sept. 13, 2015.

No one doubts that a University that is calling itself "Polytechnic" needs to be a strong player in these technologies. In fact, a Polytechnic university is unimaginable without them. With the advances at other institutions well underway, we may already be facing the possibility that expertise in information technology, data science, and analytics is becoming a strategic necessity in order to remain competitive, rather than a potential source of strategic advantage.

In looking at what we have now, could we conclude that the University is already strong in these areas? Does anyone think this is the case? As an inevitable outgrowth of the divisions into silos/departments for computer engineering, computer science, and information systems (split across an emphasis on business and systems analysts in the College of Business Administration and many infrastructure support roles in CAST)—we have programs that seem to overlap in some ways, confounding students and employers alike about which program is right for them. There are other related programs on campus that need to be involved in the Center. For example, we have a GIS program; geospatial location and maps are a critical part of the emerging national dialog on data science. We have media and communications departments – these also use a lot of information technology, and can derive a lot of value from analytics. Even arts programs are making use of supercomputers.[7] How should the "systems" program in Engineering be involved? What other Centers on campus have related missions? As a knowledge broker, the CDSAIT is in a position to strengthen many parts of the university.

Graduate offerings may be even more embedded in silos. Talks between the CBA and the Statistics Department stalled when it became clear that new programs could not be contemplated in the absence of new resources. Meanwhile, Kent State is in the final stages of the approval of a new Masters in Business Analytics.

If we accept the premise that we are weaker than we need to be in these disciplines, how can we rectify the situation? A Center for Data Science, Analytics and Information Technology (CDSAIT) can play a seminal role in breaking down silos and creating an atmosphere in which these disciplines can flourish at the University. What is the ultimate role of a Center? It is to

[7] For example, Charles Csuri's Advanced Computing Center for the Arts and Design (ACCAD) at Ohio State University.

provide the "opportunity structures"[8] through which stronger intellectual networks are developed amongst faculty, students, and outside players, be they scientists, academics, or business/governmental/NGO professionals. In turn, stronger intellectual networks lead to stronger, deeper collaboration; development of new knowledge; and better application of existing knowledge. Faculty should be able to begin to incorporate leading edge techniques into their research and teaching. Students should receive instruction and training that makes them desirable to cutting edge companies. The University as a whole should benefit in several ways: by attracting new revenue streams, some University infrastructure can be supported; the brand of the University as "Ohio's Polytechic University" will be enhanced; by bringing in real-world problems and helping to develop solutions for them, the reputation of the University as a leading entity that also gives to the Community will be expanded.

HP Analytics in India started a knowledge management program with the slogan "I Share, Therefore I Know."[9] As a clever play on "I think, therefore I am," it helped managers to realize that they rarely can do their jobs by themselves. Sharing what they know and receiving knowledge in return is beneficial both to the individual and to the organization. The Center must design its programs with this reality in mind. The only way that faculty will participate is if they perceive that there is "something in it for them." Faculty want support for graduate students, support for information technology and software, support for travel and other expenses, support for training, support for teaching assistants, teaching load reductions. The Center must raise funds to enhance collaborations across silos and incentivize the creation of new inter-disciplinary courses to improve student learning outcomes and address the workforce training needs of our community partners. The Center must also attract high-quality students to enroll in our programs and dynamic researchers who can be competitive and attract research grants from the industry, federal and state funding programs.

The success of the Center hinges on its ability to create strong and meaningful partnerships with industry. There is a big and unmet demand for data sciences and IT professionals being experienced by industry both nationally and locally in Northeast Ohio. The University is in an excellent position to help meet that need by providing not only highly skilled graduates, but also highly skilled students and faculty to work on both short- and long-term problems. These relationships will drive direct industry guidance and support for our programs, strengthen and

[8] Von Krogh, G. (2002). The communal resource and information systems. *Journal of Strategic Information Systems*, 11, 85-107.
[9] Teo, S. H. T., Nishant, R., Goh, M., & Agarwal, S. (2011). Leveraging Collaborative Technologies to Build a Knowledge Sharing Culture at HP Analytics. *MIS Quarterly Executive*, 10:1, 1-18.

forge new relationships with leading businesses, provide a strong source of faculty and student funding through fee-based services and grants, and give students and faculty tremendous exposure to practical unsolved problems in industry leading to excellent employment opportunities for our graduates and new avenues of research for our faculty. Companies will have access to highly skilled experts to help solve their top problems and a great source of candidates to hire. The University will be able to secure funding and grants through this work, gain a reputation as a leader in this emerging space and provide students and faculty with invaluable real world experiences and opportunities.

With this Center, the University has a tremendous opportunity to exhibit its thought leadership in an area that is in great demand, great need and here to stay. CDSAIT will help promote the experiential learning theme that is central to making The University of Akron distinctive.

Appendix Two: Demand for Graduates with This Knowledge and These Skill Sets

The broad fields of data science, analytics and information technology are highly related and growing rapidly. It is becoming possible to deploy pervasive analytics because of advances in data science and information technology, so any initiative about analytics has to include pieces of data science and information technology.

This growth is accelerating, propelled by Big Data and our ever growing ability to measure, collect, store and analyze multiple forms of data at ever greater speeds. The inexorable move to mobility, cloud computing, and myriad connected sensors and devices, only accelerates the need for data science and information technology graduates. Today, we have more connected devices than people; we are on our way to 5 billion connected people and 50 billion connected devices by 2020.[10] Global mobile data traffic alone saw 69% growth in 2014 to 2.5 Exabytes/month.[11]

"Swarms" of sensors and intelligent devices may lead to a world by 2025 in which there are a trillion connected devices. This could lead to qualitative changes in the way humans interact

[10] Chambers, J. (2014, Jan. 15). Are you ready for the Internet of everything? *World Economic Forum Agenda*. Available at: https://agenda.weforum.org/2014/01/are-you-ready-for-the-internet-of-everything/

[11] Cisco, Inc. (2015, Feb. 3). Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update 2014–2019 White Paper. Available at: http://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/white_paper_c11-520862.html

with their environment, including the possibility of devices embedded within humans.[12] If we think there are already pervasive opportunities for data collection, processing, application of analytical algorithms, decision-making offloaded to machines, and so forth—just imagine a world with orders of magnitude more connected devices and the need to analyze the data they produce.

These changes are having a significant impact throughout society, and are creating new businesses and services. The result of these changes is a growing demand for highly skilled data scientists and IT professionals to manage and derive insights from data, while opening up new research areas in topics that range from deep learning and predictive modeling to data agility and data lakes.[13] Leading global technology companies like Google, LinkedIn, and Facebook, as well as multiple regional organizations are eagerly hiring people in these disciplines from a limited supply pool. A 2011 McKinsey report notes that data is now everywhere and relevant to leaders across every sector. They note that the absence of talent needed to make the most of this data is a significant and pressing challenge: "By 2018, the United States alone could face a shortage of 140,000 to 190,000 people with deep analytical skills as well as 1.5 million managers and analysts with the know-how to use the analysis of big data to make effective decisions."[14]

Today, for many technology firms, data *is* the product. As we move forward, data will likely become a key corporate asset for most organizations, not just those focused on technology. We saw an example of this in early 2015 when the sale of Radio Shack's assets included its data for 67 million customers as part of a $26 million deal.[15] When gaming giant Caesar's went into bankruptcy in 2015, the "most valuable asset in the bitter bankruptcy feud … [was the]

[12] Gaudin, S. (2015, Sep. 11) Get Ready to live in a trillion device world. *Computerworld*. Available at: http://www.computerworld.com/article/2983155/internet-of-things/get-ready-to-live-in-a-trillion-device-world.html on Sept. 12, 2015.
[13] Olavsrud, T. (2014, Dec. 22). 5 Big Data Technology Predictions for 2015. *CIO*. Available at: http://www.cio.com/article/2862014/big-data/5-big-data-technology-predictions-for-2015.html
[14] Manyika, J., Chui, M., Brown, B., Bughin, J., Dobbs, R., Roxburgh, C., & Byers, A. H. (2011). Big data: The next frontier for innovation, competition, and productivity. McKinsey Global Institute. Available at: http://www.mckinsey.com/insights/business_technology/big_data_the_next_frontier_for_innovation
[15] McCarty, D. (2015, May 20). RadioShack Sells Customer Data After Settling With States. *BloombergBusiness*. Available at: http://www.bloomberg.com/news/articles/2015-05-20/radioshack-receives-approval-to-sell-name-to-standard-general.

company's big-data customer loyalty program, valued at $1 billion by creditors."[16] Gartner's 2015 top strategic IT trends lists pervasive analytics, cloud/client architecture and Web scale IT among its top 10 trends.[17]

Universities across the country are taking notice of the tremendous and unmet need for data science and information technology and have either recently added or are in the process of adding programs to address the rising demand. Recent programs and those underway include Centers, certifications, specializations, undergraduate and graduate degrees. These programs are varied, some focused on a single area such as business analytics while others are broader in scope. Most programs provide students with classic classroom and capstone experiences but lack the really strong experiential learning that is possible and particularly critical for these fields.

MITSloan Management Review, in conjunction with various partners, has put published surveys in 2011-2015 that chronicle the growing demand for analytics-savvy graduates. The most recent report recounts:[18]

> "Hal Varian, chief economist at Google, describes the competition for skilled data workers: *"So now you've got the data available in some data warehouse configuration, and then the question is, how do I access it? How do I input it in decisions? How do I utilize that data effectively? That's where people are now. They say, 'Let's go hire a data scientist or some statisticians. Let's go hire some data engineers.' And they find out everybody else is trying to hire the same people."* [Emp. original]

> "Recognizing these demands, colleges and universities are creating master's programs to help individuals develop analytical skills. More than 70 master's degree

[16] O'Keeffe, K. (2015, Mar. 19). Real Prize in Caesars Fight: Data on Players. *The Wall Street Journal*. Accessed at: http://www.wsj.com/articles/in-caesars-fight-data-on-players-is-real-prize-1426800166 on Sept. 12, 2015.

[17] High, P. (2015, April 8). Top 10 Strategic IT Trends For 2015. *Forbes*. Available at: http://www.forbes.com/sites/peterhigh/2014/10/07/gartner-top-10-strategic-it-trends-for-2015/3/

[18] Ransbotham, S., Kiron, D., & Prentice, P.K. (2015, Spring). The Talent Dividend: Analytics talent is driving competitive advantage at data-oriented companies. MITSloan ManagementReview Research Report. Available at: http://sloanreview.mit.edu/projects/analytics-talent-dividend/ on Sept. 12, 2015. The MITSloan site about analytics contains a wealth of information relevant to this report. See http://sloanreview.mit.edu/big-ideas/data-analytics/.

> programs in analytics and data science now exist, and the number has grown rapidly since 2007. North Carolina State University is home to one of the earliest programs. Program director Michael Rappa says the program just expanded to 80 students and will have between 120 and 150 students per class in the next two years.
>
> "The increasing demand for analytics talent is already having an effect on graduates from Rappa's NC State program, who each received three and a half offers, on average, in 2014. The highly competitive marketplace allows newly minted analytics talent to be selective. In the battle for analytical resources, traditional companies may find themselves at a recruiting disadvantage relative to startups or companies founded by digital natives using new technologies to innovate and to disrupt stagnant industries.
>
> "Until supply meets demand, many organizations will continue to find it difficult to attract and retain the talent they need to build competitive advantage. In fact, four in ten survey respondents report difficulty attracting people with analytical skills, and an equal percent struggle to retain them. Surprisingly, many companies have yet to develop an effective talent strategy; they are not doing anything different to attract new data workers. Only one in five organizations has changed its approach to attracting and retaining analytics talent.

While the national needs for these skills are well known and documented, the regional needs are also growing. Kent State University is in the final stages of getting approval for a Masters in Science in Business Analytics (MSBA), to be housed in their College of Business, but drawing from various relevant departments across campus. KSU's report titled "Establishment of a Master of Science in Business Analytics (MSBA)" and submitted to the Ohio Board of Regents in 2015, contains both citations of evidence similar to what we have cited above, and original survey research polling business leaders in this area about their need for analytics graduates. The proposal states:

> Additionally, in our own survey of Northeast Ohio businesses (respondents = 29), the respondents indicated that the cumulative increase in the number of analytics employees within their organizations will be 97.4% over the next three years. In the intermediate to long-term time horizons 48% predict that employment opportunities will "increase dramatically", 48% predict it will "increase moderately", and 4% predict it will remain the same, while 0% believe the employment opportunities will contract (p. 20).

Appendix E of the KSU report reproduces all feedback received on the Program Development Plan from RACGS Institutions (10 in all), along with KSU responses. None of these institutions are making the argument that demand for analytics graduates does not exist as documented by KSU. Ohio State reports that they have plans on launching an analytics graduate program "shortly." Cleveland State University reports that they are also developing an MS in Business Analytics program. Placement from programs such as these are high, as are salaries. The authors write: "according to the University of Cincinnati website, 95% of graduates from their program are employed within three months of graduation. Also, North Carolina State University reported that more than 93% of their graduates receive job offers upon graduation, with some of them receiving multiple offers. The average salaries reported by these institutions are $78,419 and $95,700, respectively"[19] (KSU Report Appendix E, pg. 8).

This is the backdrop against which the establishment of A UA Center for Data Science, Analytics, and Information Technology has been proposed. One outgrowth of the Center may be new, formally approved degree programs. A list of Aspirant programs is included in Table 1. We emphasize that it is premature to say that the Center will necessarily result in new degree programs. In the short term, it is more likely that curriculum-related results will be rationalization and strengthening of current offerings, certificate programs, boot camps, etc.

Given that many universities around us are embarking on Analytics programs, shouldn't we? In some sense, it is easy to field a Master's in Business Analytics program and say that the University is meeting the challenge of data science, analytics, and IT. This is an obvious route. Everyone can then breathe a sigh of relief and say "see, we have a presence in analytics." This is not to say that having such a program is not an important asset for a University. Many are in existence, and even more are being contemplated at this moment. If you accept the McKinsey forecast cited above, many more will be needed in the next few years.

Table 1: Examples of Analytics Programs/Initiatives that Might Serve as Analogs for What We May Do

Case	**Data Science Major** (School of Engineering) – **Microsoft COO (Herbold) donated $2.6M** for program development.

[19] Request for Approval Submitted by Kent State University: Establishment of a Master of Science in Business Analytics (MSBA), 2015 (Unpublished document), Appendix E.

Cincinnati	**Center for Business Analytics** – Department of Business Analytics and Information Systems. Company memberships available. MS and graduate certificate in Data Science/ Data Analytics. Multi -led by Business.
Georgia Tech	**MS Analytics** – College of Computing, Engineering and Business collaborative effort
Iowa	**Business Analytics and Information Systems** – undergraduate and graduate program. Six Sigma certification.
Miami	**Center for Analytics and Data Science (Engineering and Computing?)** Received $100K funding in April 2015. Analytics as a Co-Major at undergraduate level.
NC State	**Institute for Advanced Analytics** – Original funding from SAS. Premier Masters (cohort) program.
Ohio State	Hiring as many as 40-50 faculty for **Undergraduate program in Data Analytics**. Jointly administered by the Departments of Computer Science and Engineering, Statistics, Arts and Sciences and Fisher College of Business.
Temple	**Center for Statistical Analysis** – Fox School of Business – BBA and MS in Statistics and Actuarial Science
Tennessee	**Business Analytics (Haslam School of Business)** – BS/MS programs. Some funding from Company Forum members.

It is much harder to transform a university so that it is grounded in data science, analytics, and information technology. But that may be exactly what a “Polytechnic” University requires. What it means in practice is more faculty that can add Data Science, Analytics, and Information Technology elements into their research and their courses; more PhD students who use these techniques as part of their research methodologies; more graduate and undergraduate students who can present credentials to prospective employers that include experience with Data Science, Analytics, and Information Technology elements.

The University could simply invest in founding a new Analytics Master's program that crosses several disciplines (computer science, statistics, business). Or the University can invest in a mechanism such as CDSAIT and attempt something considerably more transformative.

Appendix Three: Making Our IT Programs Understandable to Ourselves and to Our Customers

One rationale for CDSAIT is that the University offers a number of programs related to information technology and analytics, but that employers and potential students all have a hard time understanding how they differ. Employers want to know where they can find graduates with the profiles they need, and students may reject the majors all together because of a lack of understanding about any specific field. Some programs have a "STEM" designation and others do not, also leading to a perhaps artificial sorting of students. Though probably incomplete, Table 2 shows many of the concerned programs. A major task of the CDSAIT should be to serve as a central hub of information about these programs. There are many subtasks that go along with this, such as: producing coherent marketing materials, setting up and participating in job fairs, providing guidance to prospective students, etc. For all of the high-minded goals we have been outlining in this proposal, a very real and concrete one remains increasing enrollment.

Table 2: Spectrum of IT and Analytics-related Programs at the University of Akron

<table>
<tr><td>PRODUCER</td><td colspan="2"></td><td>CONSUMER</td></tr>
<tr><td colspan="2"></td><td colspan="2">Specific fields in which there is also a tradition of developing algorithms and advancing field-specific variants of techniques. Examples: Health Care, Economics, Marketing, Production/Operations Management, Supply Chain, Finance, Accounting</td></tr>
<tr><td></td><td colspan="2">Information Systems – business and systems analysts that bring together consumer-side needs and solutions, understanding business/application area context, managing teams (CBA)</td><td></td></tr>
<tr><td></td><td colspan="2">Business Information Systems – specific support roles that support and in some cases overlap with IS. Networking and security are two major emphases (CAST)</td><td></td></tr>
<tr><td colspan="2">Statistics – examples: new techniques, more efficient algorithms, expanded</td><td colspan="2"></td></tr>
</table>

understanding and interpretations **(BCAS)**	
Computer Science – examples: new database architectures, new visualization techniques, coping with massive amounts of data, privacy and security **(BCAS)**	
Computer Engineering – examples: embedded analytics on hardware chips, new authentication systems, societal scale decision support, mining algorithms **(College of Engineering)**	

Today many employers including some of the largest regional employers such as Smuckers find our distributed program offerings confusing as they try to get help addressing their business problems or identify graduates to fill their hiring needs. While we have not collected systematic evidence of this concern from employers for this report, we have had anecdotal reports along these lines from a variety of firms over many years.

A key role for the Center will be to act as a single point of contact for all corporate data sciences and information technology needs. Through the Center, companies will be able to identify the right students, faculty and graduates to meet their needs. They will have direct and targeted access to leading research in a multitude of areas that are of direct relevance to their work. Colleges, departments and faculty will be able to rely on the Center to highlight their programs and research, receive feedback from industry on needs and trends, and provide them with direct access to some of our biggest employers for their students and faculty.

Appendix Four: The Relationship of CDSAIT and CITE

The Center for Information Technology and E-Business (CITE) was started informally in 2000-2001, and received formal approval in 2005. Over the past 15 years, CITE has attracted a total of more than 50 companies as members of the Advisory Board. Each Advisory Board member currently contributes $1500 per year. The main uses for these funds include: scholarships to the CBA Undergraduate major (Management/Information Systems), Graduate Assistantships, support for the Students for Information Technology (SITE) group, a small number of summer faculty research grants, and a few networking events. CITE has led more than 60 sessions of the IT Executive Exchange (ITEE), bringing together CIOs and other industry leaders to discuss topics of critical interest. In recent years, these sessions have included a number of topics related to Data Science and Analytics, including Business Analytics and Intelligence, Cloud Computing, The

Internet of Things, and various Security topics.[20] Depending on the topic, the participants in these 2-hour sessions varies widely. We believe that the relationships forged through these meetings and the knowledge exchanged has been an invaluable contribution to the regional IT industry.[21]

CITE's Board meets twice per year, with more frequent meetings of an Executive Committee. CITE board members have mentored students, done mock interviews, participated in a summer IT Careers Camp that CITE ran for High School students for three summers, and have opened their facilities for IT Shadow Days. They have served on committees to review curriculum and help recruit new students to the CBA IS major. CITE's director, Dr. Bindiginavale Vijayaraman, receives a one-course load reduction for serving in this capacity. CITE has two Graduate Assistants assigned to it for 20-hours/week each, which is the sum total of the administrative support it receives. The many programs that CITE has run over the past 15 years have brought a lot of benefit to the CBA, and nothing that this proposal does should diminish those benefits.

One option that our committee has discussed is adopting CITE as the "starter version" of CDSAIT. Under this thinking, the Information Technology focus of CDSAIT would be left to CITE for a duration of time. The resources that CITE has acquired would be left alone for now. The focus of CDSAIT activities could be on the Data Sciences and Analytics parts and we would revisit the information technology issues down the road. We note, however, that this route would immediately leave CITE without the resources it would need to expand its programs to other parts of the campus. Just getting other units to come to CITE events would not achieve the objectives of CDSAIT.

Rather, CITE and CDSAIT should have a synergistic relationship that enhances the Academic Leadership, Student Outcomes and Community Engagement at UA in the areas of Data Science, Analytics and Information Technology. CDSAIT could design programs along the CITE model

[20] In June, 2015, the CDSAIT director Mario Garzia co-led a session on the need for Data Scientists and how he set up this function in Microsoft that attracted so much interest that the meeting had to be moved to a larger venue.
[21] In the early years, CITE also ran half-day programs related to E-Business that attracted sizable paying participation from the community.

such as "Analytics Executive Exchange," "Computer Science Executive Exchange," or "Statistics Executive Exchange" to bring together practitioners and academics so each can inform the other about what they are doing, what problems they face, etc.

Appendix C

Faculty Senate Athletic Committee Report 9/16/15

John B. Nicholas, Chair

The Faculty Senate Athletic Committee met on September 16, 2015.
John Nicholas was elected as Chair of the committee. A discussion ensued about a possible co-chair but the committee decided that a single chair was best for this committee. Matt Juravich agreed to become an unofficial Chair-in-training.

A discussion about the hiring process of the new Athletic Director ensued. Nicholas was on the search committee and he shared with the committee that new AD Larry Williams was the first choice of the search committee. Larry Williams arrived to the meeting and was formerly introduced by Chair Nicholas. A very open discussion with AD Williams continued.

The continuation of the Head Injury sub-committee was discussed and it was agreed that the committee should continue for this academic year. The leadership of that committee will be determined at the next meeting.

The Membership of the Faculty Senate to the Coalition on Intercollegiate Athletics (COIA) was discussed. This is the 2nd year of the two year trial membership. The committee asked to be included in all of the updates from COIA so an informed decision can be made about continuing membership.

Finally, a discussion ensued to clarify the purpose and reach of the committee. Including involvement with the determination of the removal of sports programs. This will be an ongoing discussion throughout the year to determine if the mission of the committee should be updated.