

Ohio Board of Regents Meeting Minutes
Kent State University
The Center for Philanthropy and Alumni Engagement
350 S. Lincoln Street, Room 103
Kent, OH 44242

September 15, 2016

I. Welcome and Call to Order

Chair Vinod K. Gupta called the September 15, 2016, Ohio Board of Regents (BOR) Meeting to order and thanked Dr. Beverly Warren, President of Kent State University (KSU) for hosting the meeting. He also thanked the KSU and the Ohio Department of Higher Education (ODHE) staff for their assistance with the coordination of the meeting as well.

II. Roll Call

Chair Gupta asked that the roll call be read by Secretary Virginia M. Lindseth. Secretary Lindseth stated, "the record reflects that notice of this meeting was given in accordance with provisions of the Ohio Board of Regents' Ohio Administrative Code §3333-1-14, which rule itself was adopted in accordance with Section 121.22(F) of the Ohio Revised Code and of the State Administrative Procedure Act." Secretary Lindseth called the roll. Those present were:

Vinod K. Gupta	Elizabeth P. Kessler
Thomas M. Humphries	Virginia M. Lindseth
Kurt A. Kaufman	

Secretary Lindseth declared there was a quorum present.

III. Approval of Minutes

Chair Gupta asked if there were any additions or corrections to the draft May 12, 2016, BOR minutes. There being none, Regent Kessler made a motion to approve the May 12, 2016, minutes as drafted and the motion was seconded by Regent Kaufman. All voting members of the board voted in favor of the motion approving the minutes as submitted from May 12, 2016.

IV. Institution Welcome and Presentation - Kent State University

Chair Gupta introduced Dr. Beverly Warren, President of KSU by way of reading her biography. He thanked her again for hosting the BOR and said that the student's involvement in their program was exceptional. Dr. Warren thanked the BOR and ODHE staff for visiting KSU and said that KSU's students are their best ambassadors.

Dr. Warren presented a PowerPoint presentation "President's Report" which can be found as Attachment #1. She began her presentation by saying that they are truly honored to have the BOR and ODHE on KSU's campus and to have them experience a part of the excitement that they can feel on their campus. She said it was a special opportunity to host them because they feel with them they are partners in really advancing higher education as a solution partner for the state's economic development and for the quality of life in the State of Ohio. She said it is so important for them to deliver this message.

Dr. Warren said that one of the things that took place early on in her tenure is a 'six-month listening tour' and one of the things that resulted was "A Strategic Road Map to a Distinctive Kent State". She said this guides their actions, work, and strategic thinking as they chart the court for KSU over a six year period. She said this document was a grassroots effort by their community with over 5,000 people offering input. She shared a video that provided the 'story' of KSU that was launched at the same time as their strategic vision. She said every time she sees the video she thinks of the student who is now one of their student leaders in their undergraduate student government and she shared her story of foster care and perseverance. She said a faculty member shared during the listening tour that they accept students for who they are and where they are but they refuse to let them stay there. She said they accept students with open arms and push them out with an open mind.

Dr. Warren said it is in that effort that the Kent State Promise means in a reimagined public research university is that academic rigor, access, excellence, and affordability do not simply co-exist at a university; they actually merge to create a distinctive environment where students come to them with the hope and promise of opportunity. As it relates to academic rigor and access, she said they are not asking that the bar be lowered; they are asking that the supports be offered so that every student has the chance to leap beyond expectations. She said on seven of their campuses they accept students with minimal academic credentials but with the hope and dream of making a difference in their lives and lives of their families.

Dr. Warren continued and said that each one of KSU's eight campuses is unique. She said that they serve a broad array of communities that need them to be their partners. She said one of the results of the KSU Promise is an increase in the number of degrees awarded; in this last year they awarded over 9,500 degrees. She said this is a record for KSU and they are a leader in the State of Ohio in terms of degree production. She said that studies have shown that if students are engaged in the life of the university they are more likely to persist; so they identify what those high impact experiences are, such as participating in undergraduate student government. She said for the first time this year they will have student government on all eight campuses.

Dr. Warren said that the KSU Promise also goes to reducing the economic barriers to a college education. She said that they have offered nearly \$53M in scholarships for the class of 2019; and \$59M for the class of 2020. She said they are investing in significant ways to ensure that students can attend and that the financial barrier is reduced as much as they can as a university. She said as they are aware KSU has reduced the credit hour threshold which has resulted in a savings of \$4.7M for students. She said that students can attend a regional campus at 40% less than the Kent Campus. She also said they have a "15/30/48" Plan that students are aware of through advising, social media etc. and it keeps students focused. She said that if they take 15 credit hours per semester, complete thirty semester hours per year, they will graduate in 48 months.

Dr. Warren said as a research university KSU tries to lift themselves up as a research enterprise and try to do their part to be the creator of new ideas. She said that this not only advances the research agenda but it contributes to the economic development of the State of Ohio. With that, she said they are developing five centers of research distinction and this year they are launching a Research Institute in Brain Health; what they think is their greatest strength. She shared national statistics in the areas of brain studies and how certain conditions can be avoided. She made remarks about the KSU Liquid Crystal Institute and said that this institute is trying to identify where that technology and science can move now. She said they are exploring efforts in 'wearable technology' and shared one of those advancements, a mood sock for diabetic individuals.

Dr. Warren continued and began to discuss the 21st Century facility that is required to attract faculty and students. She shared a video that was an aerial view of the KSU main campuses profound growth most recently. She said they also have many examples of this on their regional campuses as well. She said this growth was possible through federal, state and city partnerships and the issuance of bonds.

Dr. Warren said as they look at the completion agenda that has been aggressively set forth by Governor Kasich; what can they do to do their part in the agenda – they believe they are doing that. She spoke about KSU's '85/65 Plan' that outlines by the end of their five year strategic roadmap their goal is to be at 85% first to second year retention and at a 65% graduation rate. She said this would put KSU in the top tier of institutions of their size in their sector in the completion agenda. She said they are focused on completion and if they realize their plan this will result in an additional 500-600 Bachelor's Degrees every year through 2021. She said they are also focused on closing the achievement gap through various programs at KSU as well.

Dr. Warren concluded by going back to KSU's heart, soul and purpose and that is they want their student's to realize that matching mission and purpose in life is just as important as matching a major to what they want to achieve. She said a life of meaning is important; if you are grounded in purpose and grounded in well prepared skills you can be successful in your life. She said they ask KSU students to find their passion, match it with a major and they will help them find their best self not only at KSU but also after graduation when they go off to better society. She finished by sharing a video of Tessa Reeves, a 2013 KSU Fashion Graduate who went after

her passion by starting a local company, Neighbors Apparel. She said that was the KSU story. She thanked them for listening, for being on the campus and engaging with their community. She said she hopes it has been a good experience.

Chancellor Carey said he picked up a copy of the *Kent Stater* and he congratulated Dr. Warren. He said KSU's enrollment and freshman retention rate are at an all-time high. He said their visit at KSU has been great and he thanked her very much. Dr. Warren said she appreciated them taking the time to visit the universities that they serve; she thanked them again for their time spent at KSU.

Chair Gupta thanked Dr. Warren for the passion and drive that she brings to KSU. He made comments about research and innovation and said that KSU is the perfect environment and location for advancing these areas. He asked how KSU was going to take advantage of the opportunities that he believed that they had. Dr. Warren replied that over the last decade they have been putting infrastructure in place to make a better tomorrow and while they were doing that they did not invest intellectually or financially in their research/commercialization agenda. She said that now she has the opportunity to take this great infrastructure to now see what they can put together as a university. She said she is convinced in the 21st Century they have to figure out ways to get multidisciplinary partners together; that is why they are creating the five centers.

Secretary Lindseth asked what her outlook was on competency-based education (CBE), the topic of this year's Condition Report. Dr. Warren responded that KSU has some CBE going on; but they have not done as much in this in this area. They have chosen to focus more on distance learning as an opportunity to advance the completion agenda.

Vice Chair Humphries made comments about Research and Development (R&D) as it relates to advanced degrees and said that the global knowledge base continues to grow in Asia and other parts of the world and North America is flat. He asked for her thoughts on the human capital. Dr. Warren responded that working in collaboration with other institutions is the best response to changing to a better delta on R&D. She said it is very expensive to put the infrastructure together; the consortium of institutions could assist each other with financing and not finance alone. She said they could lift up R&D.

Chair Gupta made comments about the ratio of international students in graduate programs and asked for her thoughts on this. Dr. Warren replied that if they want more domestic students in graduate studies, in STEM fields in particular, this begins in elementary school. She said she would like to see a P-20 partnership model.

Regent Kaufman thanked KSU for their hospitality. He made comments about the KSU Air Traffic Control Program and said that this is a remarkable program that may have opportunities for international students. Dr. Warren replied that this is a suggestion that has not gone unrecognized and with the FAA changes Air traffic Control is a better pipeline.

Secretary Lindseth asked about the 'drop-in' tutoring program. Dr. Warren replied that this is part of the KSU's completion agenda in the different college programs. Charles See, Assistant Deputy Chancellor of ODHE added comments about the organic tutoring that was taking place on KSU's campus that he observed. He said that the faculty told him that most of this was taking place without faculty involvement.

Chair Gupta asked what the BOR could do to assist KSU. Dr. Warren replied that the BOR could partner with them to tell the story more effectively about the great things that are happening in higher education institutions across the state. She said preserving the autonomy of those universities and supporting the unique missions of those universities to contribute to the completion agenda is important. Chair Gupta thanked her for her remarks this morning and all her work on KSU's campus.

V. College Credit Plus Data Update

Chair Gupta called forward Assistant Deputy Chancellor See and Jill Dannemiller, Director, Data Management and Analysis, ODHE and Assistant Deputy Chancellor See, ODHE. They presented a PowerPoint presentation

"College Credit Plus Overview of the 2015-16 Academic Year" which can be found as Attachment #2. Assistant Deputy Chancellor See began remarks on this update by saying that they have talked about the College Credit Plus (CCP) Program at a number of meetings and provided information about how the program was progressing through its first year. He said at this particular time they actually have data specifically on the first year of the program and they are very excited about it.

Assistant Deputy Chancellor See provided background on the history of the CCP program and he said that the General Assembly charged the Chancellor a few years ago to develop recommendations around a more effective dual enrollment model. He said there was a dual enrollment program in place; however it was inconsistent in terms of quality and effectiveness. He said part of the Chancellor's recommendation process involved an extensive outreach process to almost every sector of education to get their thoughts and recommendations on what the program should be. He said they began with goals that they were hoping the CCP Program would achieve and they were: inspire to increase participation across all student demographics; establish transparent and equitable mechanisms of funding; ensure that students were engaged in meaningful coursework with respect to the program; complete, consistent, accessible and meaningful communication to student and parents; and establish a robust data collection systems and performance metrics.

Assistant Deputy Chancellor See said based on these goals the Chancellor established a set of principles to follow as they were developing recommendations for the CCP program and they were the following: Students must be the primary focus of any education policy; Institutions must work collaboratively; and CCP should be structured to ensure access to college-ready students at a minimal cost to families; and other principles.

Assistant Deputy Chancellor See said that the CCP Program was established for college-ready students and students are eligible in 7th through 12th grades. He said as it now stands, students have the opportunity to participate in a wide array of college course offerings. He said there are no costs associated when a student chooses to attend a public institution; however, if a student chooses to attend a private institution, there may be a minimal cost. He said that a student must apply to get admitted and that college-readiness is determined by the individual institution. He said that students can earn up to thirty college credit hours per academic year; this includes the summer term. He said a student can earn a maximum of 120 college credit hours while they are in the CCP Program.

As it relates to CCP Program Evaluation, Assistant Deputy Chancellor See said that they have a CCP Task Force/Advisory Committee that has been formed to develop performance metrics, monitor the CCP program moving forward, and make recommendations for continuous improvement. He said that all of the participating institutions have to report data to the Chancellor and the Superintendent of Public Instruction to assist with formulating the basis for what the next steps are for the program.

Ms. Dannemiller began her portion of the presentation and said she is going to give them an overview of the data that is collected from both public and private institutions. She said they have two different systems that they report data through, one the CCP Portal and the other the Higher Education Information (HEI) system.

Ms. Dannemiller said the data collected were the following: student profile; current academic information; calculations of academic information; learning environments; and financial data. She outlined the sub-data of each of these data categories that were collected and explained that there are calculations they are able to do based on the student's future status and how they matriculate through the public higher education system. She said that they are able to look at the different types of learning environments to see whether the course delivery is on campus, on-line, or at the high school.

Ms. Dannemiller continued the update by outlining some of the information that is required by the annual reporting that is in statute. She said that they have to look at the following: participation both overall and by the disaggregated groups; the types of courses taken; the number of completed courses and their outcomes; the GPA per course; the number of students that were denied funding or denied admission or participation to the CCP program; the cost of textbooks; and instructional fees waived

Ms. Dannemiller began to provide the following data for the 2015-2016 Academic Year. Relative to participation, she said over 52K students (the previous dual enrollment program had approximately 14K participating). She said that students took courses from all of the public institutions (with the exception of Northeast Ohio Medical University) and thirty-five private institutions. She outlined the students by grade level participation as outlined in the presentation and said that a 99% of the CCP students were in high school. She said the CCP students were represented by a 56% female population as compared to the overall state population of 7th through 12th grade students, which is 49%; therefore the female population was over represented.

Ms. Dannemiller then began to discuss the participation of students in the CCP program by racial/ethnic categories as outlined in the presentation. She said that they also did a comparison of the overall state population of 7th through 12th grade students in this category as well to see if they were mirroring the student body in the CCP participation; they have some gaps. She said they do have an unknown category because some of the private institutions did not collect this information from their students in their application. She said they are working towards getting more information. She said they have some work to do to ensure that the diversity of the CCP population mirrors the 7th through 12th grade student population.

Ms. Dannemiller said the institutions have a variety of assessments that they administer to determine if a student is college ready. She said that were hoping that they would use the college remediation free standards based on the report that they released. She said that the presentation provided a snapshot of the most common assessments, ACT and Compass, which are used by institutions. She said the good thing is the average scores for the CCP students for the ACT and Compass Algebra assessment exceeded what they consider remediation free scores. She said the students did not have to meet these remediation free standards to be admitted but the institutions use these for placement and course selection processes.

Relating to courses, Ms. Dannemiller said that the majority of students took three or fewer classes. She said the majority of these courses were in the five main core content areas of English; Social Sciences; Mathematics; Science; and Arts and Humanities. She said most CCP students were taking courses at the general studies level, which is appropriate for first or second year of their college year. As it relates to student performance, she said just over 90% of courses that the students took resulted in college credit being awarded. She discussed the other course outcomes as outlined in the presentation.

Ms. Dannemiller began to outline the GPA data. She outlined the GPA of students by course delivery method as outlined in the presentation. She said a majority of the courses were delivered on the high school campus by a post-secondary instructor that went to the high school campus or a secondary instructor that was qualified to be an adjunct. She said that when looking at the GPA by student; most CCP students have a GPA between 3.00 and 4.00 (on a 4 point scale) across all the courses while they were enrolled as outlined in the presentation.

Ms. Dannemiller said they also conducted a survey to obtain information on program implementation to ensure that compliance was being met and the results were obtained in the following categories as outlined in the presentation: Professional development courses offered to adjunct faculty; Classroom observations conducted; and Off-Campus Adjunct Faculty qualifications - the majority either hold a Master's degree in the discipline being taught or are currently in a Master's Degree program.

Ms. Dannemiller finished her remarks by saying there was an approximate savings of \$111 million in tuition. She said that this is based on the number of credit hours attempted multiplied by the market rate per credit hour that a member of the general public would pay. She said that this is a substantial savings to families that are participating in CCP.

Secretary Kessler asked if the SAT or the PSAT could be used for the assessment. Ms. Dannemiller replied yes, the SAT can be used for the assessment; the presentation just referenced to the more commonly used assessments. Dr. Stephanie Davidson, Vice Chancellor of Academic Affairs, ODHE added that the PSAT could not be used for the assessment.

Vice Chair Humphries asked if there were costs associated with CCP. Assistant Deputy Chancellor See replied that there are no costs, books or fees, associated when a student chooses to attend a public institution, however, if a student chooses to attend a private institution, the student may have a cost, which includes books or fees. He said that these costs are capped by statute.

Secretary Lindseth asked if the ACT was a required test. Vice Chancellor Davidson replied that beginning with the next Academic year all 11th graders will be required to take the ACT or SAT; whichever the school chooses.

Vice Chair Humphries asked if there were gathering data as it relates to cost since there were district concerns about this issue. Assistant Deputy Chancellor See replied that they are gathering this data and they will know the total deduct is from the K-12 system as it relates to the program. He said how this will translate into different policies they do not know yet.

Regent Kaufman asked if there was a maximum amount of credit hours that a student could take per academic year. Assistant Deputy Chancellor See replied yes; a student could take thirty credit hours per academic year and explained the formula.

Chair Gupta asked how many other states had a program that is similar to CCP and where does the State of Ohio rank. Assistant Deputy Chancellor See replied that they do not have that data but many other states have a dual enrollment program. He said that they look to the State of Ohio's progressive program as an example in many instances.

Secretary Lindseth asked about the status of Advanced Placement (AP) as it relates to CCP. Vice Chancellor Davidson replied that as an agency they support both of these options that are available for students and it is the student's choice. She explained the difference between the two programs and said they can peacefully co-exist. Assistant Deputy Chancellor See said this is another area where counseling is very important and that a student may choose one or the other depending on what their future college career objectives are.

VI. P-16 Initiatives Update

Vice Chancellor Davidson mentioned to the BOR that Dr. Rebecca Watts, the former Associate Vice Chancellor of P-16 Initiatives, left yesterday for Wyoming for another wonderful career opportunity to transform teacher education with the University of Wyoming. With that, she called forward Directors in the area that Dr. Watts formally oversaw and introduced Jessica Mercerhill, Director of Academic Quality Assurance, ODHE to provide an Educator Preparation Update; Alexis Collier, Director, Improving Teacher Quality Program, ODHE to provide an overview of the Improving Teacher Quality Program and Leah Dickinson, State Director, GEAR UP, ODHE to provide a Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP) Update. They presented a PowerPoint presentation "P-16 Initiatives Update" which can be found as Attachment #3.

Ms. Mercerhill began her Educator Preparation Update by discussing her responsibilities. She said that the P-16 area served the following populations in their initiatives during the 2015-2016 Academic Year for the public K-12 system in the State of Ohio: 608 Public Districts (188 designated high-needs and provided with specialized programming and services); approximately 1.8M public students; approximately 111K public teachers; and approximately 5,600 educator preparation graduates (initial teacher licensure, principal, superintendent, etc.).

Ms. Mercerhill said that as it relates to Educator Preparation ODHE works with the following on licensure programs: thirteen four-year public institutions; thirty-eight four-year private institutions; six out of state institutions (offer some online and have some regional sites within the State of Ohio); and twenty-one community colleges (that license Pre-K teachers).

Ms. Mercerhill began to discuss Performance Reports and Accountability related to the licensure programs. She said in 2009 the passage of the Ohio Revised Code 333.048 was done as way to ensure sustainability of Race to the Top initiatives related to accountability in teacher education. She said in 2012 a team was brought together to create a metrics system for this reporting standard. She said this team looked at what requirements

should be reported upon in order to start measuring the success of programs. She said these reports are published annually on February 15th.

Ms. Mercerhill said they try to make the metrics as broad as possible so they are able to get the most accurate picture as possible of what is happening in their educator preparation. She discussed the metrics as outlined in the presentation and pointed out the Value-added Data in the K-12 system. She said that each year new sets of teachers and content areas are being added to the value-added system; all of these pieces keep evolving so they are continuing to add them into the reporting system.

Ms. Mercerhill continued by discussing the national accreditation requirement. She said that in the State of Ohio all of their programs must have a national accreditation for teacher education in order to be approved by the State. She said that she is working very closely with the Council for Accreditation of Educator Preparation (CAPE). She said that CAPE is the one national organization that accredits teacher education programs.

Ms. Mercerhill finished her remarks by highlighting an innovative program in the area of teacher education in the State of Ohio. She said that the Deans Compact for Exceptional Children is an organization of Education Deans from across the state whose goal is to improve better educational results for the State of Ohio's K- 12 children. She said as part of this goal, they provide grants to assist institutions create dual license programs and this will help get more teachers in general accessible to the districts to meet the needs of the special needs students.

Ms. Collier provided an overview of the Improving Teacher Quality Program (ITQP). She began her portion of the presentation by acknowledging ODHE staff members that have worked on the ITQP program over the last several years as outlined in the presentation. She began to discuss the history of the ITQP as outlined in the presentation and said in its current form this program has been funded since 2002, under authorization of No Child Left Behind, Elementary and Secondary Education Act; but there are prior initiatives that go back as far as the mid-1980s. She said the purpose is to increase academic achievement of all students by helping high schools and districts to improve teacher quality.

Ms. Collier said that state agencies of education; local agencies of education; and state agencies of higher education are awarded funding on a formula basis. She said the ODHE takes the portion of their funding to deliver and offer a competitive grants program to colleges and universities; they in turn develop professional development programs that must meet certain criteria. She said there is an annual RFP process and over the last several years they have consistently focused in the STEM areas.

Ms. Collier said when ITQP was reauthorized in December 2015 in the Every Student Succeeds Act (ESSA) the portion of funding that goes to state agencies of higher education was not included. She said the 2016-2018 cycle will be the last one of the current program. She said the ESSA encourages cooperation between colleges and universities, ODHE and school districts.

Ms. Collier outlined some fast facts of ITQP over the last five years as outlined in the presentation. She said that colleges and universities submitted nearly 200 proposals they were reviewed competitively and about half of them were funded. She said that awarded was approximately \$12.5M, which was about \$2.5M per year. She said the average amount awarded was \$107K and the grants ranged from \$45K to \$260K. She said most of the grants were in the Math or Math/Science professional development programs. She said the average professional development in these programs is eighty hours; a combination of 2-3 weeks in the summer with follow-up throughout the year. She said that reports indicate that over 1,400 teachers and close to 83,000 (46% high poverty) students were served during this cycle. She shared counties that were served as outlined in the presentation. She discussed sample professional development projects as outlined in the presentation.

Ms. Collier finished her remarks by discussing the benefits and future considerations of ITQP. She said the benefits of ITQP were the following: Educators have opportunities to stay current and constantly improve; Professional development offerings interweave content and pedagogy; Projects offer a high level of immersion and support to educators; and a Majority of the projects have shown positive gains through internal evaluations

and assessments. She said the future considerations involve the following: Emphasizing collecting information on the positive outcomes of both teacher participant and student learning; and to Continue to encourage the geographic distribution of these programs in the State of Ohio.

Ms. Dickinson finished the P-16 Initiatives Update by providing a GEAR UP Update. She said that the many of the P-16 Initiatives focus on the completion agenda and specifically GEAR UP addresses the overall completion agenda for the State of Ohio through student preparedness at the K-12 level as well as their preparedness to go on to post-secondary education. She said this is also access for some of their disadvantaged students. She said GEAR UP: Serves low-income, disconnected, or traditionally underserved students; is a seven year term from 2014 through 2021 (unique most grants tend to be one to three years; allows them to serve students from 7th grade through their first year of college); Provides comprehensive mentoring, outreach, and supportive services; and Provides scholarships for students going on to college (\$3.5M annual grant; half designated for student scholarships). She said another unique component on GEAR UP is that there is a 1:1 in kind contribution match requirement for every federal dollar received.

Ms. Dickinson said that GEAR UP has four main goals as outlined in the presentation and they are: Increase the academic performance and preparation for post-secondary education for GEAR UP Ohio students; Increase the rates of high school graduation and enrollment and persistence in post-secondary education for GEAR UP Ohio students; Increase GEAR UP Ohio students' and their families' knowledge of post-secondary options, preparation, and financing; and Ensure that GEAR UP Ohio consortia will become self-sustaining; develop civic participation in their programs and spread awareness and replication in other schools and communities. She said the first three goals to some degree are set by the U.S. Department of Education. She said the outlined a fourth goal because she wanted to ensure that what they are providing becomes self-sustaining.

Ms. Dickinson began to discuss the four consortia sites/partners as outlined in the presentation. She said they were selected based on the following: low income student populations; community need; low matriculation rates; low college attainment rate; etc. She said all of these factors were considered as these districts were selected. She said each of the four sites have a higher education partner and have the opportunity to engage others.

Regent Kessler asked if the GEAR UP grant was a competitive grant. Ms. Dickinson explained that the submissions were evaluated to determine if they had low income student populations; and if they had been served by another GEAR UP grant. She said once this evaluation was done districts were contacted to see if they wanted to be included in this round of grants. She said some of the larger districts may have been served by a previous grant cycle.

Ms. Dickinson continued and began discussing the GEAR UP focus areas. She said that academic preparedness is one of GEAR UP's goals and they want to ensure that these students are remediation free. She said that there are four focus areas that they asked the site teams and staff to focus on and they are the following: Mathematics Enhancements in the form of collaborations with Math teachers and Math faculty at institutions; Improving Transfer Knowledge when a student is interested in going from a two-year to a four-year institution; and Increasing Parent/Family Involvement on college visits etc.. She said that their first biennial evaluation report is due to the U.S. Department of Education. She said on an annual basis they provide a report on the number of students served and student demographics. She said they have seen improvements in various areas.

Ms. Dickinson finished her remarks by discussing what they see for GEAR UP looking forward. She said they what to build and expand partnerships in the following areas: Other districts; Other colleges and universities; and Community organizations and businesses. She said the four consortia sites/partners can bring in other partners. She said their plan is develop and share resources locally, statewide and nationally. She said there are forty plus states involved in GEAR UP so this is a large national movement. She said they have an opportunity to learn from other states.

Secretary Lindseth asked if there were any changes to the teacher licensure as it relates to professional development and Common Core. Ms. Collier replied that there have not been any recent changes to teacher licensure; the State of Ohio has made modifications to the license exams. She said the Common Core in the State of Ohio was adapted to the Ohio Academic Content Standards. She said that these are the standards that are being used and professional development courses are updated to reflect any modifications when necessary.

Chair Gupta thanked the speakers for their presentation and said that the information that they presented was very helpful and informative.

VII. Presentation – Federal Research Network

Chair Gupta introduced Dennis Andersh, Executive Director, Wright State Research Institute/CEO WSARC. He presented a PowerPoint presentation “Ohio Federal and Military Jobs Commission (OFMJC) Support Ohio Federal Research Network (OFRN) Improving Ohio’s Economy Through R&D” which can be found as Attachment #4. Mr. Andersh began his presentation by providing background on the OFRN and said that it was as a result of the OFMJC. He said the OFMJC was organized by the legislative and executive branches to take a look at what could be done across the State of Ohio to basically make Wright Patterson Air Force Base and NASA’s Glenn Research Center in particular more ‘Base Realignment and Closure (BRAC) proof’. He said there were three focus areas and they were the following: focus on BRAC activities to make these installations stronger; partnering with small businesses; and enhance business development across the State of Ohio in the research arena.

Mr. Andersh explained the process that they undertook with this initiative and said that they asked the centers where they would make their investments over the next ten to twenty years. He said their research priorities were, as outlined in the presentation similar across the centers. He gave the examples of Human Performance; Materials/ Manufacturing; and Data Analytics. He said with that, they asked in what ways the centers would be investing in R&D and how could they better position the state to support these activities. He said they decided not to focus on the basic research; but rather applied research because it is the key area for the transition to business and the federal installations.

Mr. Andersh said the applied research focus for the installations is outlined in the presentation. He said based on the priorities of the installations they looked across the state and determined which institutions were strong in the areas that the centers needed assistance in with research for the next ten to twenty years. He said the following institution leads were selected with contracts as outlined in the presentation: Wright State University (WSU); The Ohio State University (OSU); University of Dayton; Case Western Reserve University; and Ohio University. He said they were paired with other universities across the state that they thought had common research goals and objectives going forward. He said they decided to put some emphasis on commercialization and workforce development as well.

Mr. Andersh said there was a total of \$25M appropriated for this project. He said that \$20M was from a Workforce Development line item at WSU; and \$5M was a line item for the OFRN through ODHE designated for OSU. He said what they have done is combined those resources and they are the administrator. He said \$20M was set-aside to be competitively bid across the research institutions statewide.

Mr. Andersh began to discuss the proposal process and said that they had their Round 1 competitions last fall; and they finished up Round 2 about a week ago. He said they made \$7.1M in awards in Round 1; and approximately \$8.5M in awards in Round 2. He explained the requirements for awardees and said that only four Centers of Excellence (COE), as outlined in the presentation, were awarded in Round 1. He discussed the peer review process and said it was three stages: white paper; full proposal; and award decision. He said when looking across proposals and rankings as a whole they found that the proposals were not very strongly written. He said after Round 1, they realized they needed to train institutions on how to write white papers and proposals. He said the Round 2 process was used as a training process to show institutions how to write white papers and proposals; and as a result what was received in the second round was a vast improvement. He said the evaluation criterion was different in Round 2 and this was done to force interaction/collaboration across the state.

He said there was a Technical Review Council set-up; he outlined the evaluation criteria; and he outlined the evaluation timeline which included the Execute Review Board. He outlined the awardees for Round 2 as outlined in the presentation.

Mr. Andersh finished his remarks by discussing some of the following successes to date: a representative of the Defense Advanced Research Projects Agency (DARPA) contacted some of the awardee institutions regarding a federal proposal; OSU is now the lead on this proposal team; a joint effort in Flexible Electronics and Trust Business Development Effort between the University of Akron and WSU; a Joint Additive Manufacturing Effort with Youngstown State University (YSU) and others that can be leveraged with ODHE's Regionally Aligned Priorities in Delivering Skills (RAPIDS) program; and Multiple universities across the state are now pursuing joint efforts with DARPA and other federal entities. He said they have had discussions with the Governor's office about additional funding as their goal is to have the program self-sustaining. He said they have seen collaborations that they have not seen in the past and new opportunities being pursued.

Chair Gupta made comments about job creation and collaboration with ODHE. He asked how they were going to create jobs without commercialization. Mr. Andersh replied that Ohio business and universities only capture a small portion of the AFRL budget. He said they want to commercialize products and have examples of those; and develop research talent to support efforts in the state.

Chair Gupta followed-up with another question and asked what their metrics were to measure success. Mr. Andersh replied that this will be measured by growing the research over the next five years and doubling it; he said that he believes this doable. After further comments between both, Chair Gupta said that this has created another layer of bureaucracy that will require a great deal of funding since they are only concentrating on federal research. He said that their BOR report that was issued a few years ago clearly mentioned that most of the federal dollars spent on research do not lead to modernization. He said commercialization should be a higher priority.

Vice Chair Humphries made comments about the quality of the proposals and asked about a strategy to assist the small businesses as it relates to engaging them in the proposal process. Mr. Andersh replied that the industry days that they have planned this fall are focused on the small and medium sized businesses.

Chair Gupta thanked Mr. Andersh for his presentation before the BOR and welcomed him to provide and update on the program at a later time.

VIII. Program Share Collaborative

A. Judicial Court Reporting Program (JCR) – Presentation

Chair Gupta introduced the following for a Judicial Court Reporting Program (JCR) Presentation: Robyn Hennigan, Program Coordinator/Assistant Professor, Clark State Community College (CSCC); Aimee Balenger-Hass, Dean, Business and Applied Technologies Division, CSCC; Rene Eneix, Department Chair/Associate Professor, Stark State College (SSC); and Julie Hardgrove, Associate Professor, SSC. They presented a PowerPoint "Clark/Stark Judicial Court Reporting Program Share" which can be found as Attachment #5.

Ms. Hennigan began their presentation by briefly explaining court reporting. She said that most people know the 'traditional' court reporter that sits in the court room and takes a verbatim record. She said that skill is a skill of writing on a stenographer machine and that skill is used in a multitude of careers; including the court reporter as well as the reporter that leaves the courtroom and takes depositions, arbitrations, hearings, etc. She said the bigger field that most people are unaware of is the live captioning field that you see on television; this is done by a reporter with the same skill. She said there is also a cart captioner who you may see on college campuses that provide real time services to those students with disabilities. She said there is also another field; web casting.

Ms. Hardgrove said that nationwide there is a low enrollment in their particular program. She said that is something that is not just affecting the State of Ohio; this is nationwide. She said many institutions have closed because of this. She said there are only two programs currently in the State of Ohio, their shared program and

Cuyahoga Community College; several years ago there were seven. She said there is a demand for court reporting jobs nationwide and there is going to be a gap of approximately 5,500 jobs in judicial environment in the next three years. She said this gap does not include captioning and web casting which are growing in demand as well.

Regent Kessler asked why the enrollment in the program was down. Ms. Hardgrove replied that this was something that they were trying to figure out. She said that this is a stressful program and a lot of skill is required for the program. She said it takes a great deal of dedication and hourly practice on the machine as well. She said that when students graduate there is nearly 100% placement

Ms. Hardgrove continued and said that the joint program began as a result of a meeting at SSC in September 2014 when they discussed program closures and how it was affecting their respective programs. She said from there the focus was on the curriculum more than anything so they had to develop processes for all of the other functions involved in the programs. She said they wanted to leverage their strengths and create a shared program because they were both accredited through the National Court Reporters Association (NCRA), their national organization.

Secretary Lindseth asked what the average salary level of a JCR employee was. Ms. Hardgrove replied that the average salary range is \$60K to \$64K. Ms. Hennigan added that a court reporters starting salary may be lower at \$40K and they may receive additional income on their transcripts.

Ms. Eneix said that the program had to have the following compliance documents in place for the program approval: Higher Learner Commission Consortium Agreement and ODHE Memorandum of Understanding (MOU). She said these documents laid out their program intentions and all the detailed program requirements. She said the drafting the MOU was a nine month process as it was a bit more complex as they had to consider the processes of both institutions.

Ms. Hennigan said some of the administrative considerations that they had to focus on were the following: Financial Aid –students have to complete a consortium agreement each semester; Student Services – there is a designate point person at each campus; Bookstore – all textbooks are at both campuses; Registration – somewhat complicated, but agreements are in place and students sign a FERPA release every semester; and Funding – institutions have a 50/50 split, graduation dollars given to the home student of the college.

Ms. Hennigan said that she serves as Chair to the Council on Approved Student Education for NCRA. With that, she said it made sense for her to be the lead on curriculum development for the JCR program and she began to discuss this. She said that the curriculum development process took approximately two months and the following took place: course selection; course development; and finally course technology. Ms. Eneix added that the institutions are were using different technologies; they decided to adopt Realtime Coach software that is used by court reporting schools nationwide that offers students a wide array of useful skill features.

Ms. Eneix and Ms. Hennigan began to discuss what they had learned throughout this process. Ms. Eneix said as far as class offerings are concerned they are trying to make their students as successful as possible. She said that they had to develop a curriculum sequence plan for students that start both in the fall and spring. She said they also have to have individual monitoring and advising for each student so if they drop a class they have a class for them the next semester. She said they want the process as seamless as possible for the student's success. Ms. Hennigan added that the individual advising starts from initial student contact. She said they have created a joint information sheet that is provided to students when they inquire about the JCR program. Ms. Eneix said that they use DropBox to share relevant program documents between the campuses and Free conference call to have weekly meetings to discuss students and their progress. Ms. Hennigan said that College support is a necessity; they were able to very rapidly gain the support of both institutions.

Assistant Deputy Chancellor See posed a question about the admissions process and wanted to know if a student was reviewed by both institutions since they had to be admitted by both. Ms. Hennigan replied that a student has to complete the application process for both institutions; however they pay the fee for just the home school application and the second fee is waived. Ms. Eneix added that once a student has completed the assessments at the home school and been admitted they do not need to do the assessment process again.

Chancellor Carey asked how many students were enrolled in the JCR program. Ms. Hennigan replied that there are approximately twenty students currently in the JCR program. She said their goal is to develop a marketing plan and this should increase the amount of students in the program.

Vice Chancellor Davidson posed a question about students in the JCR program that may have developmental needs (i.e. general education) and wanted to know how their needs were addressed. She said the student's home schools would be responsible for addressing this.

Ms. Eneix and Ms. Hennigan finished the JCR presentation by outlining what's next for them. She said the following: Joint Assessment/Academic Program Review; Prior Learning Assessment (PLA); Bi-yearly MOU Review; and Captioning Certificate. She said that the assessment differs at each institution so they are in the process of creating a joint assessment. She said that spring of 2017 the JCR at CSCC will undergo an Academic Program Review and the JCR at SSC will undergo an Academic Program Review in 2019. She said PLA is the topic at the state level and they want to review their program for expectations for PLA process. Ms. Eneix said they will do a Bi-yearly review of their MOU and make additions to that document. She said that have to add the captioning certificate to the MOU as they are developing the Continuing Education Certificate along with the Associates Degree.

Vice Chair Humphries asked how advanced technology was in their field. Ms. Hennigan replied that their technology far exceeds the digital voice recognition technology. She said as a human in the courtroom she can pick up multiple people in the courtroom and differentiate who is speaking; the digital recorder cannot do that. She said their technology is 'real time' and it meets ADA requirements.

Chancellor Carey wanted to know how students become aware of the JCR program. Ms. Hennigan replied that NCRA has a current campaign 'Take Note Campaign' and they have been distributing a great deal of information; and Governor Kasich also assisted through National Captioning Week. She said that students Google them as well.

B. Northeast Ohio Master of Fine Arts Program (NEOMFA) – Presentation

Chair Gupta introduced Dr. Steven Reese, Professor, YSU and Director of NEOMFA by reading his biography. Dr. Reese began his presentation by showcasing the NEOMFA website. He said NEOMFA is in its 14th year and its second time at YSU. He said the directorship of the program rotates every three years; it started at YSU and this is their second time directing the program. He explained the admissions process and said the program is forty eight hours; typically three years. He said the goal of the NEOMFA is to assist writers with making themselves lifelong writers and give them an opportunity to produce a book in their field. He said a student can choose between the following genres: drama; poetry; fiction; and creative non-fiction for their degree. He said at the end of their coursework they write a thesis – a book in the genre that they have chosen. He said students have workshops, craft and theory and an internship experience requirement as well during the program.

Dr. Reese began to discuss strengths of the program. He said one of these was the consortium structure. He said that the students can take any of the courses at any of the four campuses. He said that students are exposed to exceptional writers by attending NEOMFA sponsored events; they have at least three per year.

Vice Chair Humphries asked if the writers go to each campus for a single workshop. Dr. Reese said that they have the writers visit a different campus each time and have the students travel to meet the writers vs. having them visit each campus for a single workshop.

Vice Chair Humphries follow-up with another question and asked how many students are in the NEOMFA program. Dr. Reese replied that there are currently 79 students in the NEOMFA program. He said this is the second highest number they have had in the program. He said they typically receive fifty to seventy-five applications; they admit fifteen to twenty-five students; and graduate twelve students annually.

Chancellor Carey said that they NEOMFA program was a great program and wanted to know if there was interest around the state of replication. Dr. Reese said that he has not been approached about replicating the program but there seems to be intrigue at national conferences as he has been approached there.

Secretary Lindseth asked if the NEOMFA program students are aware of the writers that the Cleveland Library featured events. Dr. Reese replied yes; NEOMFA program students are aware of the writers and they often visit the Cleveland Library; however he is not aware how many students attend this program.

Chancellor Carey asked him about the number of traditional vs. non-traditional students. Dr. Reese said there are approximately 10 % non-traditional students that are mostly from the surrounding area. He said he would like to see more diversity in the applicants.

Vice Chancellor Davidson asked if the NEOMFA program offered any advantages to the faculty. Dr. Reese replied yes; the NEOMFA program offers the faculty the opportunity to teach writers that are driven and the faculty can introduce different concepts. He said they can tailor a lot more things to the students and teach things that they cannot at the undergraduate level.

Regent Kaufman thanked Dr. Reese for the NEOMFA program overview and said it was refreshing to have a Liberal Arts presentation before the BOR. Dr. Reese replied that they are very proud of the program and was thankful for his appearance today.

Chair Gupta asked how the NEOMFA program was funded. Dr. Reese replied that the NEOMFA program was funded by a portion of each student's tuition.

IX. New Business/Open Discussion

A. Believe in Ohio

Chair Gupta asked for an update on the Believe in Ohio initiative. Assistant Deputy Chancellor See said that the Believe in Ohio goal was to promote STEM education K-12 students in the State of Ohio. He said another objective was to develop scholarships for students to use as they pursue a degree in STEM fields in higher education in the state. He said that they came together with a lot of initiatives around STEM across the state such as the following: business level planning, statewide competitions and educating teachers. He said this program was funded for two years by the General Assembly and they are at the end of this period. He said overall this program has had some success and they can share with the BOR an end of the year expenditure report for this initiative. Chair Gupta said he is interested in the metrics that they laid out at the beginning of the program – a quantitative measurement of success. Assistant Deputy Chancellor See said the metrics can only be measured based on the deliverables as set forth by the General Assembly.

B. I-CORPS@Ohio

Chair Gupta asked for an update on the I-CORPS@Ohio Program. Assistant Deputy Chancellor See said that this is the second cohort of the I-CORPS@Ohio and it is comprised of twenty teams. He said that they have had twenty-eight teams go through the process in total. He said they are in the process of preparing the Request for Proposal for the third cohort and they believe they are going to have twenty-four teams in this cohort. He said that each cohort seems to be focused on a specific track; in the third cohort they want to focus on Medical Technology. He said they have formalized their relationship with the Ohio Third Frontier Commission who is very interested in their program in terms of identifying teams for follow-on funding to continue commercialization. He said this is because they realize that these teams have gone through a rigorous market validation process. He said they are working with the Governance Committee on a sustainability plan; and has had discussions with the institutions so they understand the need for them to invest so this project can continue. He said they are

also looking for linkages with I-CORPS@Ohio with other commercialization efforts as well. Chancellor Carey added that he has had an opportunity to meet with representatives of participating institutions and this is an impressive program.

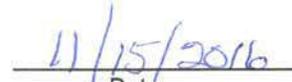
C. BOR Member Appointments

Vice Chair Humphries wanted to know if there was a status on the appointments of the BOR members. Chancellor Carey replied that he had no updates to date as he is not part of this process. Chair Gupta said that he would request a meeting with representatives of the Board of Commissions Division of the Governor's Office for the BOR in the near future for an update on the appointments.

X. Adjournment

Chair Gupta asked if there were any further items to be brought before the Board. There being no further business before the board, Vice Chair Humphries made a motion to adjourn the meeting and this motion was seconded by Regent Kaufman All voting members of the board voted in favor of the motion and Chair Gupta declared the meeting adjourned


Ohio Board of Regents


Date

President's Report



Chancellor John Carey and the Ohio Board of Regents
September 15, 2016

KENT STATE

UNIVERSITY

Chancellor John Carey

and the

Ohio

Board of Regents

WELCOME



EMPOWERED TO

DISCOVER

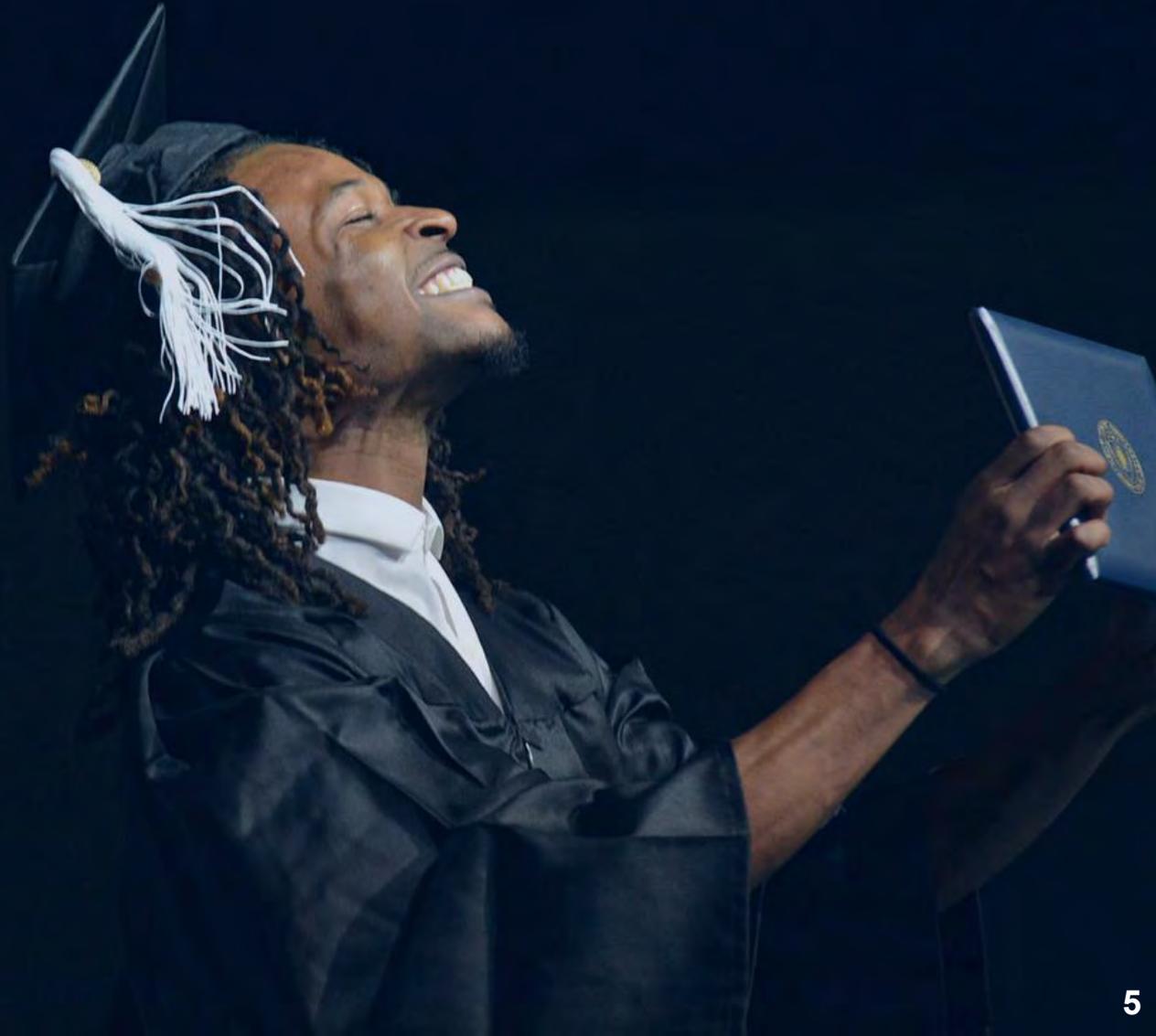
A STRATEGIC ROADMAP TO A DISTINCTIVE KENT STATE

A person wearing a bright yellow cape is running across a large, open grassy field. The scene is set during sunset or sunrise, with a warm, golden glow and a lens flare effect in the foreground. In the background, there are several street lamps and a line of trees under a clear sky. The text "KENT STATE" is overlaid in the center of the image.

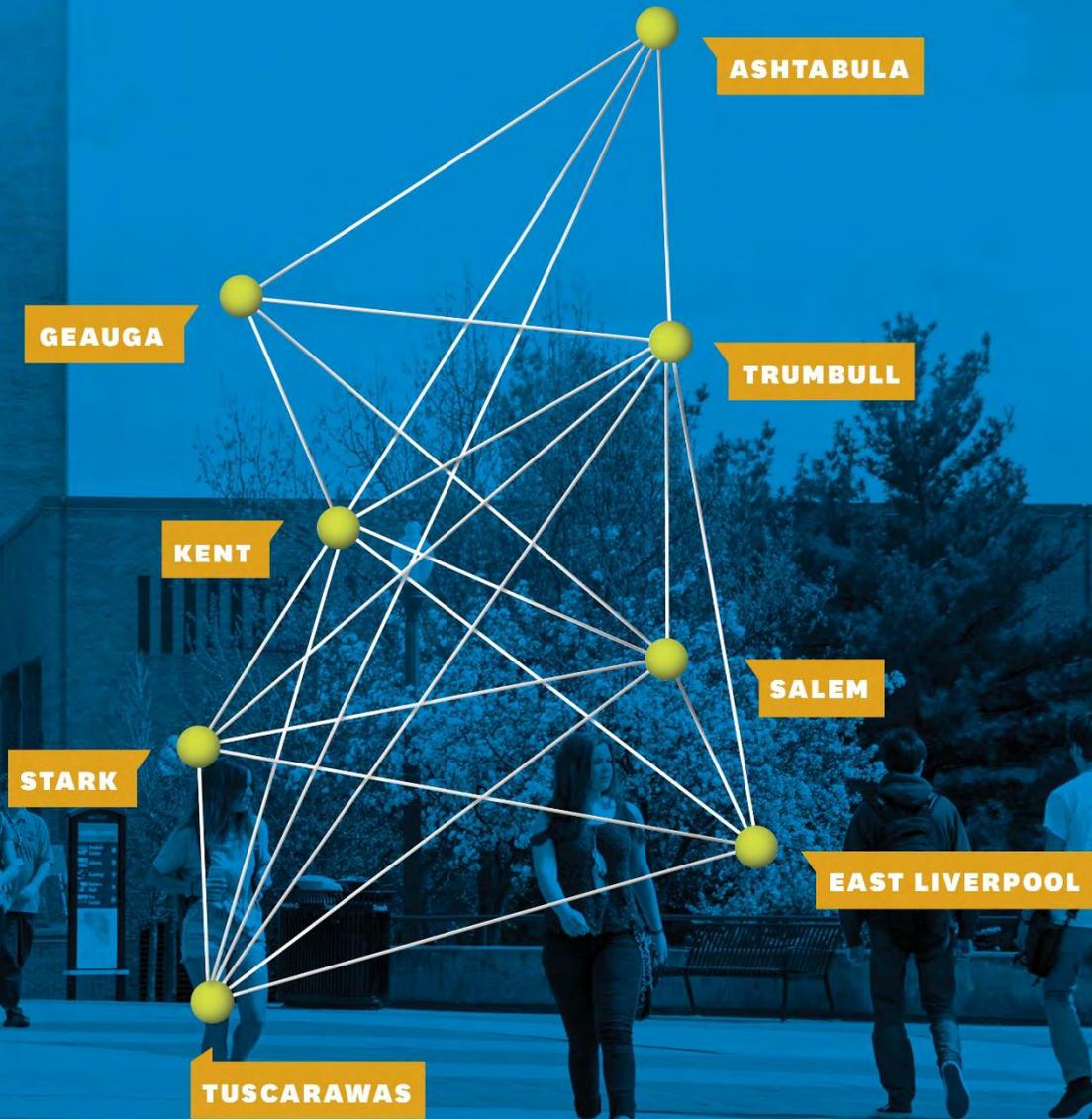
KENT STATE

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The Kent State Promise



The Kent State Promise



The Kent State Promise



FOUNDATIONS OF EXPERIENCE

BUILDING THE FUTURE

The Kent State Promise



Student Success and Completion



Student Success and Completion



Student Success and Completion



LIFETIME EARNINGS EDGE

A typical college graduate of a 4-year college/university will earn nearly

\$1 MILLION

more than a high school graduate, on average, over his or her lifetime.



\$2.2M



Bachelor's Degree

\$1.3M



High School Diploma

SOURCE: Federal Reserve Board of San Francisco / Stephen Rose, labor economist

LIFETIME EARNINGS EDGE



THE COLLEGE DEGREE EMPLOYMENT ADVANTAGE



The unemployment rate for recent college graduates is **much lower** than for high school graduates.

Percent Unemployed

2.8%



Bachelor's Degree

5.4%

High School Diploma

SOURCE: U.S. Bureau of Labor Statistics Unemployment in 2015 Report. March, 2016

LIFETIME EARNINGS EDGE



THE COLLEGE DEGREE EMPLOYMENT ADVANTAGE



THE COLLEGE HEALTH ADVANTAGE



College graduates live **seven years longer** on average than those who hold a high school diploma or less.



**+7
YEARS**

Higher Education's Value Proposition



UNDENIABLY

KENT

STATE





***Overview of the
2015-16 Academic Year***



CCP Program begins in 2015-16

- College-ready students apply and are admitted started Autumn 2015
- Eligible Students are in grades 7 – 12
- Many college course options
- Public colleges are free
- Private colleges may include small cost

CCP Program Evaluation

- Report annually on the implementation and progress of the CCP program
- College Credit Plus Task Force formed to develop Performance Metrics and monitor the program
- Recommendations/strategies for continuous improvement
- All participating colleges and universities must report data

Data Collected

Student Profile:

Demographics

- Race/ethnicity
- Gender
- Age
- HS graduation year
- Socio-economic status
- Disability Status

Data Collected

Academic Information :

- Student Identifier
- Course/section Identifier
- Course Subject Area
- Course length
- Credit Hours
- Course Outcome (GPA)
- College Readiness
- Assessment scores or other methods used

Data Collected

Learning Environment:

- Course delivery method (on-line, on campus, at the HS)
- Faculty information
- Location

Data Collected

Financial:

- Alternate funding agreements
- Text books costs
- Fees waived
- Tuition per-credit hour
- Application & approvals to go below the floor

Required Annual Reporting

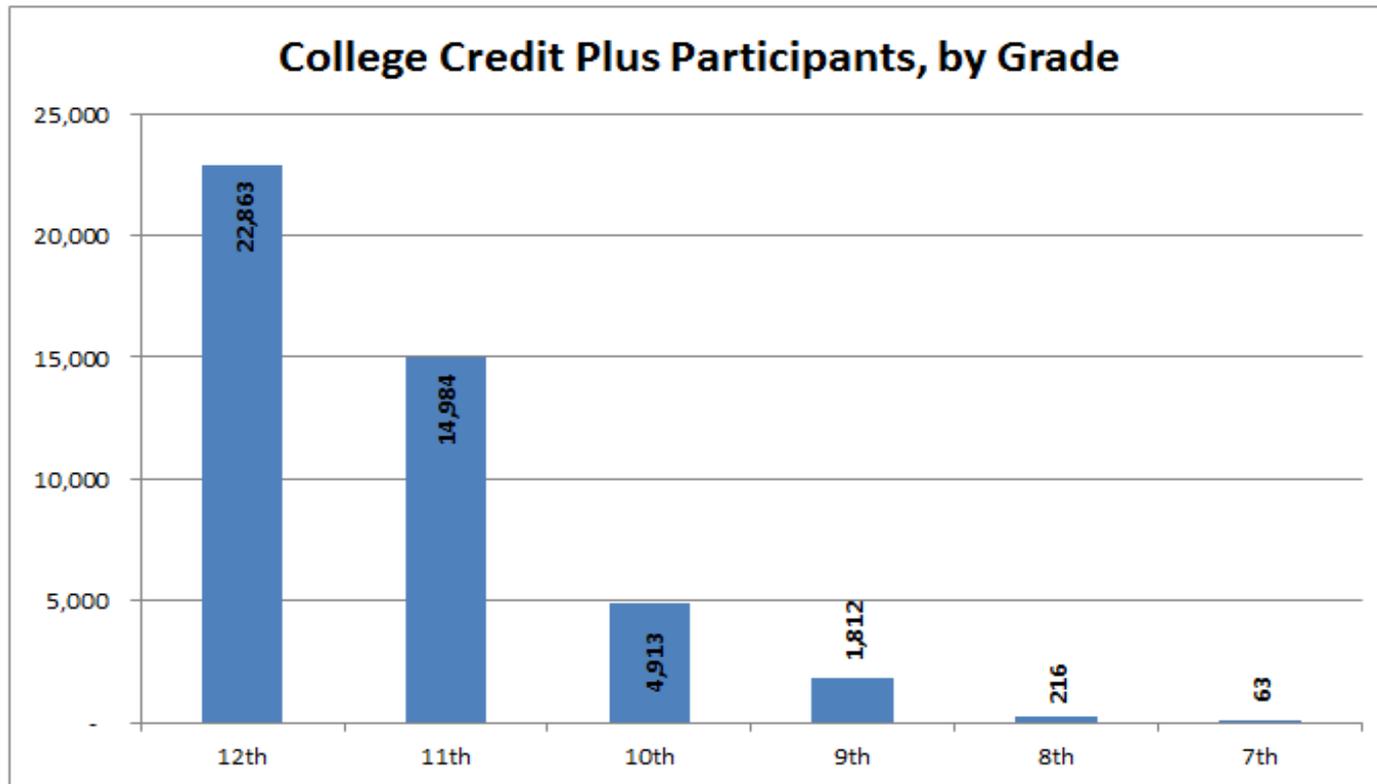
- **CCP Participation by:**
grade, race/ethnicity, gender, disability
and economic status
- **Types of courses taken**
- **# of completed courses & credit hours**
- **GPA per course**

Required Annual Reporting

- # of students denied funding
- # of students denied admission or participation
- Instructional fees waived
- Cost of textbooks

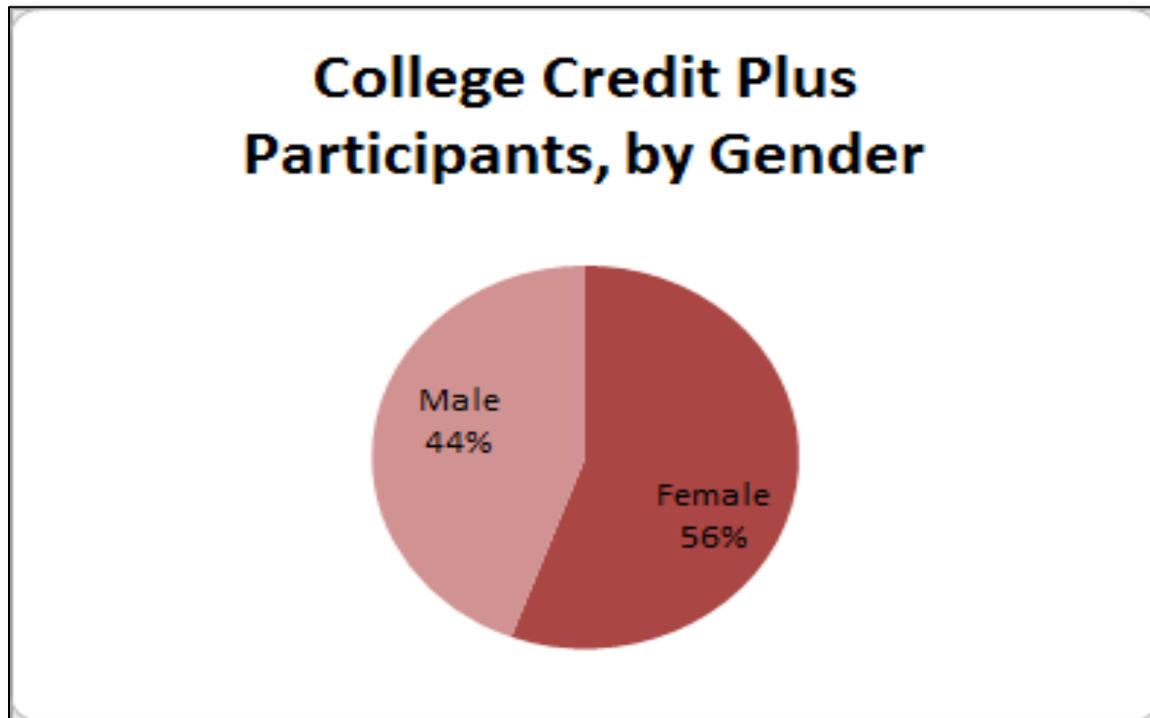
2015-16 Academic Year

Of the students that had a grade level reported, the majority of CCP students were in high school (99%).



2015-16 Academic Year

The CCP student population was over-represented by female students (56%) as compared to the overall state population of 7th – 12th grade students*, which is 49%.



*2014-15 Data from ODE

CollegeCredit

*Still finalizing Spring 2016 Data. All Data is considered preliminary 9/13/2016. >>>> PLUS

2015-16 Academic Year

- The most common assessments used to determine if the student was college ready were the ACT and Compass.
- According to surveys of the IHEs, about 2,900 students were denied admission

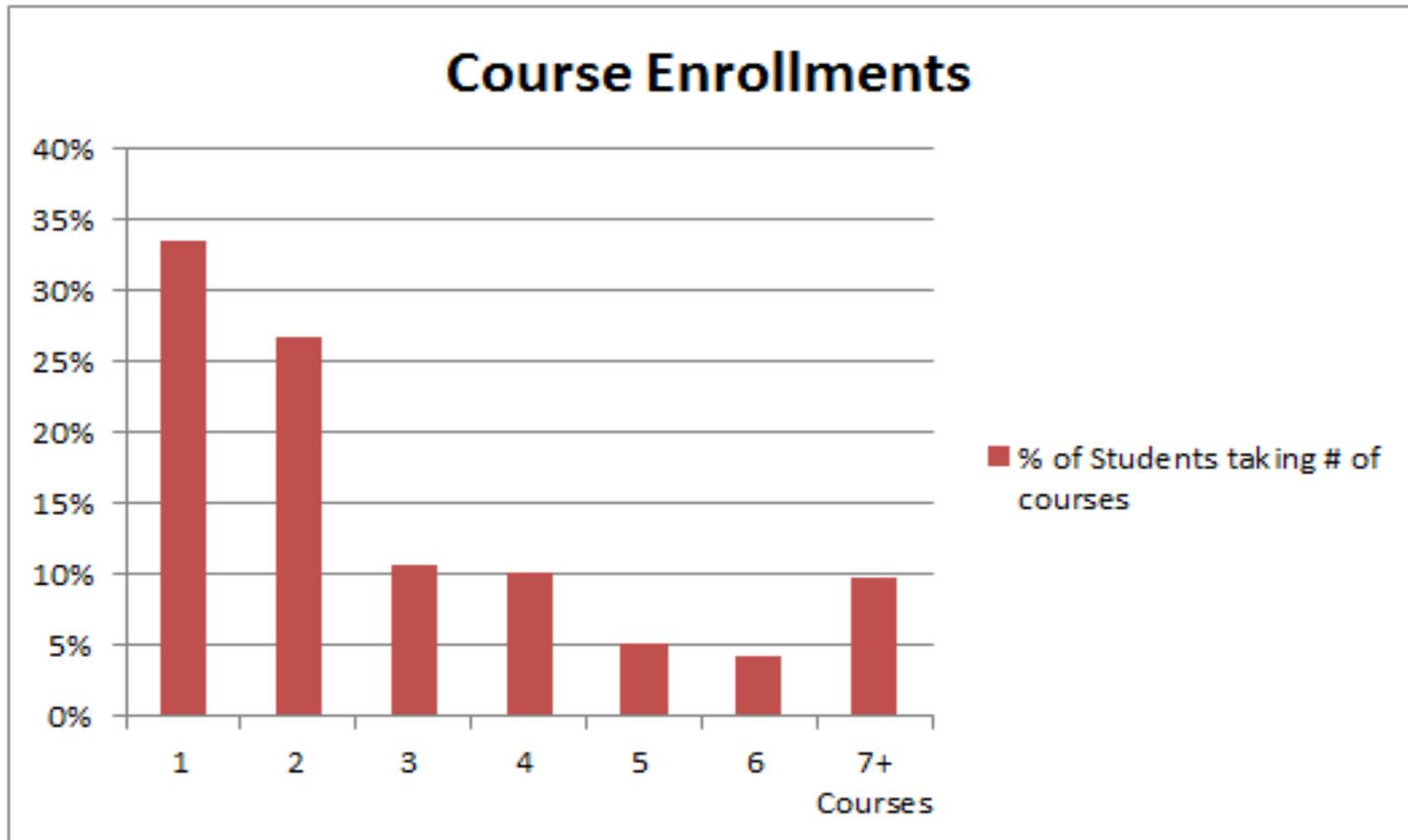
Assessment Name	% of total student assessments reported	Mean	Remediation Free Score	Source for Remediation Score
ACT Composite	12.5	23.55	22	ACT 2016 report
ACT English	19.3	23.24	18	2012 state standards
ACT Math	17.0	23.81	22	2012 state standards
ACT Reading	15.8	24.65	21	2012 state standards
Compass Algebra	6.8	51.99	50	ACT concordance report
Compass Test for Reading skills	17.8	85.60	88	2012 state standards

*Still finalizing Spring 2016 Data. All Data is considered preliminary 9/13/2016.



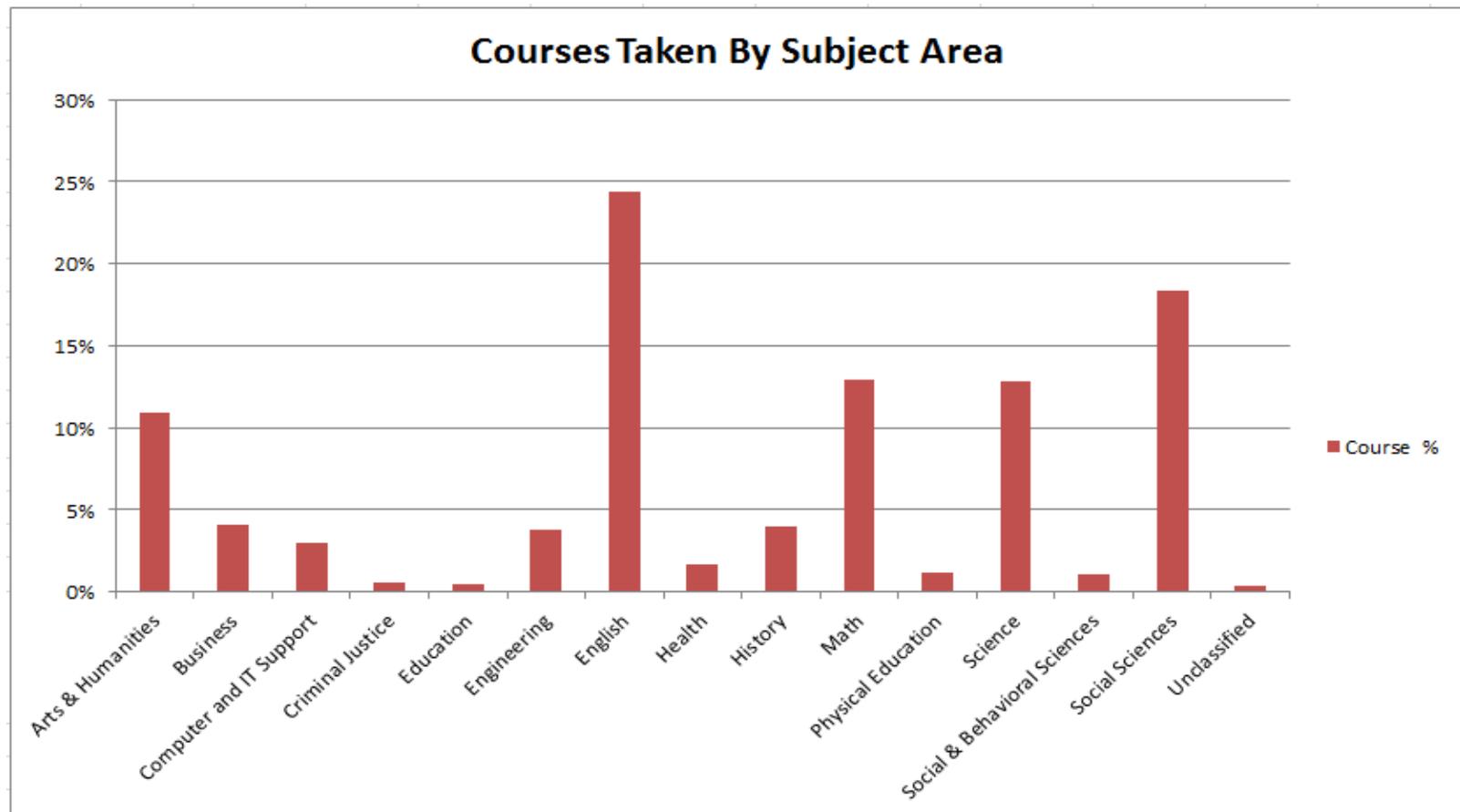
2015-16 Academic Year

- The majority of students took 3 or fewer courses for college credit (71%).



2015-16 Academic Year

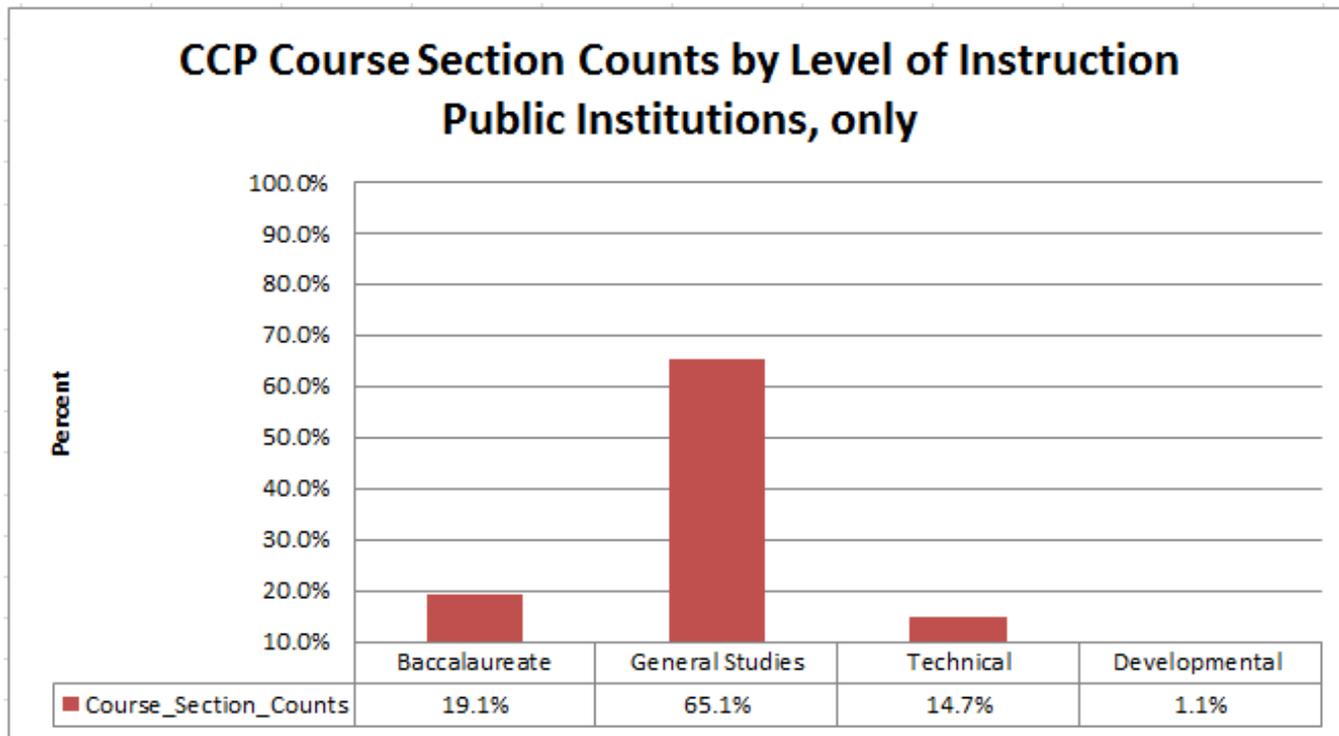
- The majority of CCP students are taking courses in five main core content areas: English (24%), social sciences (18%), math (13%), science (13%), and arts & humanities (11%).



*Still finalizing Spring 2016 Data. All Data is considered preliminary 9/13/2016.

2015-16 Academic Year

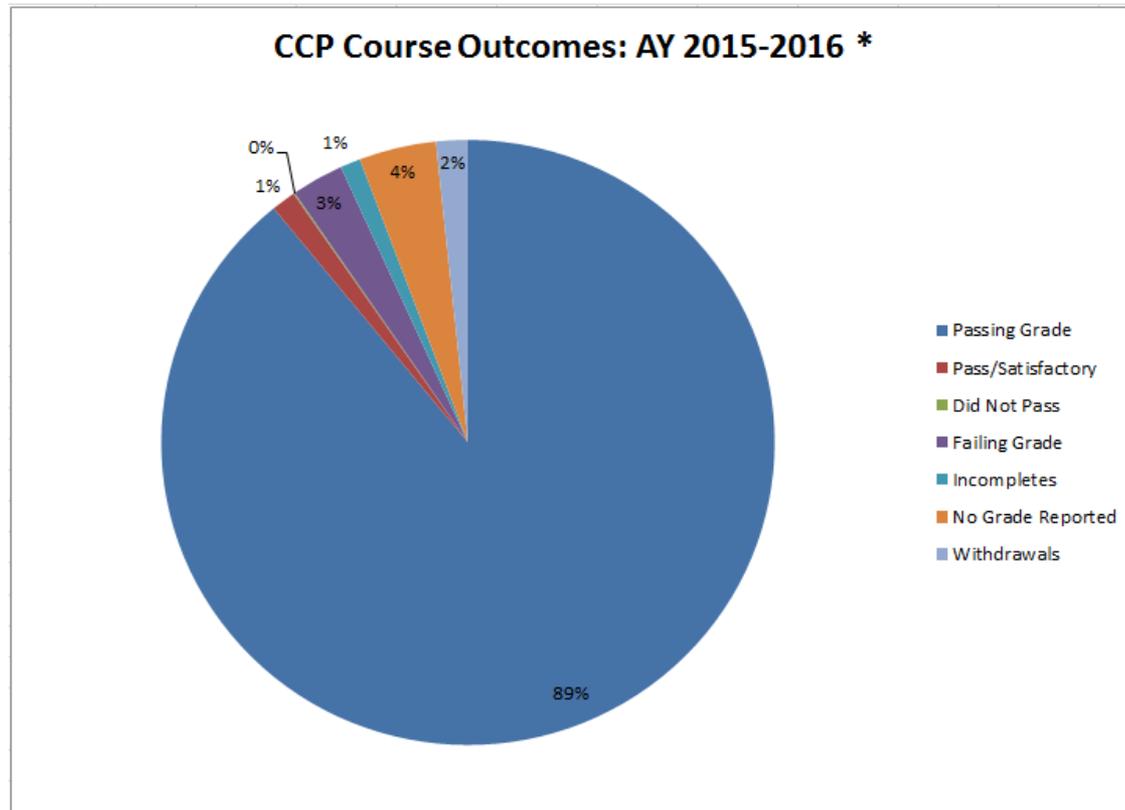
- The most frequent level of course taking by CCP students was general studies, which is appropriate for students in their first or second year of post-secondary education.



*Still finalizing Spring 2016 Data. All Data is considered preliminary 9/13/2016.

2015-16 Academic Year

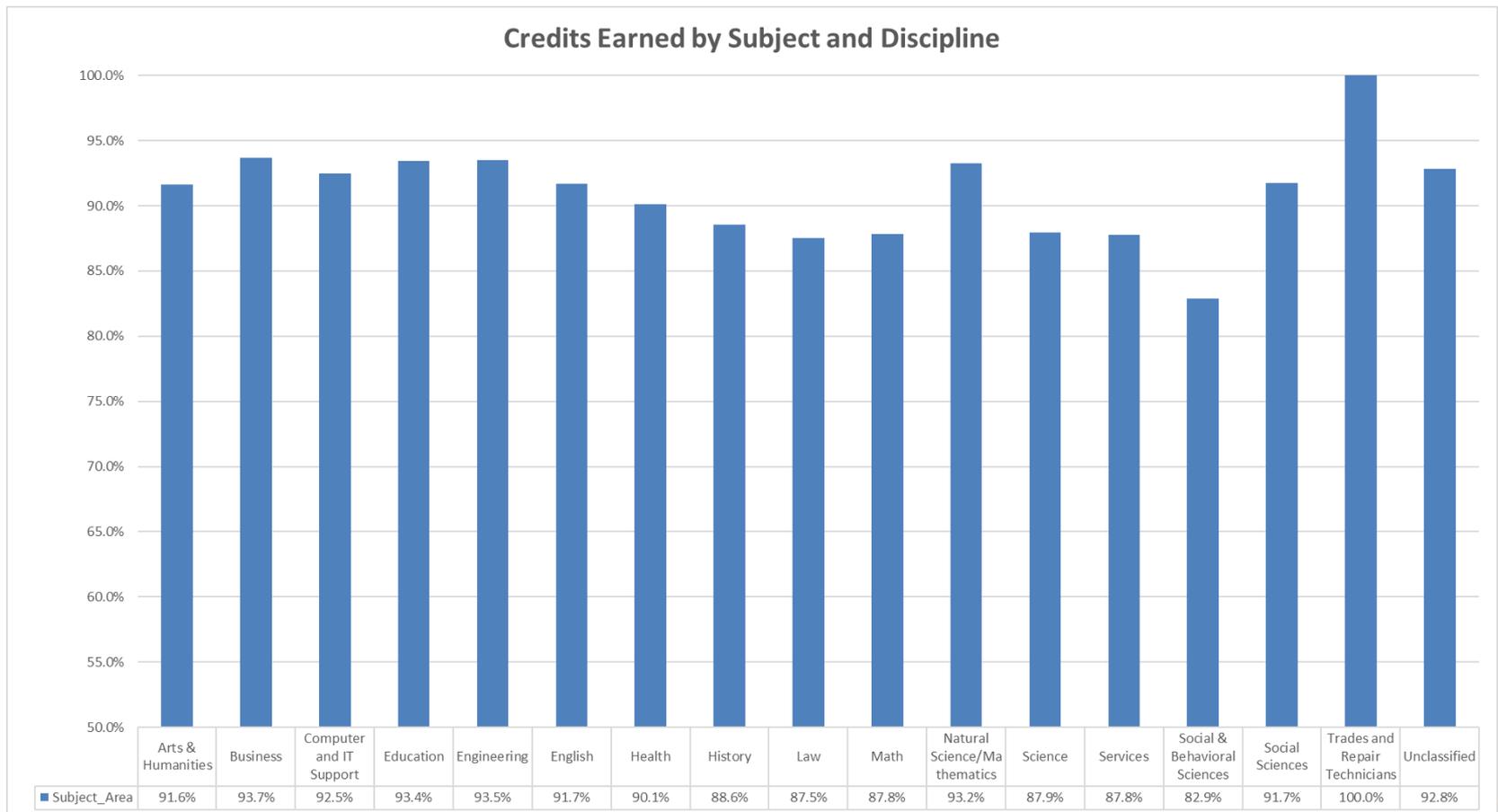
- Just over 90% of courses taken by CCP students resulted in credits earned.



*Still finalizing Spring 2016 Data. All Data is considered preliminary 9/13/2016.

2015-16 Academic Year

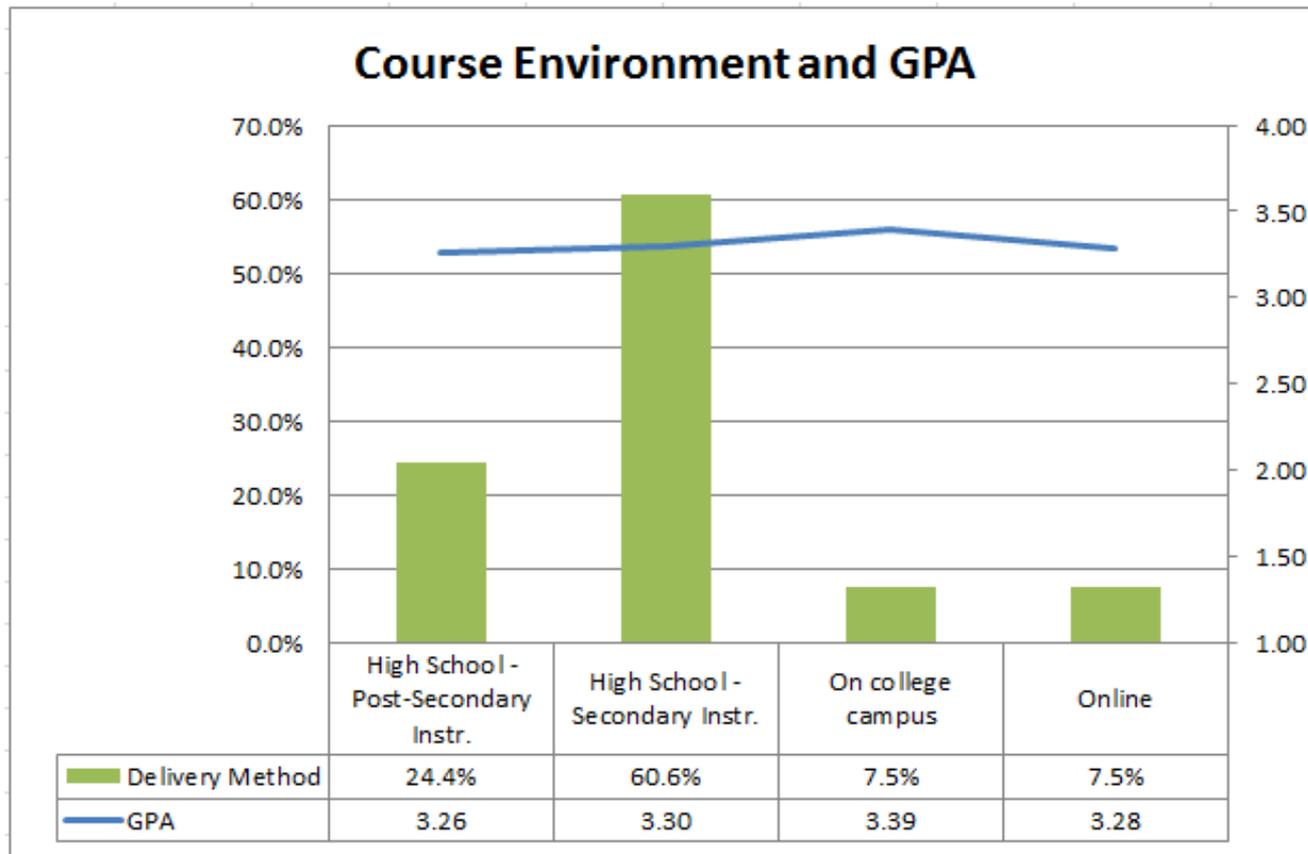
- By subject area and discipline, the majority had over 90% of students earning credits.



*Still finalizing Spring 2016 Data. All Data is considered preliminary 9/13/2016.

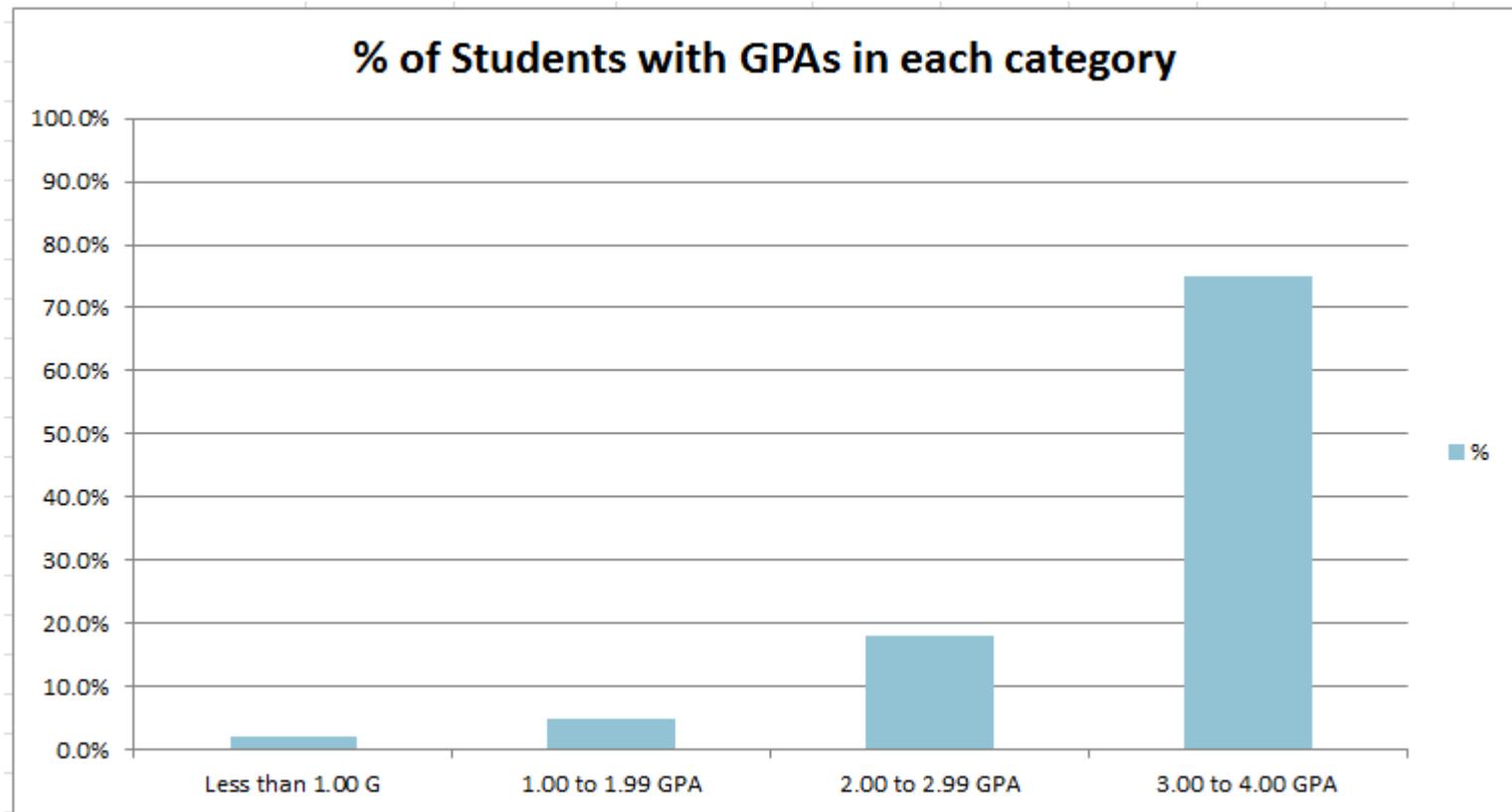
2015-16 Academic Year

- The majority of the courses were offered on the high school campus (~85%) but the GPA did not vary much by the location.



2015-16 Academic Year

- Most students have a GPA between 3.00 and 4.00 (on a 4 point scale)



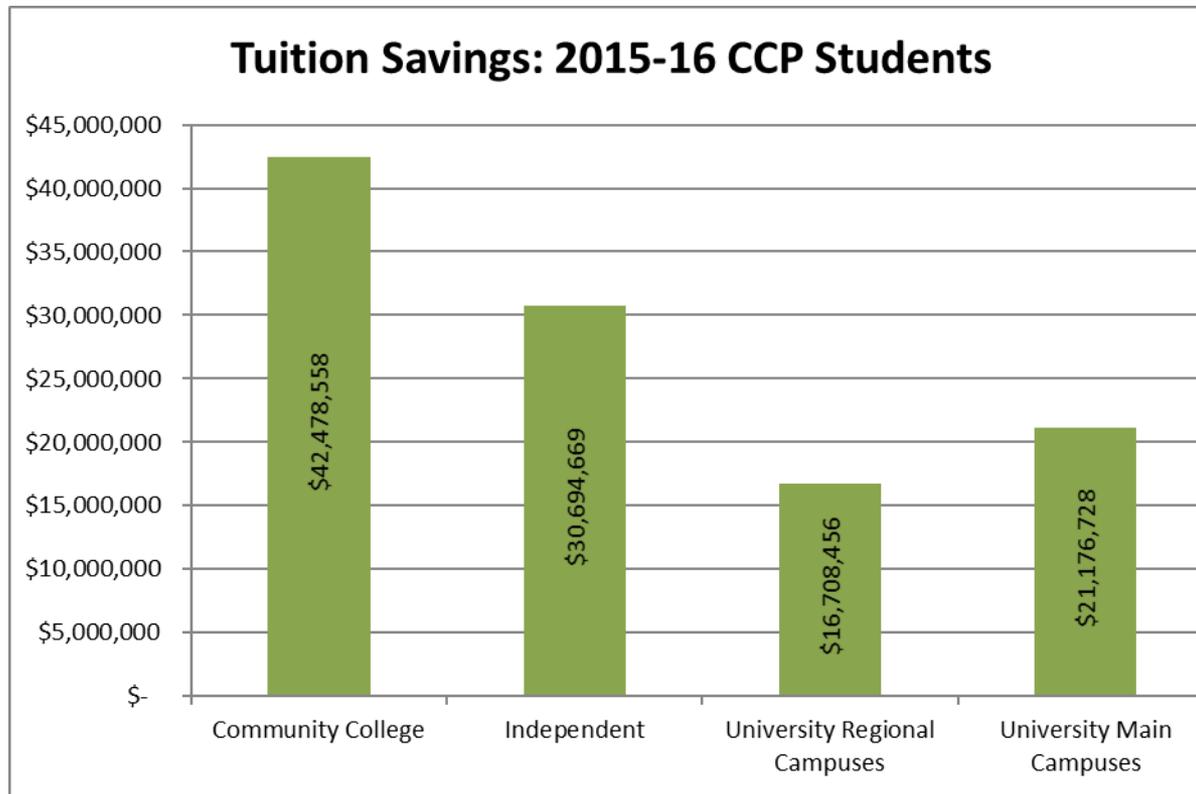
2015-16 Academic Year

Program Implementation:

- Professional development courses offered to adjunct faculty: over 450
- Classroom observations: ~2100
- Off-Campus Adjunct Faculty are qualified:
 - Hold a master's degree in the discipline being taught (64.8%)
 - Currently in a master's degree program (15%)

2015-16 Academic Year

Tuition savings, as calculated based on the advertised per credit hour amount: Over \$111 million.



*Still finalizing Spring 2016 Data. All Data is considered preliminary 9/13/2016.

Future Analysis

- Success as undergraduate
- Credit transferred as a result of CCP participation
- Retention and Persistence Rates
- Degree completion
 - annual number and type of certificates, associate degrees, and bachelor's degrees awarded
- Terms to degree
- Credit Hours to degree

Open Discussion

- Recommendations for performance metrics
AND
- Program and policy related improvements



Attachment #3

P-16 Initiatives Update

Educator Preparation – Jessica Mercerhill

Improving Teacher Quality Program – Alexis Collier

GEAR UP – Leah Dickinson



Department of
Higher Education

 **OhioHigherEd.org**



P-16 Initiatives

Populations Served

2015-2016 Academic Year

- 608 Public Districts
 - 188 Designated High Needs
- Approximately 1.8 Million Public Students
- Approximately 111,000 Public Teachers
- Approximately 5,600 Educator Preparation Graduates

Educator Preparation

Licensure Programs

4-year Public: 13

4-year Private: 38

Out of state: 6

Community Colleges: 21

Educator Preparation

Performance Reports and Accountability

- 2009 passage of Ohio Revised Code 333.048 as way to ensure sustainability of Race to the Top initiatives
- 2012 dashboard of metrics completed and metrics reports developed
- Reports published annually on February 15

Educator Preparation

- Metrics include:
 - Licensure Test Pass Rates
 - Ohio Teacher Evaluation System (OTES) Results of Program Graduates
 - Ohio Principal Evaluation System (OPES) Results of Program Graduates
 - Value-added Data (EVAAS)
 - Candidate Academic Measures Considered for Program Admission
 - Field/Clinical Experiences
 - Pre-Service Teacher Candidate Survey Results
 - Resident Educator Survey Results
 - Resident Educator Persistence Data
 - Excellence and Innovation Initiatives
 - National Accreditation

Educator Preparation

Deans Compact for Exceptional Children

Organization of Education Deans from across the state that promotes effective practices to improve educational results for ALL of Ohio's children.

Compact provided grants to create innovative Dual Licensure programs that combine Low Incidence (serving students with visual and hearing impairments, cognitive disabilities, mobility challenges) licenses with general classroom licenses.

Improving Teacher Quality Program (ITQP)

Acknowledgments

Dr. Rebecca Watts, Associate Vice Chancellor, P-16 Initiatives

Dr. Russell Utgard, Director, ITQP

Karen Scott, High School Teacher and ITQP Consultant

Megan Johnson, Administrative Assistant, ODHE

Improving Teacher Quality Program (ITQP)

Program History

Elementary and Secondary Education Act (ESEA)

- Title II, Part A, Sub-part 3, Public Law 107-110
- No Child Left Behind, 2002
- Purpose: To increase academic achievement of all students by helping schools and districts improve teacher quality

Ohio Department of Higher Education (ODHE) administers ITQP

- Awards grants competitively to colleges and universities
 - partnerships between schools of education and arts and sciences, and high-need local education agencies
 - high-need requires $\geq 20\%$ poverty level and teachers who are not-qualified
 - STEM focus

Every Student Succeeds Act (ESSA), 2015

- 2016-2018 last cycle of current program

Improving Teacher Quality Program (ITQP)

Fast Facts – Last Five Years (FFY 2011-2015)

Total proposals submitted:	192 (median = 42/year)
Total proposals awarded:	116 (median = 23/year)
Total amount awarded:	\$12,508,273 (avg. ~\$2.5 million/year)
Average amount awarded:	\$107,830 (range ~ \$33K to \$260K)
Science proposals awarded:	66
Math and Science:	18
Math:	32
Grades 6-12:	63
Grades K-5:	42
Grades K-12:	11

Improving Teacher Quality Program (ITQP)

Fast Facts – Federal Fiscal Year 2014

General

- 25 grants awarded; \$45,000-\$260,000
- 80 hours of professional development on average

Participation

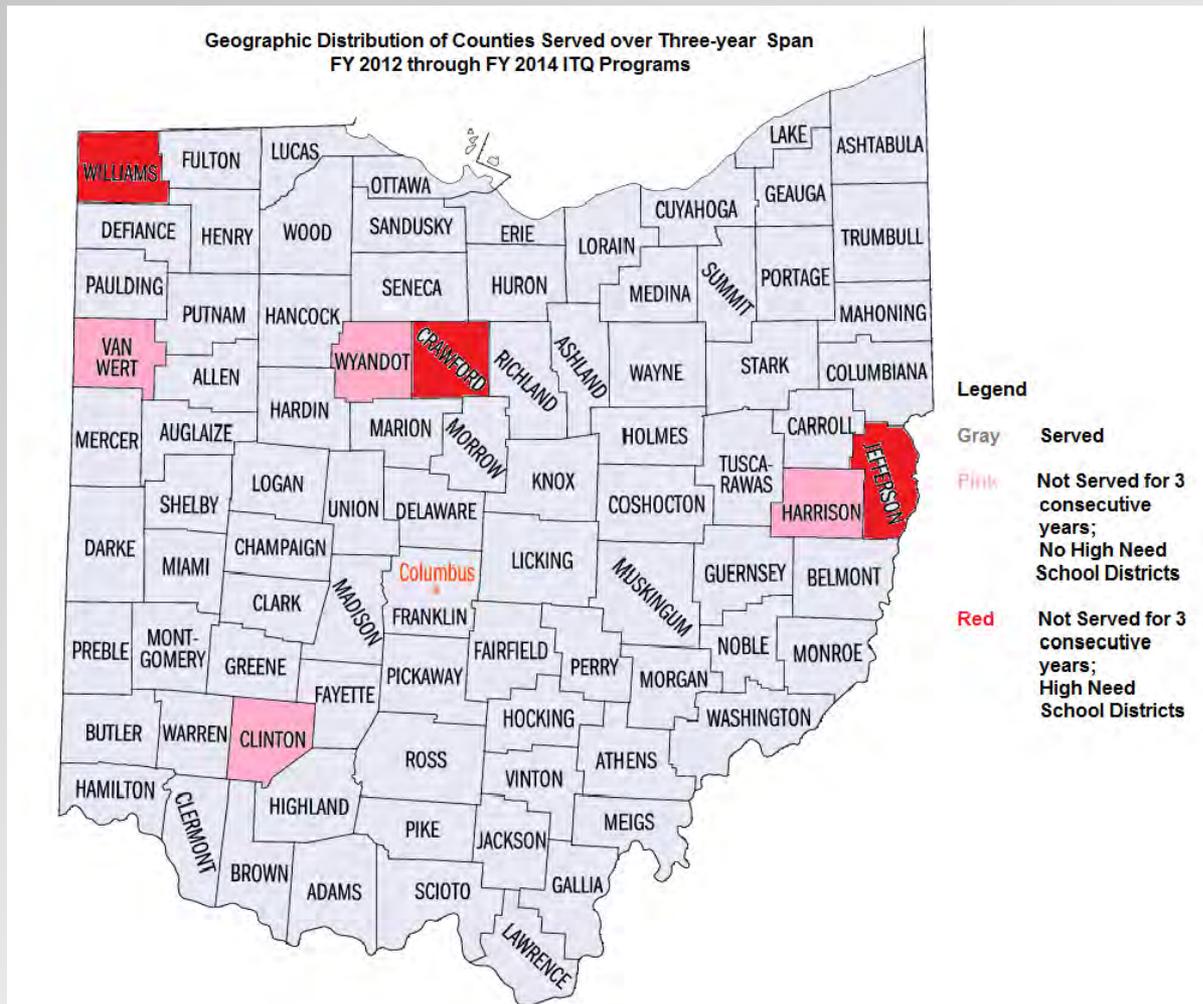
- 1403 teachers; 1309 from 216 public school districts in 66 counties
- 82,930 students; 46% high poverty

High Need Local Education Agencies

- 38% of high need districts served (72 of 188)
- 59% of public school participants from high need districts (768 of 1309)
- 50% of public schools served were high need districts (247 of 492)

Improving Teacher Quality Program (ITQP)

Counties Served FFY 2012 – FFY 2014



Improving Teacher Quality Program (ITQP)

Sample Professional Development Projects

11 FFY 2014 grants were research-based programs, e.g.,

- Operation Physics (American Institute of Physics)
- Math Teachers Circle (American Institute of Mathematics)

2 FFY 2014 had partnerships with industry and business

- Science Teaching for Ohio's New Economy (STONE)
-- with Ohio Aggregate & Industrial Minerals Association
- Partners in Integrated Earth Systems (PIES)
-- with Duke University Marine Lab and Potash Corporation

Several were long running, several new (10 in FFY 2014), and some have expanded

- Conceptual Chemistry (since FFY 1994)
- Engineering is Elementary (new in FFY 2014)
- Modeling Instruction for Physics (expanded content and geographic locations)

Improving Teacher Quality Program (ITQP)

Benefits

Strengths of ITQP

- Educators have opportunities to stay current and improve
- Professional development offerings interweave content and pedagogy
- Projects offer a high level of immersion, support and interaction
- Projects have positive outcomes
 - Internal/external evaluations of individual grant projects indicate learning gains for teacher participants as well as improvements in student achievement

Improving Teacher Quality Program (ITQP)

Future Considerations

Recommendations for Future Offerings

- Emphasize assessment of both teacher participant outcomes and student learning
- Continue to encourage geographic distribution of professional development opportunities state-wide

GEAR UP: Overview

Gaining **E**arly **A**wareness and **R**eadiness for **U**ndergraduate **P**rograms

- Serves low-income, disconnected, or traditionally underserved students
- Seven year term (2014 – 2021)
- Services: comprehensive mentoring, outreach, and supportive services
- Provides scholarships for students going on to college



GEAR UP: Goals

- **Goal 1:** Increase the academic performance and preparation for postsecondary education for GEAR UP Ohio students
- **Goal 2:** Increase the rates of high school graduation and enrollment and persistence in postsecondary education for GEAR UP Ohio students
- **Goal 3:** Increase GEAR UP Ohio students' and their families' knowledge of postsecondary options, preparation, and financing
- **Goal 4:** Ensure that GEAR UP Ohio consortia will become self-sustaining; develop civic participation in their programs and spread awareness and replication in other schools and communities

GEAR UP: Consortia Sites/Partners

CROOKSVILLE

- Crooksville Exempted Village Schools
- Muskingum County Community Foundation
- Zane State College

MARION

- Marion City Schools
- United Way of Marion County
- The Ohio State University at Marion

NORWOOD

- Norwood City Schools
- Cincinnati Youth Collaborative
- UC Blue Ash College, University of Cincinnati

PARMA

- Parma City Schools
- College Now Greater Cleveland
- Cuyahoga Community College, Western Campus

GEAR UP: The Year Ahead

- **Focus Area 1:** Mathematics Enhancements
- **Focus Area 2:** Improve Transfer Knowledge/Connections
- **Focus Area 3:** Increase Parent/Family Involvement
- **Other:** First, biennial evaluation report due

GEAR UP: Looking Forward

- Build and expand partnerships
 - Other districts
 - Other colleges and universities
 - Community organizations & businesses
- Develop and share resources
 - Locally
 - Statewide
 - Nationally

P-16 Initiatives

Populations Served

2015-2016 Academic Year

- 608 Public Districts
 - 188 Designated high needs
- Approximately 1.8 Million Public Students
- Approximately 111,000 Public Teachers
- Approximately 5,600 Educator Preparation Graduates



Questions?

Ohio Federal and Military Jobs Commission (OFMJC) Support

Ohio Federal Research Network (OFRN) Improving Ohio's Economy Through R&D



WSU - Dennis Andersh

OSU - Marty Kress

Ohio Board of Regents

15 September 2016



OFMJC Research Team Strategy

- Organize and resource collaborative research initiatives within the University System of Ohio that align with and support priority mission requirements at Wright-Patterson AFB and NASA Glenn to grow our research talent base, attract outside public and private investment and to retain and create new jobs in Ohio.
 - Build on Ohio's three primary research assets: Wright-Patterson AFB, and NASA Glenn Research Center (GRC) and Ohio's Research Universities.
 - Support the national priority research missions of both WPAFB and GRC by leveraging external talent, infrastructure and financial resources around their strategic requirements.
 - Ensure implementation across Ohio's university system is focused on opportunities to successfully execute research and technology transition initiatives in both federal and commercial markets.
 - Provide the opportunity to leverage the federal investments in AFRL and NASA GRC to create economic development opportunities in other sectors of the economy through public-private partnership creation.
 - Align and integrate with existing and other evolving State initiatives (i.e., Ohio Space Plan, OUAS Center, JobsOhio, etc.)



Joint WPAFB/NASA Glenn Priorities

AFRL Priorities Reviewed and Refined OFMJC Research Priorities

- Human Performance/ Health Sciences
- Hypersonics
- Directed Energy Weapons (Lasers)
- Autonomy
- C4ISR
- LVC
- Materials/ Manufacturing
- Propulsion

NASA Glenn Priorities

- Hybrid Electric Propulsion
- Advanced Communications
- Solar Electric Propulsion
- Energy Storage (Enabler for others)
- Materials and Manufacturing

NASIC Priorities

- Cyber
- Data analytics
- C4ISR
- Modeling/Simulation/Analysis
- Hypersonics
- Directed Energy

Naval Medical Research Unit (NAMRU) Priorities

- Human performance
- Human physiology
- Manned / unmanned aeromedical ops
- Toxicology
- Risk assessment



FRN Funding Focus

	BASIC Research and Development	Applied Research and Development	Advanced Technology Development	Demonstration and Validation	Engineering and Manufacturing	RDT&E Management Support	Operational Systems Test and Validation
DOD RDT&E Level	6.1	6.2	6.3	6.4	6.5	6.6	6.7

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FRN COE Focus
Mission Application
Research for
NASA, AFRL, NAMRU
and NASIC



<u>NASA</u>	TRL1	TRL2	TRL 3	TRL 4	TRL 5	TRL 6	TRL 7	TRL 8	TRL 9
Basic Principles	Concepts Application Focus	Analysis and Experiments	Concept and Breadboard in Laboratory	Component and Breadboard Validation in Realistic Environments	System / Subsystem prototype demonstration in realistic Environment	System prototype demonstration in Operational Environment	Actual system completed and qualified through test and demonstration	Actual system proven through successful mission operations	



WPAFB / GRC Mission Applications Driven Centers of Excellence (COEs)

Projected Growth over 5 years: 2,500 new jobs for Ohioans
\$350 million in new federal research contracts to Ohio based universities and companies

Application Domains

Lead
LCCC, CSU

Application Domains	Human Performance and Health Sciences	Power and Propulsion	Materials and Manufacturing	Energy Storage/Integration	Command, Control, Communications Computing Intelligence Surveillance & Reconnaissance (C4ISR)	Advanced Communications Precision Navigation and Targeting (PNT)
Aerospace Systems <ul style="list-style-type: none"> Manned Remotely Piloted Hypersonic 	<ul style="list-style-type: none"> Autonomy LVC Training Neuroscience Aerospace Physiology /Toxicology Biosensors / Biomarkers Human Machine Teaming RPA Operations 	<ul style="list-style-type: none"> Hybrid Electric Power and Propulsion Solar Electric Power and Propulsion Advanced Turbine Engines Energy / Fuels Energy Storage / Retrieval On-board Power Systems 	<ul style="list-style-type: none"> Nanomaterials Sustainment Additive Manufacturing Ceramics Composites Materials for Adverse Conditions Flexible Electronics 	<ul style="list-style-type: none"> Batteries Supercapacitors Green Technologies Rapid charge / discharge cycling Micro-devices 	<ul style="list-style-type: none"> Human- Centered ISR Data Analytics Data Compression / Analytics Processing Exploitations and Dissemination Infrared (IR), Electro-optical (EO), Laser, RF, Hyperspectral, Acoustic, & Radar Sensors Space Situational Awareness Electronics Warfare (EW) 	<ul style="list-style-type: none"> Directed Energy Offensive and Defensive EW Novel Payloads Avionics Next Gen Global Positioning Systems (GPS) Space Communications Tactical Communications RF Spectrum Management FCC Advanced Algorithms Digital Systems
Space Systems <ul style="list-style-type: none"> Manned Unmanned 						
Cyber Systems <ul style="list-style-type: none"> IT Weapon Systems 						
Modeling/Simulation/Analysis						
Commercialization & Technology Transition Small / Med Business Growth Connections to Business						
Workforce Development <ul style="list-style-type: none"> STEM Skilled Unskilled 						
Primary Support: All Universities to specifically include UC, UD, KSU, Miami, BGSU, Central WSU, Stark State, Clark, UA, UT, CSU, Lorain, Case, Sinclair, OU, OSU	Existing AHEAD	New				
	Lead: WSU Primary Support: UC, UT, OSU, Case, UD, KSU, CSU, Sinclair, Lorain, Clark, Jobs Created: 575 Contracts Awarded: \$167M Private Sector Investment: \$150M Project 25% Y/Y Growth	Lead: OSU Primary Support: UC, UD, UA, UT, CSU, Lorain Potential Contracts: \$100M Potential Private Sector Investment: \$50M	Lead: UD Primary Support: YSU, OSU, UA, Case, UC, UT, CSU, KSU, Lorain, Sinclair, Clark, Central Potential Jobs : 600 Potential Contracts: \$150M Potential Private Sector Investment: \$75M	Lead: Case Primary Support: UT, OSU, UD, UC, CSU, Lorain Potential Jobs : 200 Potential Contracts: \$50M Potential Private Sector Investment: \$10M	Lead: WSU/OSU Primary Support: UD, OU, BGSU, Case, UT, UC, Miami , Sinclair Potential Jobs: 600 Potential Contracts: \$150M Potential Private Sector Investment: \$75M	Lead: OU Primary Support: WSU, OSU, KSU, UD, Miami, Lorain Potential Jobs : 300 Potential Contracts: \$75M Potential Private Sector Investment: \$25M



FRN Funding Allocation - Update

Total State Operating Funding for FY 16 and 17		\$ 25 M
▪ Aerospace Workforce Development Legacy Programs	(\$1.5M/Yr)	\$(3 M)
▪ FRN Admin., Financial, and Organizational Support	(\$1M/Yr)	\$(2 M)
▪ Funding Available for 6 COEs' Research and Business Plans		\$ 20 M
▪ Tech Commercialization/Workforce Development Support (LCCC/CSU)		\$(2 M)
▪ Round 1 Proposal Funding Allocation ~\$7.1 M – Avg. Project Award - \$695k		\$(7.1 M)
▪ HPHS (WSU)	\$1.5 M	
▪ OCPP (OSU)	\$2 M	
▪ M&M (UD/UDRI)	\$2 M	
▪ PRESIDES (CASE)	\$1.6 M	
▪ Round 2 Proposal Funding Allocation - \$8 M		
▪ AFRL/DARPA Challenge Problem Set-Aside - \$3 M		



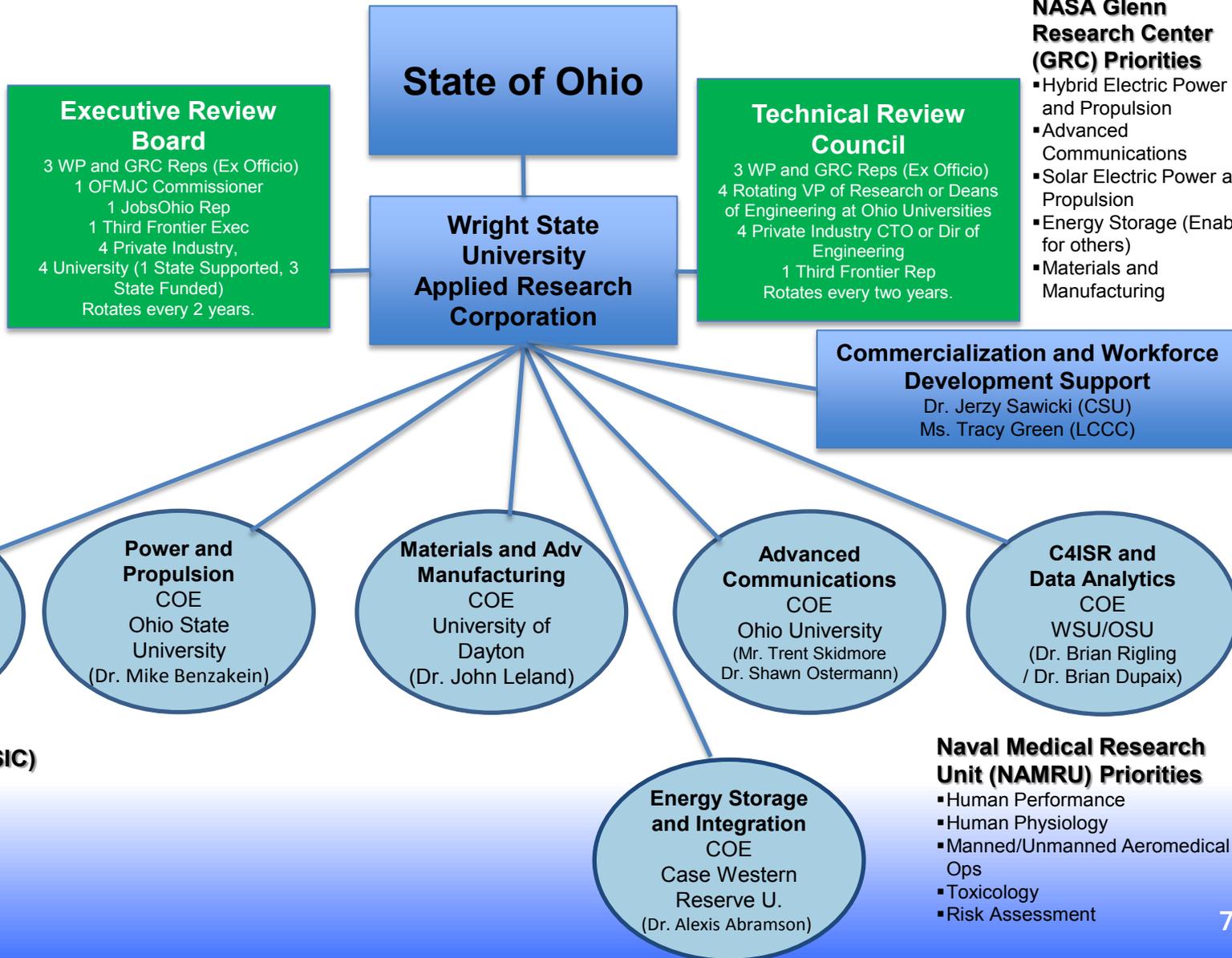
Construct for Ohio Centric Center of Excellence (COE) Ohio Federal Research Network (OFRN)

Air Force Research Laboratory (AFRL) Priorities

- Human Performance / Health Care
- Hypersonics
- Directed Energy Weapons (Lasers)
- Autonomy
- C4ISR
- LVC
- Materials / Manufacturing
- Propulsion

NASA Glenn Research Center (GRC) Priorities

- Hybrid Electric Power and Propulsion
- Advanced Communications
- Solar Electric Power and Propulsion
- Energy Storage (Enabler for others)
- Materials and Manufacturing



National Air and Space Intelligence Center (NASIC) Priorities

- Cyber
- Data analytics
- C4ISR
- Modeling/Simulation/Analysis
- Hypersonics
- Directed Energy

Naval Medical Research Unit (NAMRU) Priorities

- Human Performance
- Human Physiology
- Manned/Unmanned Aeromedical Ops
- Toxicology
- Risk Assessment

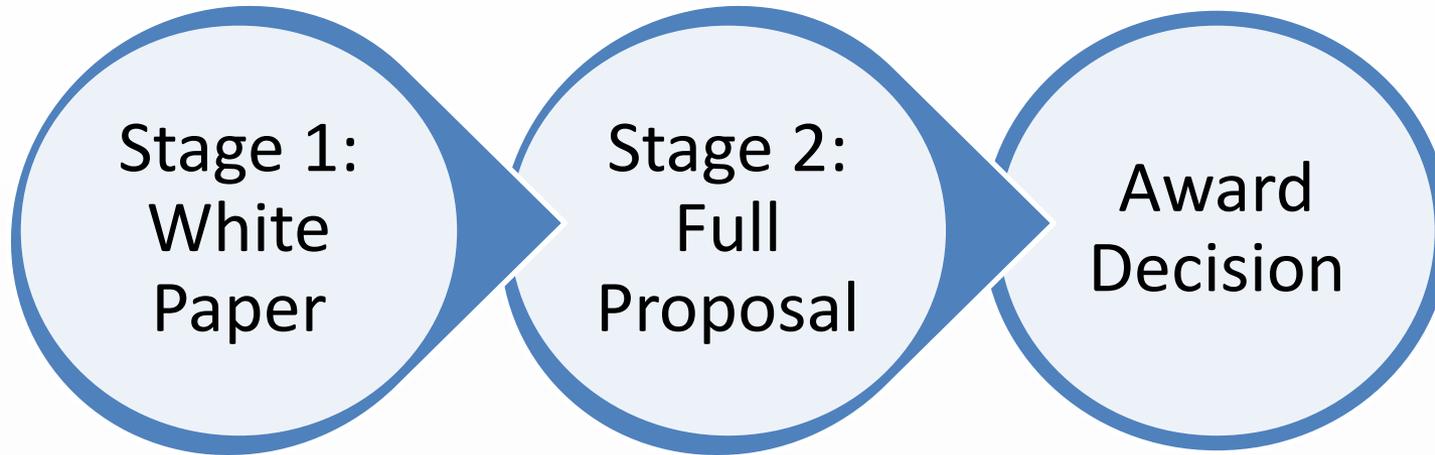


Reviewer (ERB and TRC) Composition

Executive Review Board	Designee	Technical Review Council	Designee
Cleveland State President	Dr. Ron Berkman	UT VP of Research	Dr. Bill Messer
OSU Dean of Engineering	Dr. Dave Williams	UC Dept Head AEEM, OAATC	Dr. Paul Orkwis
WSU President	Dr. Dave Hopkins	OU Dean of Engineering	Dr. Dennis Irwin
LCCC President	Dr. Roy Church	CWRU VP of Research	Dr. Suzanne Rivera
OFMJC	Gary O'Connell	UDRI	Dr. John Leland
NASA Glenn Director	Dr. Janet Kavandi	OFMJC	Don Campbell
AFRL	Jack Blackhurst	NASA Glenn	Sandra Reehorst
NASIC	Curt Rowland	AFRL	Chris Ristich, Stephanie Miller
NAMRU-D	Richard Arnold	NASIC	Dale Benedetti, Mark Brown
Jobs Ohio	Glenn Richardson	NAMRU-D	Richard Arnold
Ohio National Guard	Maj Gen Mark Bartman	Ohio National Guard	Brig Gen Gregory Schnulo
Ohio Third Frontier	Karen Conrad	Ohio Third Frontier	Paul Jackson
Industry 1 Chair	Ricky Peters, Ascend	Industry 1	Dr. Carlos Grodsinsky
Industry 2	Salvatore Miraglia, Jr.	Industry 2	Ed Morris
		Industry 3	Dr. T. S. Sudarshan
		Industry 4	Dr. Darren McKnight
		Industry 5	Dr. Suguna Rachakonda



FRN Peer Review Process



1. White Papers are reviewed by the FRN Technical Review Council (TRC).
2. Full Submissions are reviewed by FRN Technical Review Council (TRC) and the FRN Executive Review Board (ERB).
3. Review recommendations are presented to the Federal Military Jobs Commission (FMJC) and the Ohio Department of Higher Education (ODHE) for approval of funding.



Round 1 Overall Ranking based on Technical Strength, Mission Alignment, and Jobs

RANK	COE	TITLE
1	HPHS	SAPHYRE
2	PRES	HI ENERGY DENSITY LI-ION BATTERY BASED ON ADVANCED SILICON ANODES
3	HPHS	IMPROVING HEALTHCARE TRAINING AND DECISION MAKING THROUGH LVC
4	PRES	HIGH ENERGY/POWER, LONG CYCLE LIFE, THERMALLY SAFE LI-S BATTERY
5	OCPD	HYBRID/TURBO-ELECTRIC PROPULSION
6	PRES	HI-PERFORMANCE MULTIFUNCTIONAL STRUCTURAL ENERGY STORAGE
7	M&M	ADAPTIVE BIO INSPIRED AEROSPACE STRUCTURES ACTUATED BY SHAPE
8	M&M	HIGH -TEMP MAGNETIC MATERIALS
9	OCPD	CONTROL ARCHITECTURE FOR INTELLIGENT AVIATION ELECTRIC POWER SYSTEMS
10	M&M	HIGH PERFORMANCE PLASTIC SUBSTRATES FOR FLEXIBLE ELECTRONICS
11	HPHS	COLLABORATIVE MICRO-ROBOT TEAMS IN CONSTRAINED WORLDS
12	C4ISR	FORWARD AND REVERSE ENGINEERING TOOLS AND WORKFORCE DEVELOPMENT FOR AFRL AND NASIC
13	C4ISR	DATA ANALYTICS AND DATA MINING FOR WORLD WIDE STRUCTURED AND UNSTRUCTURED DATA
14	C2PNT	CHCP- COGNITIVE ROUTING IN DTN NETWORKS FOR HYBRID RF/FSO COMMUNICATIONS (3 YEAR)
15	C2PNT	SMALL UNMANNED AIRCRAFT SYSTEMS IN LOW ALTITUDE CHALLENGED ENVIRONMENTS

Priority 1

Priority 2

Priority 3
Not Funded



Round 1 Technical Awardees

Awardee	COE	Award Amount	Partners
Case Western Reserve University	The Partnership for Research in Energy Storage (PRESIDES) Center of Excellence	\$1.6 million: (\$800k in year 1; \$800k in year 2)	University Partners: Ohio State University, University of Akron, University of Toledo, University of Dayton Industry Partners: Lubrizol Advanced Materials, Inc., pHMatter LLC, GrafTech International Holdings Inc., CRG Inc., UES Inc., CAR Technologies LL, Akron Polymer Systems Inc.
University of Dayton	The Materials and Manufacturing (M&M) Center of Excellence	\$2 million: (\$1MM in year 1; \$1MM in year 2)	University Partners: University of Akron, Case Western Reserve University, Ohio State University, University of Cincinnati, University of Toledo, Ohio University, Youngstown State University Industry Partners: Lucintech Inc., Orbital Research Inc., Engineered Material Systems Inc., Hana Microdisplay Technologies Inc., Universal Technology Corporation, GE Aviation, Lincoln Electric, Norman Noble Inc., Lakeshore Cryotronics Inc., Eaton, ABB Inc., Electrodyne
Ohio State University	The Ohio Center for Power and Propulsion (OCP) Center of Excellence	\$2 million: (\$750k in year 1; \$750k in Year 2; \$500k in year 3)	University Partners: University of Akron, University of Dayton Industry Partners: Orbital Research, Inc., Emerson Network Power, Lakeshore Cryotronics, IAP Research Inc., Vanner Group, Meggitt-USA Inc., Parker Hannifin Corporation, Aerospace Group, GE Aviation, GE EPISCENTER
Wright State University	The Human Performance and Health Science (HPHS) Center of Excellence	\$1.5 million: (\$745k in year 1; \$755k in year 2)	University Partners: University of Cincinnati, University of Toledo, AFIT, Case Western Reserve University Industry Partners: University of Toledo Medical Center, Dayton Children's Hospital, The Perduco Group, University Hospitals Case Medical Center, University of Cincinnati Medical Center, Premier Health, Advanced TeleSensors, Red Bull



Leadership

Mr. Dennis Andersh – OFRN Program Director
Mr. Marty Kress – OFRN Co-Director
Mr. Hugh Bolton – OFRN Commercialization
Mr. Anthony Hinojosa – OFRN Program Manager
Ms. Becky Mescher – OFRN Program Coordinator

Round 2 TRC Reviewers

TRC Chair

Dr. Carlos Grodsinsky – ZinTech

Academic Members

Dr. Jeff Dill - OU
Dr. John Leland - UDRI
Dr. William Messer - UT
Dr. Phil Taylor - UC
Dr. Stephanie Endy - CASE

Industry Members

Dr. Suguna Rachakonda – Cleveland Clinic
Dr. T.S. Sudarshan – Materials Modification, Inc
Dr. Darren McKnight – Integrity Applications, Inc
Mr. Ed Morris - America Makes

Other Members

Mr. Paul Jackson – Ohio 3rd Frontier
Brig. Gen Gregory Schnulo - TAG
OFMJC Gary O’Connell
OFMJC Don Campbell

Government Sponsors

NAMRU-D

Dr. Richard Arnold

NASIC

Mr. Dale Benedetti
Mr. Mark Brown

AFRL

Dr. Christopher Ristich
Dr. Stephanie Miller

NASA-GRC

Dr. Sandy Reehorst
Dr. Tim McCartney



Round 2 Evaluation Criteria

FRN's Rank Order for the Evaluation Criteria.

1.1.1 Alignment –

- The proposal demonstrates how applications/user driven requirements are derived from and aligned with the emerging mission and research focus areas of AFRL, NASIC, NAMRU-D, and/or NASA-GRC.
- The project has an identifiable Government Sponsor at AFRL, NASIC, NAMRU-D, and/or NASA-GRC.
 - The Government Sponsor(s) is/are identified by name and organization with contact information as required in the individual Project Summary
- The Government Sponsor(s) provides a clear statement of the research requirement being addressed and the overarching technical goal for the project.
 - There is a demonstrated relationship with the Government Sponsor(s), either as the result of documented development meetings or previous relevant working engagements.

1.1.2 Collaboration

- The proposal describes the degree of collaboration with other universities in Ohio, other OFRN COEs and industry partners.
- The project represents a truly integrated approach to meeting the research objective of a federal agency, rather than simply a collection of independent sub-projects.
- The project identifies the collaborators' scope of work and alignment to their subject matter experts and experience within the proposed project work scope.
- For any project that relies upon collaboration across multiple COEs there is a clearly stated single COE lead for the project.



Round 2 Evaluation Criteria

FRN's Rank Order for the Evaluation Criteria

1.1.3 Technical

- The proposal provides a clear description of the project objective, expected outcomes, and how those outcomes benefit Federal research centers and industry members.
- The proposal provides a detailed technical description that indicates how the research objective advances knowledge and extends the state-of-the-art in the field.
- The proposal provides a detailed technical approach that can be reasonably expected to achieve the desired outcomes.
- The proposal clearly identifies deliverables, major milestones, and costs along with potential risks and mitigation strategy.



Round 2 Evaluation Criteria (*cont'd*)

FRN's Rank Order for the Evaluation Criteria

1.1.4a Attracting New Investments

- OFMJC state funds are an investment intended to attract additional federal, foundation or industry funding:
 - The proposal describes how the awarding of State funds through the OFRN program enhances the COE's ability to win additional new work and funding.
 - » Shows the level and timing of expected new funding.
 - The proposal incorporates the key targets for each project from which to secure additional funding.
 - » Lists the key contacts for target organizations.
 - The proposal states how the project will improve the long-term competitiveness of Ohio's universities, federal labs and/or industries.
 - The proposal lists new industry/government opportunities that the COE may potentially be able to attract as a result of the new capabilities and capacity. It also clearly shows how the OFRN funding will lead to other funding sources and how each component supports a COE strategic vision.

1.1.4b Cost Share

- The level of committed cost share is an important factor in evaluating projects because it is a measure of the alignment with and commitment by industry partners to the COE and its projects. The monetary value of the proposed cash cost share commitment must represent a specific new commitment to the project(s). It will be the responsibility of the COE to insure that cost share commitments are met or exceeded, and that all reporting requirements to the OFRN are met.
- The value of committed cost share from university and industry partners is clearly identified to each contributor.
 - The proposal breaks out the percentage of each cost share component that will support the operation of the COE and the technical research.
- Cost share proposed by the COE and all sub-awardees is firmly committed, from known sources and available at the time of proposal submittal with no contingencies or conditions.
- Committed Cost Share is required to be a 1:1 match in value with the requested OFRN funding. Although this requirement of a 1:1 ratio is not a Go/No Go criteria, the level achieved will affect the scoring of the proposal against this evaluation criterion.



Round 2 Evaluation Criteria (*cont'd*)

FRN's Rank Order for the Evaluation Criteria

1.1.5a Job Creation and Workforce Development

- The proposal clearly states the number of jobs the project will create.
- The proposal addresses the degree of alignment with Ohio industry partners and the potential for creating industry jobs. It clearly specifies the number and types of jobs that will be created including a breakout of the number of jobs created per year over the next 5 years.
- The proposal states the workforce needs associated with the proposed project, including both technician and skilled/leadership level positions that are anticipated to be utilized within five years.
- The proposal addresses the workforce needs of the region and the State of Ohio, in terms of occupational groups, identifying labor market forecasts for those occupations using OhioMeansJobs, Ohio Department of Job and Family Services and other sources as appropriate.
- The proposal clearly describes how the project will satisfy the workforce demands of the industry and the government, and how any innovations between industry and educators will help meet these workforce needs.
- The proposal identifies any short-term training or education required for the new workforce that will be created by these projects.

1.1.5b Commercialization

- The proposal provides a clear description of the commercialization strategy and identifies specific commercial opportunities as developed in collaboration with C&WD Team.
- The proposal lists Intellectual Property (IP) or other deliverables the project will generate that may be commercialized or transitioned to commercial applications beyond the original federal requirement.
 - Describes how the IP commercially differentiates and provides market opportunity as it relates to project deliverables.
- The proposal clearly demonstrates the existence of commercial interest, especially by Ohio based companies, in the results of this research or any new IP that may be generated.
- The proposal discusses how existing and background IP contribute to the project objectives and research outcomes.
- The proposal provides details of how the IP rights of the team, separate organizations and individual research contributors will be managed.



Round 2 Evaluation Timeline

Date	Description
WHITE PAPERS	
January 30, 2016	Call for White Papers issued
February 5, and 12 2016	Required Proposal Training
March 30, 2016	White Papers Due
Week of April 4, 2016	White Paper Review by FRN TRC
Week of April 11, 2016	COE Lead Meeting in preparation of RFP Process
PROPOSALS	
April 29, 2016	RFP issued
May 12, 2016	RFP Proposal Training for all PIs and COE Leads
June 30 , 2016	Proposals Due
July 1, 2016	Round 2 Proposals sent to TRC members for review
July 18, 2016	TRC Individual Proposal Reviews due by 2pm
July 18-21, 2016	OFRN Staff Composites TRC Round 2 Proposal Reviews
July 22, 2016	Round 2 TRC Proposals Review – (Columbus)
July 26, 2016	TRC written reviews due
August 2 & 3, 2016	TRC Round 2 Review Follow-up Telecom
August 22, 2016	Q&A Round 2 COE Project Response due by 5pm
August 24, 2016	TRC Round 2 Proposal Review – Final (Columbus)
August 25, 2016	TRC written reviews (final) due by 5pm
August 30, 2016	ERB Round 2 Proposal Selection Review (Columbus)
September 2, 2016	Round 2 Approval Award Letters Released to COE Leads
September 9, 2016	Updated SOWs / Budgets due
September 16, 2016	Contracts/Contract Modifications Released to COE Leads
September 26, 2016	Round 2 Program Start Date / COE Lead Contracts Fully Executed

White Paper Grouping by Center of Excellence (COE)

Selected
For Full
Proposal

Not
Selected

C2PNT	Communications and Precision Navigation and Timing.
C4ISR	Command Control Communications and Computing Intelligence and Surveillance and Reconnaissance
HPHS	Human Performance and Health Sciences
M&M	Materials and Manufacturing
OCPP	Power and Propulsion
Presides	Energy Storage and Integration.



Full Proposal AFRL Ranking

COE	Project Title	RED/YELLOW/GREEN	NASA-GRC	AFRL	NASIC	NAMRU-D
C2PNT COE	Intelligence Channel Sensing	1 company has conflict concern. Also concerned about maturity of comm. Partners. Would recommend that you seek other partners	1/8	1/13	2/3	
OCPD COE	Adv. Turbine Cooling	Cost-Share from Honeywell is committed however there is no in-kind and if they had a partner pull out due to technical relevance, will Honeywell pullout as well once they see the project details?	3/8	2/13		
HPHS COE	Advanced Cognitive and Physical Sweat Biosensing			3/13		2/2
C4ISR COE	Persistent Location with Spectrum Sensing (PLSS)	Fatally lacking in commercialization and job creation and are too great to overcome this round, however with the integration of a stronger industrial partner would benefit this proposal in a future round.	4/8	4/13		
PRESIDES COE	Supercapacitors with both high energy density and power density for directed energy weapons and onboard energy storage systems for aircrafts hybrid electric propulsion	Commercialization strategy is not clearly presented across all tasks and has limited end customers identified. This is an innovative projects that needs more incubation in the research laboratories while developing a strong commercialization strategy and industry partnerships.	6/8	5/13		
PRESIDES COE	Development of a High Power, High Energy, Safe Li-Ion Battery for Aircraft Applications	Team should focus efforts on developing a robust component of the battery. The proposal was unfocused and lacks a plan and path to deliver the milestones .There was also a major lack of direct involvement with industry.	7/8	6/13		
C2PNT COE	Test & Evaluation of Autonomous Systems (TEAS)	Letters committing cost share from university partner were not evident in the review materials.		7/13		
C4ISR COE	Human-Centered Big Data (HCBG)	Proposal lacked a clear commercialization strategy as evidenced by the lack of involvement by industry.		8/13	1/3	
M&M COE	Low Cost Manufacturing for Limited Production Aircraft Composite Structures	The commercialization strategy, identification of specific applications and current commercial services should be reviewed. Would be beneficial to identify two or three specific components and materials as well as provide the actual procedures that would be developed to demonstrate value and define the metrics to validate the usefulness of the modeling tools. Level of Maturity and schedule to the scope of work should be discussed.	5/8	9/13		
C4ISR COE	Forward and Reverse Engineering Tool (FRET) and Workforce Development	Concerns were noted regarding a lack of detail on the commercialization strategy, cost share, attracting new investments and collaboration.		10/13	3/3	
OCPD COE	UAV Icing Protection		8/8	11/13		
OCPD COE	Integrated Energy and Power Management	Commercialization strategy and economic impacts of this proposal are nebulous and insufficient to meet the programs aims. If the team can conduct additional development work would recommend submission to a future round.	2/8	12/13		
HPHS COE	Motion Sickness Interactions with Spine Disorders (MOSSD)	Concerns were noted regarding a lack of detail on the commercialization strategy, cost share, attracting new investments and collaboration.		13/13		1/2



Full Proposal NASA-GRC Ranking

COE	Project Title	RED/YELLOW/GREEN	NASA-GRC	AFRL	NASIC	NAMRU-D
C2PNT COE	Intelligence Channel Sensing	1 company has conflict concern. Also concerned about maturity of comm. Partners. Would recommend that you seek other partners	1/8	1/13	2/3	
OCPD COE	Integrated Energy and Power Management	Commercialization strategy and economic impacts of this proposal are nebulous and insufficient to meet the programs aims. If the team can conduct additional development work would recommend submission to a future round.	2/8	12/13		
OCPD COE	Adv. Turbine Cooling	Cost-Share from Honeywell is committed however there is no in-kind and if they had a partner pull out due to technical relevance, will Honeywell pullout as well once they see the project details?	3/8	2/13		
C4ISR COE	Persistent Location with Spectrum Sensing (PLSS)	Fatally lacking in commercialization and job creation and are too great to overcome this round, however with the integration of a stronger industrial partner would benefit this proposal in a future round.	4/8	4/13		
M&M COE	Low Cost Manufacturing for Limited Production Aircraft Composite Structures	The commercialization strategy, identification of specific applications and current commercial services should be reviewed. Would be beneficial to identify two or three specific components and materials as well as provide the actual procedures that would be developed to demonstrate value and define the metrics to validate the usefulness of the modeling tools. Level of Maturity and schedule to the scope of work should be discussed.	5/8	9/13		
PRESIDES COE	Supercapacitors with both high energy density and power density for directed energy weapons and onboard energy storage systems for aircrafts hybrid electric propulsion	Commercialization strategy is not clearly presented across all tasks and has limited end customers identified. This is an innovative projects that needs more incubation in the research laboratories while developing a strong commercialization strategy and industry partnerships.	6/8	5/13		
PRESIDES COE	Development of a High Power, High Energy, Safe Li-Ion Battery for Aircraft Applications	Team should focus efforts on developing a robust component of the battery. The proposal was unfocused and lacks a plan and path to deliver the milestones. There was also a major lack of direct involvement with industry.	7/8	6/13		
OCPD COE	UAV Icing Protection		8/8	11/13		
HPHS COE	Advanced Cognitive and Physical Sweat Biosensing			3/13		2/2
HPHS COE	Motion Sickness Interactions with Spine Disorders (MOSSD)	Has this product been approved by the FDA? "The proposal doesn't discuss the IP landscape and freedom to operate based on other IP that is currently under prosecution. Its not clear as to how SpineDynX will generate a cLMM application and diagnostics tool that can be commercialized without IP."		13/13		1/2
C4ISR COE	Forward and Reverse Engineering Tool (FRET) and Workforce Development	Concerns were noted regarding a lack of detail on the commercialization strategy, cost share, attracting new investments and collaboration.		10/13	3/3	
C2PNT COE	Test & Evaluation of Autonomous Systems (TEAS)	Letters committing cost share from university partner were not evident in the review materials.		7/13		
C4ISR COE	Human-Centered Big Data (HCBD)	Proposal lacked a clear commercialization strategy as evidenced by the lack of involvement by industry.		8/13	1/3	



Full Proposal TRC Rankings Prior to Q/A

COE	Project Title	NASA-GRC	AFRL	NASIC	NAMRU-D	NTE	Amount Asking	Cost Share Committing	Total Projected Jobs
HPHS COE	Advanced Cognitive and Physical Sweat Biosensing		3/13		2/2	\$1,000,000	\$915,001	\$1,444,516	103 over 5 years
M&M COE	Low Cost Manufacturing for Limited Production Aircraft Composite Structures	5/8	9/13			\$1,100,000	\$1,090,420	\$1,413,140	73 over 2 years
OCPP OE	UAV Icing Protection	8/8	11/13			\$1,000,000	\$1,000,000	\$1,345,499	171 over 5 years
HPHS COE	Motion Sickness Interactions with Spine Disorders (MOSSD)		13/13		1/2	\$1,500,000	\$1,375,000	\$1,137,829	55-68 over 5 years
OCPP OE	Adv. Turbine Cooling	3/8	2/13			\$1,000,000	\$999,838	\$1,143,721	96 over 5 years
C4ISR COE	Forward and Reverse Engineering Tool (FRET) and Workforce Development		10/13	3/3		\$750,000	\$670,064	\$940,573	75
C2PNT COE	Test & Evaluation of Autonomous Systems (TEAS)		7/13			\$1,500,000	\$1,499,939	\$2,716,594	84 over 5 years
OCPP OE	Integrated Energy and Power Management	2/8	12/13			\$850,000	\$694,818	\$700,898	40 over 5 years
PRESIDES COE	Supercapacitors	6/8	5/13			\$500,000	\$500,001	\$698,109	30 over 5 years
C4ISR COE	Human-Centered Big Data (HCBD)		8/13	1/3		\$1,400,000	\$1,343,600	\$607,557	40
C4ISR COE	Persistent Location with Spectrum Sensing (PLSS)	4/8	4/13			\$620,000	\$590,027	\$608,100	10-20 over 5 years
C2PNT COE	Intelligence Channel Sensing	1/8	1/13	2/3		\$800,000	\$800,002	\$821,356	120 over 5 years
PRESIDES COE	Development of a High Power, High Energy, Safe Li-Ion Battery for Aircraft Applications	7/8	6/13			\$500,000	\$544,270	\$975,308	41 over 5 years



Process After Initial TRC Review and Meetings

- Formulated questions for each of the COEs to verify key points.
 - Secure additional info required to make prudent decisions.
 - Eliminate any COIs .
- Provided questions to each COE and PI and gave them 2 weeks to respond to the questions.
- FRN Leadership was then asked to rank order the evaluation criteria and that rank order was used for the final selections.
- TRC had a follow-up meeting on Aug 24th as a group to review responses to the questions.
- Based on the Q/A responses, the TRC made the following final recommendations.



TRC Recommended Selections and Award Levels

COE	Project Title	NASA-GRC	AFRL	NASIC	NAMRU-D	NTE	Amount Asking	Cost Share Committing	Total Projected Jobs	Requested Funding	Recommended Funding
C2PNT COE	Intelligence Channel Sensing	1/8	1/13	2/3		\$800,000	\$800,002	\$821,356	120 over 5 years	\$800,002	\$800,002
C4ISR COE	Human-Centered Big Data (HCBD)		8/13	1/3		\$1,400,000	\$1,343,600	\$726,557	40	\$1,343,600	\$1,200,000
OCPP OE	Adv. Turbine Cooling	3/8	2/13			\$1,000,000	\$999,838	\$1,143,721	96 over 5 years	\$999,838	\$999,838
HPHS COE	Advanced Cognitive and Physical Sweat Biosensing		3/13		2/2	\$1,000,000	\$915,001	\$1,444,516	103 over 5 years	\$915,001	\$915,001
HPHS COE	Motion Sickness Interactions with Spine Disorders (MOSSD)		13/13		1/2	\$1,500,000	\$1,375,000	\$1,137,829	55-68 over 5 years	\$1,375,000	\$1,200,000
M&M COE	Low Cost Manufacturing for Limited Production Aircraft Composite Structures	5/8	9/13			\$1,100,000	\$1,090,420	\$1,413,140	73 over 2 years	\$1,090,420	\$1,090,420
OCPP OE	UAV Icing Protection	8/8	11/13			\$1,000,000	\$1,000,000	\$1,345,499	171 over 5 years	\$1,000,000	\$1,000,000
C2PNT COE	Test & Evaluation of Autonomous Systems (TEAS)		7/13			\$1,500,000	\$1,499,939	\$2,716,594	84 over 5 years	\$1,499,939	\$1,300,000
TOTAL Funded										\$9,023,800	\$8,505,261

OCPP OE	Integrated Energy and Power Management	2/8	12/13			\$850,000	\$694,818	\$700,898	40 over 5 years		
PRESIDES COE	Supercapacitors with both high energy density and power density for directed energy weapons and onboard energy storage systems for aircrafts hybrid electric propulsion	6/8	5/13			\$500,000	\$500,001	\$698,109	30 over 5 years		
C4ISR COE	Forward and Reverse Engineering Tool (FRET) and Workforce Development		10/13	3/3		\$750,000	\$670,064	\$940,573	75		
C4ISR COE	Persistent Location with Spectrum Sensing (PLSS)	4/8	4/13			\$620,000	\$590,027	\$608,100	10-20 over 5 years		
PRESIDES COE	Development of a High Power, High Energy, Safe Li-Ion Battery for Aircraft Applications	7/8	6/13			\$500,000	\$544,270	\$975,308	41 over 5 years		

Requires Use of \$500K from Challenge Problem Funding. Reduce from \$3M to \$2.5M



Successes to Date

- **Working to establish a funding mechanism from AFRL through State of Ohio's to augment proposed joint COE TEAS autonomy project. \$>\$11M**
 - Company from Portland will establish new office in Dayton
- **Proposal Quality in Round 2 Greatly Improved over Round 1**
 - Provided proposal training to approximately 90 researchers across Ohio
 - Plan another couple of proposal training classes over the next 3 months.
 - Trying to teach universities to write proposals for AF / NASA / DARPA etc.
- **Developing Statewide Response to new DARPA DSO Extreme BAA**
 - Focus is in fundamental research in optics and optical materials (Has multiple Technical Areas).
 - Follow-up to DSO Office Director visits in Ohio on Aug 9-11.
 - OFRN plans to help form teams across the state.
 - We will also provide DARPA specific proposal training.
- **Joint Flexible Electronics and Trust Business Development Effort**
 - University of Akron and Wright State University
 - Working with AFRL Sensors Directorate
- **Joint Additive Manufacturing Effort with AFRL, Youngstown State, Kent State and Youngstown Air Reserve Unit to Help reduce the Challenge of Part Obsolescence**
 - Leveraged ODHE's RAPIDS Program
- **Multiple Universities Across State are Now Pursuing Joint Efforts at AFOSR, DARPA and ONR**
 - Joint Proposals in Excess of \$100M are now in the Pipeline across Ohio



OFRN Plans Going Forward

- **Building strong linkages to Ohio Based Industries to Partner with New Research Opportunities**
 - **The OFRN will employ a proactive commercialization and workforce development service that builds upon the Rounds 1 and 2 solicitations and awards working with Industry.**
 - This model will be rolled out to interested stockholders in September.
 - **A key element of the commercialization effort with university PIs is to partner with university tech transfer offices to move OFRN technologies into the commercial sector in an efficient manner.**
 - **The OFRN is putting a high priority going forward on creating increased opportunities for PIs to partner with small and medium sized businesses in the state to leverage the OFRN projects funded by the State of Ohio.**
 - These partnerships should lead to increased opportunities for federal funding (e.g. SBIR/STTR) and state funding (e.g. Third Frontier Technology Startup and Validation Fund).
 - DARPA/IARPA/ONR/ARO
- **OFRN Specific Industry Days Are Planned for Over Next Three Months.**
 - Materials and Manufacturing (UD), Human Performance and Health Sciences (WSU/AHEAD), Energy Storage and Integration (CASE) Centers of Excellence.
 - OFRN Industry Days for all COEs and Associated Programs in Spring 2017.



Other Ongoing Activities

- **OFRN is Building Collaborations with other Ongoing Ohio Department of Higher Education Programs; Regional Aligned Priorities in Delivering Skills (RAPIDS) Program and Ohio Means Internships and Co-ops. POC is John Magill**
 - Build regional strengths in the key industry sectors.
 - Develop regional strengths in delivering equipment-dependent workplace skills, education, and training.
 - Develop regional strategies in building internship and co-op programs that encompass a diverse population of students and careers that create value-added talent resources for local and regional businesses.
 - Align investments in equipment and co-ops and internships with regional/local economic development strategies focused on business retention, expansion, and attraction.
 - https://www.ohiohighered.org/content/rapids_home

- **More Information about OFRN can be found at www.ohiofrn.org**
 - The OFRN will roll out a new website and accompanying marketing materials in the September time frame.



Ongoing Discussions with Governor's Chief of Staff

- **Governor's Office is satisfied with the results and progress of the OFRN.**
 - Was concerned in Dec 2015 we would not allocate the resources competitively
 - Chief of Staff seems very pleased with the projects and processes that we are using.
 - Suggested additions to the ERB
 - Maj Gen Bartman (Added)
 - Gen (Ret) Les Lyles (Still in Discussion)
 - Maj Gen (Ret) Pete Hennessy (Will Support the Challenge problem)
 - Now supports the challenge problems across the COEs.
- **Assessing various program options for the future on best way to fund the OFRN concept going forward.**
- **We plan to set up an ERB telecom to discuss future options in the next 30 to 45 days.**



Concluding Remarks

- **Collaboration across Ohio Research Universities, Industry, and Federal Laboratories is Increasing but Requires Continued Support and Focus**
 - Plan is to enhance Business Development Statewide
 - DARPA DSO is initial focus
 - Plan to Expand to STTR and SBIR Opportunities with Small Businesses
 - Expand to other Federal Agencies IARPA, DARPA, ARPA-E, HS-ARPA, ONR, ARO, etc.
 - Need to Increase Industry Sponsored Research
- **Creating Challenge Problem Planning Team. We will include the following:**
 - Retired Corporate Leaders
 - OHANG/AFRL/NASA/NASIC/NAMRU Leaders
 - Industry leaders working Third Offset challenges
 - DARPA/IARPA/ARPA-E/HS-ARPA Leaders
- **Potential Challenge Problem Topics from The Ohio Adjutant General Office**
 - Cyber Needs for Workforce Development and Forensics Support Statewide
 - The need to fly and train staff on UAV systems
 - UAS Test Center Experimentation
 - The challenges of aging aircraft and the need for flight certified additive manufacturing process
- **We are working with the Governor's Office and ODHE to ID the Future OFRN Budget Line Item in the Ohio FY18-19 Budget**



GBSAA at KSGH Operational View 1 (OV-1)



Potential Challenge Problem Using New Ground Based Sense and Avoid UAS Test Site in Springfield.



OFRN CY16 Event Timeline

Date	Description
Feb 2, 2016	Round 1 Awards
May 24, 2016	NASA Technology Day
July 19-21, 2016	AFRL Wright Dialogue with Industry (Dayton Defense)
July 26, 2016	Round 1 COE Quarterly project review (Columbus)
July 26, 2016	All COE Leads discussion (Columbus)
August 9, 2016	DARPA DSO Director Dr. Stefanie Tompkins DARPA 101 (Athens)
August 10, 2016	DARPA DSO Director Dr. Stefanie Tompkins DARPA 101 (Columbus)
August 11, 2016	DARPA DSO Director Dr. Stefanie Tompkins DARPA 101 (Dayton)
August 31, 2016	Delivery of Ohio Industry Data Base to Enhance COE Biz Connections
September 2, 2016	Round 2 Approval Award Letters Released to COE Leads
September 9, 2016	Updated SOWs / Budgets Due
September 16, 2016	Contracts / Contract Modifications Released to COE Leads
September 26, 2016	Round 2 Program Start Date / COE Lead Contracts Fully Executed
September TBD	DARPA DSO Extreme BAA Proposal Training
October 26, 2016	COE Quarterly Review
November TBD, 2016	COE Industry Days for Three Centers
March TBD, 2017	Industry Days for all COEs
May TBD, 2017	Challenge Problem RFP

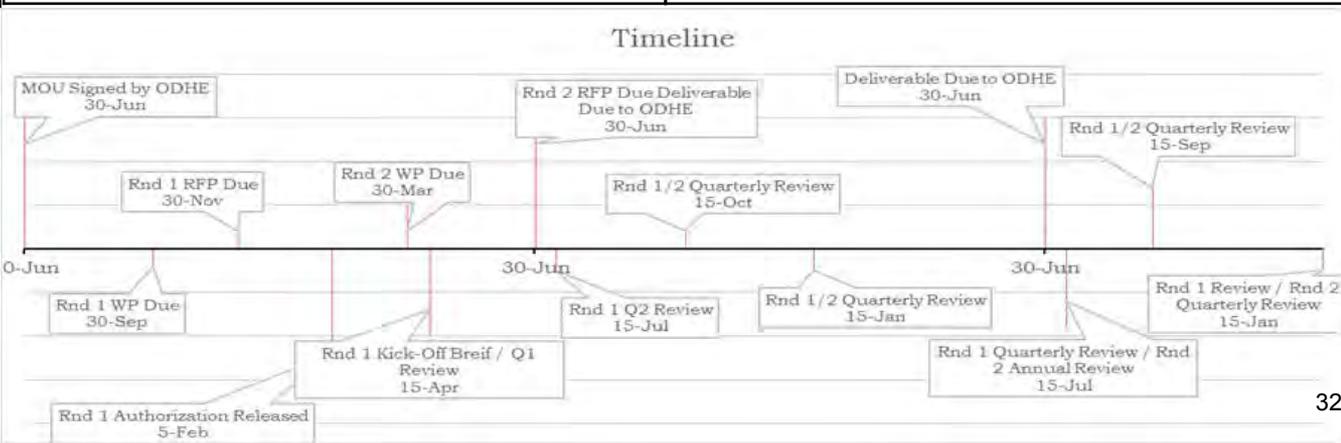
Backups



OFRN Program Update

Objective	Commentary	Accomplishments
<ul style="list-style-type: none"> Organize, fund and advance the work of the Federal Research Network through designated technology focused Centers of Excellence with the primary goal of advancing the priority research thrust areas of WPAFB and NASA-GRC. Aggressively pursue federal procurement opportunities. Expand the engagement of Ohio firms to ensure the research is meeting government requirements and operational and warfighter needs. Create the jobs, processes, firms and technology needed to meet emerging commercial market and government needs. Brand Ohio as the Partner and Supplier of Choice. 	<ul style="list-style-type: none"> Round 1 <ul style="list-style-type: none"> Start-up time was an issue in Round 1. No changes to the timeline schedule was requested and/or had to be changed from the executive level. Proposals were not to the par that they needed to be. So OFRN Leadership hired UVG, Ltd with ODHE approval to instruct the researchers on how to properly write for a Federal RFP. Round 2 <ul style="list-style-type: none"> WPs were extremely well written. Issuance of RFP was delaying until 29 April 2016, which pushed the due date of the RFP to 30 June 2016. This was to ensure the COEs had 45 days from the date of Round 2 RFP training to complete the proposal. Issued 5 Amendments to RFP to clarify Q&A and Cost Share. Proposals were received on time and were issued to the TRC. TRC formulated questions for each of the COEs that required further clarifications to complete the TRC Review Process. Gave COEs two weeks to respond to the questions. FRN Leadership rank ordered the evaluation criteria and that rank order was used for the final selections. 24 Aug – TRC reviewed responses to the questions. TRC selected 8 of 13 Projects for funding. Two of the projects requested funding were reduced to \$1.2M and one of the projects requested funding was reduced to \$1.3M. PRESIDES will not be funded in Round 2. 30 Aug – ERB Approved the 8 projects for funding. \$5M Allocation from ODHE through OSU is completed. 	<ul style="list-style-type: none"> Created six (6) Centers of Excellence (COE), which are spread across the state of Ohio with a primary goal of advancing the priority research thrust areas of WPAFB and NASA-GRC. <ul style="list-style-type: none"> Round 1 Project Awards <ul style="list-style-type: none"> Allocated funding for 10 projects spread over four (4) COEs. Round 2 Project Awards <ul style="list-style-type: none"> 13 of 20 White Papers were selected for Proposal 8 of 13 Projects selected for funding spread over five (5) COEs OFRN Community BAA Outreach <ul style="list-style-type: none"> We have received great feedback from most universities in the state of Ohio on BAA's which we have sent out to the FRN Community. A WP was sent to IARPA by the M&M COE which was made up from a collaboration of three Ohio Universities. Also PRESIDES has won a contract through OFRN efforts.
Benefit		
<ul style="list-style-type: none"> Expand and strengthen university research opportunities across the state Boost the commercialization of developing technologies alongside industry partners to better position the State of Ohio for future Department of Defense (DOD) and NASA initiatives. 		
Allocation of OFRN Program Funds - \$25M		

Changes
<ul style="list-style-type: none"> Program changed to not have a C&WD COE, but to have them work as support services for the OFRN Leadership. Changed Monthly Progress Reports to Quarterly Progress Reports. Round 2 RFP Due Date changed from 3 Jun to 30 Jun 16. Funding allocation has changed from Quarterly to Yearly to allow COEs the capability of utilizing the yearly funds for subcontracts. Round 2 funding exceeded the \$8M previously allocated. Reduced Challenge Problem Funding from \$3M to \$2.5M to increase Round 2 Funding to \$8.5M



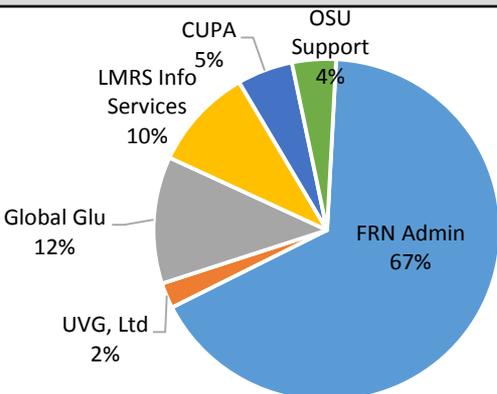


FUNDING

<u>Contract / PO#</u>	<u>Prime</u>	<u>POP</u>	<u>Allocation</u>	<u>Funded to Date</u>	<u>Expensed to Date</u>
5JCO/HB 64 Defense/Aerospace Workforce Development Initiative	ODHE	1 Jul 15 – 30 Jun 17	\$17,081,902	\$17,081,902	(\$1,109,308)
5JCO/HB 64 AHEAD/RSC/APDC	ODHE	1 Jul 15 – 30 Jun 17	\$2,918,098	\$2,918,098	(\$1,853,938)
235616/HB 64 Ohio State University Federal Research Center Initiative	ODHE	1 Jul 17 – 30 Jun 18	\$5,000,000	\$5,000,000	\$0
TOTAL			\$25,000,000	\$25,000,000	(\$2,963,246)

<u>Contract / PO#</u>	<u>COE</u>	<u>POP</u>	<u>Round 1 Allocation</u>	<u>Round 2 Allocation</u>	<u>Funded to Date</u>	<u>Expensed to Date</u>
1077-100/FY-16-045-Case Western Reserve	PRESIDES	1 Feb 16 – 25 Aug 18	\$1,649,948	\$0	\$485,000	\$0
1077-200/FY-16-042-Ohio State University	OCPP	1 Feb 16 – 25 Aug 18	\$2,003,000	\$1,999,838	\$500,000	(\$38,438)
1077-300-Ohio University	C2PNT	26 Aug 16 – 25 Aug 18	\$0	\$2,100,002	\$0	\$0
1077-400/FY-16-046-University of Dayton/UDRI	M&M	1 Feb 16 – 25 Aug 18	\$1,999,997	\$1,090,420	\$500,000	(\$35,587)
1077-600-OSU/WSU	C4ISR	26 Aug 16 – 25 Aug 18	\$0	\$1,200,000	\$0	\$0
1077-700/FY-16-049-Wright State University	HPHS	1 Feb 16 – 25 Aug 18	\$1,498,922	\$2,115,001	\$427,703	(\$111,458)
1077-500/FY-16-047-Cleveland State University	C&W	1 Feb 16 – 25 Aug 18	\$1,000,000	N/A	\$625,000	(\$105,045)
1077-510/FY-16-048-Lorain County Community College	C&W	1 Feb 16 – 25 Aug 18	\$1,000,000	N/A	\$625,000	(\$175,379)
COE SUB TOTAL			\$9,151,867		\$3,162,703	(\$465,907)

OFRN Administration Allocated Funds - \$2M



STAFFING

Employees/Consultants	Role	Allocated	Funded	Expensed
1. FRN Administration		\$1,388,902	\$1,388,902	\$394,463
2. UVG, Ltd	C&WD Trng Consultant	\$50,000	\$31,000	\$13,138
3. Global Glu	COE Handbook	\$250,000	\$248,500	\$202,674
4. LMRS Info Systems	C&WD Team Mgmt	\$200,000	\$100,000	\$33,126
5. CUPA	CSU Job Growth	\$108,000	\$108,000	\$0
6. OSU Support	Associate PM	\$85,000	\$85,000	\$0
FRN Administration Subtotal		\$2,081,902	\$1,961,402	\$643,401

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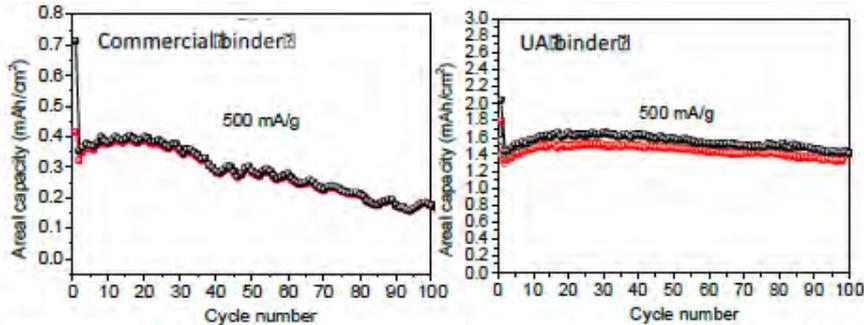
CDRLs

- Expenditure Report Due: 30 June 2017
- Matching Funds Detail Report Due: 30 June 2017

Sampling of Programs Selected to Go forward Round 1.

High Energy Density Li-Ion Battery Based on Advanced Silicon Anodes

Technical Concept & Approach



LIBs do not have sufficient specific energy and cycling durability to meet targets of > 300 Wh/kg
→ Silicon-based anode, polymer binders mitigate volumetric expansion problems

Project Requirement, Federal Alignment, Sponsoring Organization (s)

NASA + AFRL: Rechargeable batteries; high energy density; > 300 Wh/kg; lightweight; > 100 cycles (AFRL), > 200 cycles (NASA)

NASA: Power source for EVA suits, load-leveling and electrical power on solar-powered missions, orbital missions, landers/rovers

AFRL: Power worn systems, UAVs, surveillance

Team & Economic Impact For State of Ohio

PI: Yu Zhu, UA

NASA: James Wu

AFRL: Michael Rottamayer, Joseph Fellner

University partners: S. Chuang (UA), M. Canova (OSU), M. Heben (UT)

Industry partners: P. Matter (ph Matter), C. Chen (GrafTech), X. Shi (Lubrizol), K. Dudek (CAR Technologies), M. Graham (Akron Polymer Systems)

Potential economic impact (in 2 years):

- Jobs: 4+
- Follow-on funding: \$300K+ via fed agencies

Budget, Schedules, Deliverables, & Risks

Budget total: \$599,740

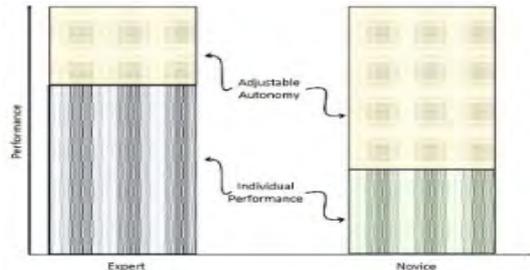
Period of performance: 24 months

Key deliverable: Li-ion Si anode full cell with 1000 mAh/g

Key risk: Inability to meet technical targets during period of performance

Sliding-Scale Autonomy Through Physiological Rhythm Evaluations (SAPHYRE)

Technical Concept & Approach



Problem: Individual variability, experience, trust in the system, and proficiency present a challenge in design of autonomous systems.

Challenge: These variables change throughout a mission based on mission requirements.

Project Requirement, Federal Alignment, Sponsoring Organization (s)

Federal Needs:

- Augmentation of human performance
 - Heart Rate Variability methodology (AFRL/RH).
- Performance Augmentation of Human Machine Teaming
 - Individualized performance assessment in HMT environments (AFRL/RH), cognition and performance simulations (AFRL/RH)

Approach:

- Current industry methods for augmenting human machine teaming are focused on reducing workload independent of the operator state.
- Our approach incorporates the individual unique qualities, platform, and environmental states into the sliding scale autonomous workload.

Team & Economic Impact For State of Ohio

- Ali K. Reiter, PhD Wright State University
- Bruce Howard Wright State University
- Vijay Devabhaktuni, PhD University of Toledo
- Jeff Weir, PhD AFIT
- Ron Storm, PhD, The Perduco Group
- This research will generate an estimated 55 jobs including jobs with team members and aviation and automotive industry partners within the state of Ohio.
- Impact on multiple commercial areas including the automotive sector for in-vehicle dynamic adjustments (Advanced Telo Sensors, Inc.), aviation industries as well as sports and gaming.

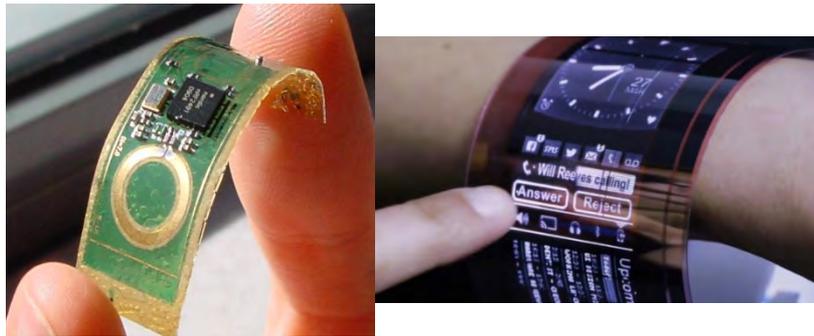
Budget, Schedules, Deliverables, & Risks

- Requested Budget Total: \$832,967, (\$228,644 WSU, \$85,000 UT, \$219,986 AFIT, and \$299,337 Perduco)
- Year 1:\$416,235, Year 2:\$416,733
- Period of Performance: 24mos
- Milestones: Needs Assessment (May 2016), Software and Hardware Install (July 2016), Initial Data Collection and Analysis (Oct 2016), Test and Evaluation of Augmentation Using Sliding Scale Autonomy (July 2017).
- Deliverables:
 - Description of Industry needs and potential performance indicators of systems and individuals.
 - Data architecture / Software including user interfaces for the collection, storage, analysis, and reporting/visualization of data.
 - Sliding scale autonomy methods and performance indicators.
- Risk: IRB approval delay (mitigation-early submission & ample time between initial data collect and augmentation task.)

High Performance Plastic Substrates for Flexible Electronics

Technical Concept & Approach

OBJECTIVE: Develop high performance polymer substrates/films tailored for flexible Electronics

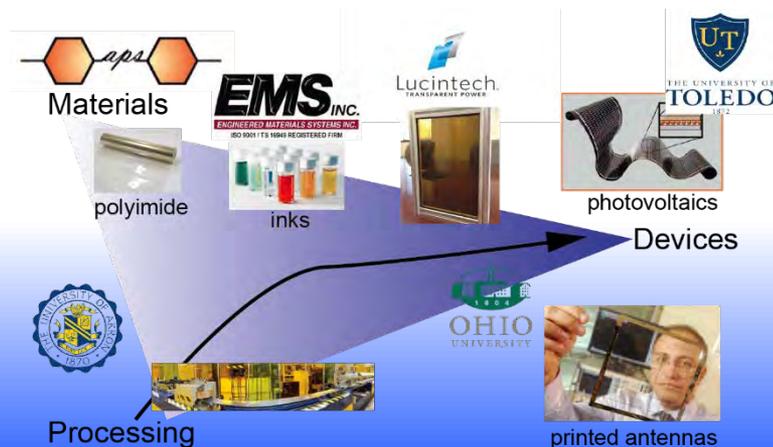


Project Requirement, Federal Alignment, Sponsoring Organization (s)

- AFRL Functional Materials: Flex Hybrid Electronics
- Flexible electronics are proposed as an enabling disruptive technology for both the AF and NASA.
- Flexible electronics enable survivable electronics for munitions or impact at terrestrial surfaces.

Team & Economic Impact For State of Ohio

- University of Akron (Lead), Akron Polymers, Orbital research, Hana Microdisplay Systems, Lucintech, EMS Inc.



Budget, Schedules, Deliverables, & Risks

- Requested Budget Total: \$606K
- Year 1: [\$303], Year 2:[\$303].
- Period of Performance: [24 months]

Milestones

- Selection and fabrication of high temperature polyimide substrates
- Characterization of the thermomechanical properties and deliver substrates

Deliverables

- Transparent plastic substrate with $T_g > 375^\circ\text{C}$
- 10%, 1 cm², efficiency device on one or more flex substrates

Risks:

- Film compatibility with microelectronics
- Uniform thermal expansion coefficients

OFRN Round 2

Selected Projects

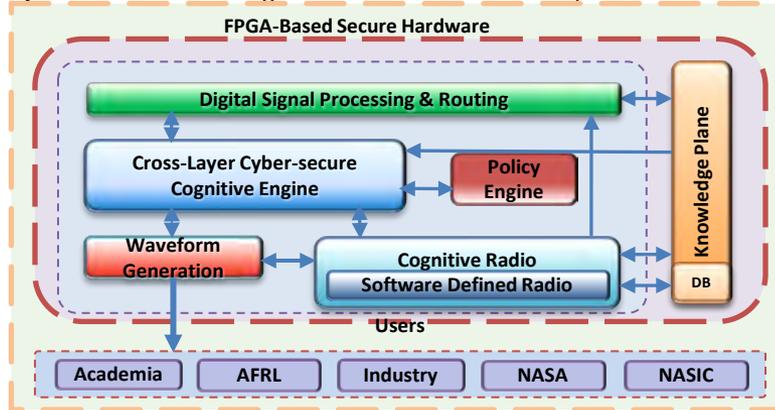
Quad Charts



C2PNT– Intelligent Channel Sensing Based Secure Cross Layer Cognitive Networking for Resilient Space Communication

Technical Concept & Approach

- “Cyber secure” high capacity resilient UAV & space communication network
- “Cognitive communication” for adapting rapidly to changing environments
- “Cognitive radio” hardware and software integrated in a unique framework
- “System level” technological solution to airborne & space communication



Project Requirement, Federal Alignment, Sponsoring Organization (s)

- **AFRL:** Technologies for mission assurance in contested and denied environments against threats to EM spectrum, & network-enabled spectrum warfare
 - POC: Michael Nowak (michael.nowak@wpafb.af.mil)
Tech Advisor, Spectrum Warfare, Sensors Directorate, WPAFB
- **NASA:** Space-based spectrum sharing, assured access to spectrum, cognitive technologies
 - POC: Elias Naffah (elias.t.naffah@nasa.gov)
Chief, Space Communications & Spectrum Management, NASA
- **NASIC:** Detection/mitigation of malicious-code/malware in satellite hardware and software; trusted satellite-cockpit communication.
 - POC: Chad Arnold (chad.arnold.4@us.af.mil), Cyber Analysis, NASIC/ACYM, and David Fay (david.fay@us.af.mil) Satellite Systems, NASIC/SMSM

Team & Economic Impact For State of Ohio

- **University Partners**
 - Wright State University: Dr. Zhiqiang Wu
 - University of Toledo: Dr. Ahmad Javaid and Dr. Vijay Devabhaktuni
 - Ohio University: Dr. Harsha Chenji and Dr. James Stewart
 - Air Force Institute of Technology: Dr. Robert Mills, Dr. Scott Graham
- **Industry**
 - Comsat Architects: Dr. Kul Bhasin
 - GIRD Systems Inc.: David Maldonado
- **Job Creation Plan**
 - Ohio jobs through Comsat & GIRD federal dollars on CR&SDR (40 in 5 years)
 - Training specialized workforce across OH (produce 65 graduates in 2 years)
 - Trained workforce hiring by AFRL/NASA/NASIC & Contractors (80 in 5 years)
- **Commercialization and IP**
 - Team holds a wide range of existing IP including publications, SBIR data rights, proprietary technologies, and trade secrets.
 - Team is at the frontier of the proposed technological areas, confirmed by publications, GIRD’s multiple SBIRs, and Comsat’s NASA contract.

Budget, Schedules, Deliverables, & Risks

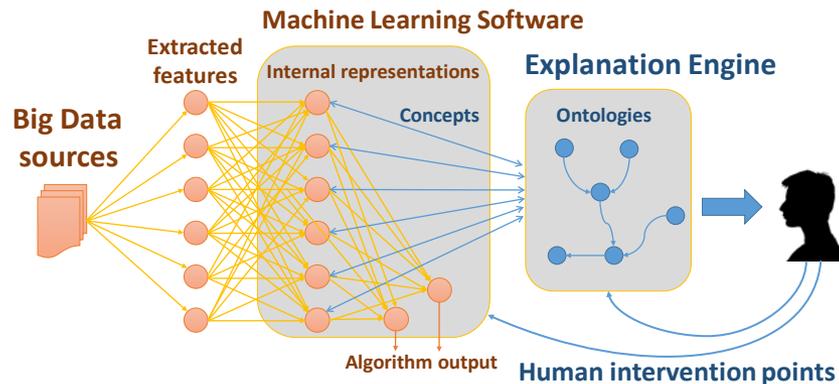
- Total Project Budget Requested: **\$800,265** (including **\$70,264** of AFIT Budget)
 - Y1: **\$424,853** (WSU:\$137,853, OU:\$97,064, UT:\$100,000, Comsat:\$30,000, GIRD: **\$0**, C2PNT: \$25,000, AFIT: **\$34,936**)
 - Y2: **\$375,412** (WSU:\$77,147, OU:\$97,936, UT:\$100,000, Comsat:\$40,000, GIRD:**\$0**, C2PNT: \$25,000, AFIT: **\$35,328**)
- Total Committed Cost Share: **\$850,809** (including AFIT cost share)
- Period of Performance: 24 months
- **Significant Milestones**
 - Cognitive networking algorithms designed to enable spectrum sensing, interference mitigation, and high data-rate communications
 - Machine learning enabled cross-layer cybersecurity algorithms/models designed and implemented for optimal information security
 - “FPGA based secure hardware” for multi-level secure code compilation
 - Proposed algorithms and technologies implemented & validated using nationally strategic federal testbeds, i.e. AFRL’s DYSE and NASA’s SCA_N
 - Integration into the Interplanetary Overlay Network software codebase
 - New Collaborations, New IP, New Jobs, New Talents, New Technologies



HPHS & C4ISR COEs: Human-Centered Big Data (HCBD)

Technical Concept & Approach

(1) Improve discovery and hypothesis generation from Big Data. (2) Increase *transparency and trustworthiness* of analytic algorithms to maximize human-in-the-loop analytic performance



Project Requirement, Federal Alignment, Sponsoring Organization (s)

- **NASIC/AF requirement:** Advanced techniques & technologies for Big Data analysis.
- **Current limitations:** Discovering *relevant* information in Big Data is challenging. Analytic algorithms (e.g., *deep neural networks*) are helpful but are often “black boxes” lacking transparency.
- **Our solution:** Leverage semantic ontologies to generate **human-understandable explanations** of an algorithm’s internal representations & outputs. Develop methodology for optimally combining human & machine judgments.
- **Impact:** Optimal integration of human & machine intelligence will greatly improve accuracy & reliability of analytic products.
- **Sponsors:** NASIC/GXKA (J. Homer, M. Brown), AFRL/Ryw (M. Nowak).

Team & Economic Impact For State of Ohio

- **Team members:** WSRI/WSU, Ohio State, Case Western. Industry partners: Perduco Group, Ipsos, Hewlett Packard, DesignKnowledge, LexisNexis, Nuance, Illumination Works, Tenet3, **DelphicDB, Columbus Collaboratory, Amperand, MatchTx**
- **\$12M in potential new R&D funding:** IARPA HFC program, IARPA Stories program, IARPA-wide BAA, DARPA Explainable AI, DARPA Information Innovation Office, NSF (multiple programs)
- **Est. 40 new jobs** (established industries & start-ups)
- **Broad potential impact extends to non-DoD industries.** **Near-term focus on commercializing health care analytics applications (matching patients to drugs / clinical trials).** Additional market opportunities in business analytics (marketing, finance, demand forecasting), infrastructure management (energy grid), and geopolitical analysis (election forecasting, risk assessment)

Budget, Schedules, Deliverables, & Risks

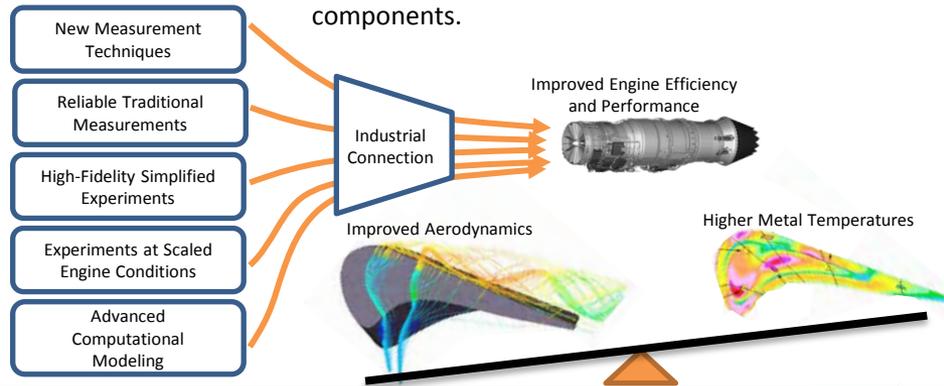
- Requested Budget Total: **\$1,343,600**
- Year 1: **\$675,530** Year 2: **\$668,070.**
- Period of Performance: 24 months
- Milestones: 1) Concept assignment for cluster analysis; 2) Concept assignment for deep learning; 3) Initial methodology for hybridizing human-machine judgments; 4) Validation of hybridized judgments
- List Deliverables
 - Algorithms for enabling knowledge discovery from high-dimensional cross-modal data
 - “Readable” machine learning systems
- Key technical risks:
 - Diffuse or uninterpretable results
 - Insufficient ontology richness for generating explanations



Power & Propulsion COE Advanced Turbine Cooling

Technical Concept & Approach

Jet engines of the future will require better understanding of film cooling and losses caused by air leaking over the tips of turbine blades. New designs must balance efficiency improvements against higher thermal loads that can damage components.



Project Requirement, Federal Alignment, Sponsoring Organization (s)

- Key federal stakeholders: Dr. John Clark in the Turbine Engine Division of the Air Force Research Laboratory, Dr. Ken Suder in the NASA Turbomachinery and Turboelectric Branch
- Benefits to federal customers:
 - High-fidelity data sets for exploring turbine blade tip leakage flows and heat transfer
 - Advanced development tools including well validated computational models and novel experimental techniques
 - New understanding feeding into industrial design cycle to produce more efficient engines

Team & Economic Impact For State of Ohio

- Team members include: The Ohio State University, University of Cincinnati, Air Force Institute of Technology, Honeywell Aerospace, Innovative Scientific Solutions Incorporated
- Results could impact other industry members including GE Aviation, Teledyne Turbines (Toledo), Siemens Energy (Mt. Vernon), and suppliers around the state
- Methods and results developed will improve competitiveness for future funding opportunities including follow on to NASA's Small Core Engine initiative, Air Force development programs, and further industry investment



Budget, Schedules, Deliverables, & Risks

Two year funding request totals : \$636,000 for OSU, \$267,000 for UC, and \$96,000 for AFIT (\$1M total request matched by \$1.27M)

- Year 1: \$499,898 requested from state + \$865,745 cost match
- Year 2: \$499,939 requested from state + \$402,975 cost match

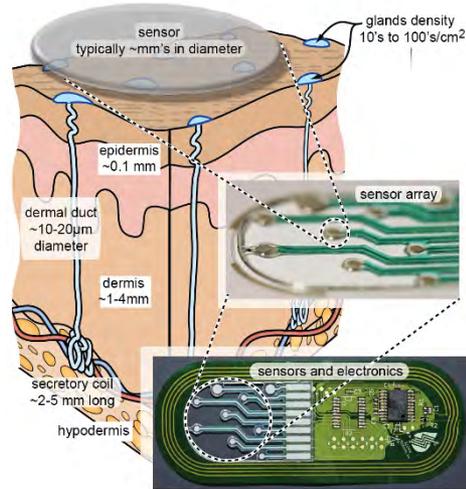
Month	Method Development	Computational Modeling	Stationary Experiment	Rotating Experiment
1-6	Test PSP	Develop model using existing data	Update Hardware	Hardware Modifications
7-12	Determine optimal technique	Comparison to stationary expt.	Surface and Flow field data	Experiment Assembly
13-18	Impact of wakes on film cooling	Detailed validation, create rotating model	Investigate revised geometries	Experiment Execution
19-24	Comparison to rotating experiment			Data Analysis



HPHS– Advanced Cognitive and Physical Sweat Biosensing

Technical Concept & Approach

Wearable bio sensing will soon hit a glass ceiling without access to and sensing of actual chemical analytes. The most compelling biofluid for non-invasive continuous monitoring is sweat. Sweat biosensing is in its infancy (commercialization is limited right now to only sweat electrolytes).



Project Requirement, Federal Alignment, Sponsoring Organization (s)

- AFRL - Josh Hagen, Scott Galster / NAMRU-D - Richard Arnold – *Provide continuous access to chemical biomarker information coming from the body.*
- There are no existing approaches or similar alternatives.
- Compared to other 'sweat sensing' patches in development, our approach and IP directly addresses challenges we have identified, challenges which are not yet known by the public.
- This technology will allow the DOD to monitor warfighter cognitive and physical performance, recovery, and also for the 1st time quantify in real-time internal toxin exposure.

Team & Economic Impact For State of Ohio

- Jason Heikenfeld (UC) – global leader in sweat biosensing
- Brent Cameron (Toledo) – electrochemical biosensor expert.
- William Kraemer (Ohio State) – global leader, physical perf.
- Ali Rezai (Ohio State) – global leader, cognitive perf.
- Economic impact is >50-100 jobs in 5 years and >\$16M in follow on funding which is dominantly private investment in commercialization.
- Target markets include: elite athletics, military personnel, mental illness, workforce safety, health and wellness. Total aggregate market for sweat biosense easily could be >\$1B/yr.

Budget, Schedules, Deliverables, & Risks

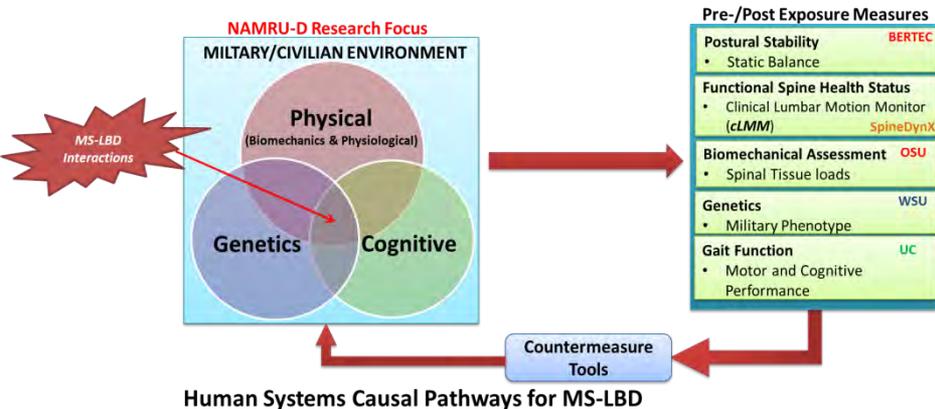
- Requested Budget Total: [\$1,090,000] (\$490k UC, \$200k Toledo, \$400k Ohio State).
- Year 1: [\$490,000], Year 2:[\$600,000]
- Period of Performance: 2 years.
- Milestones:
 - (1) Clinically downselect biomarkers (vasopressin, adrenal, creatine kinase, neuropeptides, cortisol, etc.)
 - (2) Robust electrochemical sensors for biomarkers.
 - (3) Sweat sensing patch integration and pilot manufacturing.
 - (4) Clinical validation of sweat sensing patches.
- Major technical risks include blood-sweat correlations and limit-of-detection for electrochemical sensing modalities.



HPHS COE – MOTion Sickness interactions with Spine Disorders (MOSSD)

Technical Concept & Approach

Challenge: Understand motion sickness (MS) causal mechanisms and its influence on susceptibility to low back disorders (LBDs)



NAMRU-D – Naval Medical Research Unit – Dayton OSU – Ohio State University UC – University of Cincinnati WSU – Wright State University
 SpineDynX – Industry Sponsor BERTEC – Industry Sponsor

Project Requirement, Federal Alignment, Sponsoring Organization (s)

- NAMRU-D: CDR Rich Folga, richard.folga@us.af.mil
- Requirements: Understand MS-LBD causal mechanisms and develop quantitative tools to evaluate Countermeasure efficacy against MS and LBDs.
- NAMRU-D Mission Impacts
 - Current MS desensitization training is marginally effective and requires refresher training.
 - Our approach integrates genetics, postural stability, spine loading and kinematics (cLMM) before and after MS exposure to combat MS and LBDs.
 - Supporting Human Systems Integration including personnel health, protection, performance, and training.

Team & Economic Impact For State of Ohio

MOSSD Team

- The Ohio State University: William Marras, Ph.D. (PI)
- University of Cincinnati: Amit Bhattacharya, Ph.D.
- Wright State University: Chad Reiter, Ph.D.
- Economic Impact**
 - Leverage the cLMM as a spine health service and expand to broader markets**
 - Jobs: 55 - 68**
 - Additional Research: BAA**
 - PA-AFRL-AFOSR-2016-0001: ~\$47,000,000
 - BAA-AFRL-RQKHC-2016-0009: ~\$40,000,000
 - BAA-AFRL-AFOSR-2016-0004: \$25,000,000
 - IP: Yes**
- HealthCare, Military (NAMRU-D, AFRL)
- Industry Partners: SpineDynX LLC (Columbus, OH), Bertec Corporation (Columbus, OH)

Budget, Schedules, Deliverables, & Risks

- Requested Budget Total: **Up to \$1.375M over two years**
- Year 1: [\$625K], Year 2: [\$750K] (project yearly total only).
- Period of Performance: **24** [months]
- Milestones:
 - NOTC and KRAKEN data acquisition with human testing
 - Data Integration and Human-in-loop tests in the KRAKEN
- List Deliverables
 - MS-LBD susceptibility report**
 - Countermeasure test protocol**
 - Spine Health testing service**
- Identify key technical risks: **DRD availability, test subject recruitment**



Materials & Manufacturing CoE – Low Cost Manufacturing for Limited Production Aircraft Composite Structures

Technical Concept & Approach

OBJECTIVE: Reduce the fabrication time and cost of composite structures by 25% to meet AF Low Cost Attributable Aircraft Technology goals.



Advanced Composite Manufacturing



Additively Manufactured Tools



Design Tools

Project Requirement, Federal Alignment, Sponsoring Organization (s)

- AFRL: affordable composite mfg, processing science, additive manufacturing and multifunctional structures.
- NASA: composite materials systems and advanced manufacturing techniques to tailor component properties for hybrid electric power systems
- Cost/Risk Model for Composites: impact design with initial manufacturing risk modelling/assessment
- Low Cost Composite Tools: time to market; tools produced < 2 weeks at 75% the cost of machined metal tools
- Low Cost Composite Preforms: reduced fabrication time and associated costs; increased toughness

Team & Economic Impact For State of Ohio

- UDRI: lead, Case Western Reserve, Univ of Cincinnati, Ohio University, Wright State University, Youngstown State University
- Manufacturing has the greatest impact upon the State's economy with a GDP of nearly \$100B (JobsOhio). **New lightweight composite materials and 3D printing/additive manufacturing** are two of the game changers where Ohio is leading the way (JobsOhio)
- Industrial Partners:
 - NONA Composites
 - General Electric Aerospace
 - Orbital-ATK

Budget, Schedules, Deliverables, & Risks

- Requested Budget Total: \$1.1M TOTAL / \$1.4M Cost Share
 - UDRI (\$750K/\$1000K), CWRU (\$50K/\$50K), UC (\$50K/\$50K), Ohio (\$100K/95K), WSU (\$50K/\$50K), YSU (\$100K/\$10K)
- Year 1: \$600K, Year 2: \$500K (project yearly total only).
- Period of Performance: 24 months
- Milestones:
 - Cost/Risk model verification and validation
 - Demo small scale tools using low CTE designs/mats
 - Mechanical characterization of woven composites
- Deliverables: 1. Cost/Risk Model 2. LCAAT tool demo 3. Woven composite component demo
- Access to proprietary cost items for composites, durability of additively manufactured composites tools



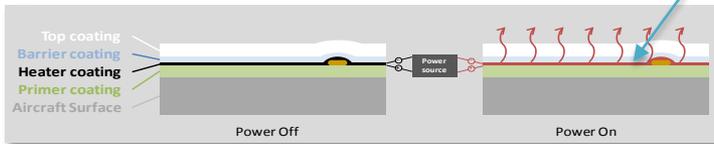
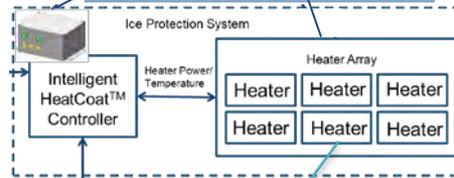
Power and Propulsion COE – UAV Icing Protection

Technical Concept & Approach

Design, implementation and testing of MQ-9 engine inlet Ice Protection System



WBS	Task Description
1.0	Project Management
2.0	Requirements
3.0	Inlet Test Article Development
4.0	HeatCoat Analysis & Design
5.0	System Integration
6.0	IRT Testing
7.0	Reporting



Project Requirement, Federal Alignment, Sponsoring Organization (s)

The Air Force Life Cycle Management Center (AFLCMC) requires a retrofittable anti-icing technology and certification approach for medium altitude unmanned aircraft systems (UAS). Battelle’s HeatCoat™ Ice Protection System (IPS) is an innovative electro-thermal anti-icing and de-icing system based on carbon nanotube (CNT) heaters. It will enable UASs to operate in icing conditions without adding excessive weight and without requiring the expense of structural redesign of aircraft components. Tests to date on a large UAS wing and inlet sections have demonstrated that HeatCoat™ provides excellent ice protection for UASs when operated in icing conditions per Federal Air Regulation (FAR) 25, Appendix C, for flight into known icing conditions (FIKI).

Team & Economic Impact For State of Ohio

Team: OSU: Jim Gregory; Battelle: Brett Burton; UDRI: Brian Rice; CW: Vikas Prakash; NASA Glenn: Icing Research Tunnel (IRT)

OSU: Principal Investigator and ice accretion analysis

Battelle: Requirements, tailor the HeatCoat design, fabricate the HeatCoat kit, support development of the test article, integration

CW: Thermal analysis of HeatCoat to aid in system performance tailoring

UDRI: Lead development and fabrication of the test stand for use in the NASA IRT, test latest AFRL coating stackup with HeatCoat

NASA Glenn: Testing performed at Icing Research Tunnel (IRT)

New job creation is estimated to begin in FY 18 and ranges from 23 total jobs for 50 ship sets to 80 jobs for 200 ship sets. Total production for MQ-9 UAS is estimated to be 300 sets.

Commercialization Partners: Battelle Memorial Institute

Budget, Schedules, Deliverables, & Risks

- OFRN Project Total: \$1.0M
 - OSU: \$260k, Battelle: \$260k, CW: \$125k, UDRI: \$87k, NASA Glenn: \$268k
- Cost Share: \$1.35M
 - OSU: \$204k, Battelle: \$1M, CW: \$125k, UDRI: \$16k
- Period of Performance: 24 months
- Deliverables: Report showing results of icing wind tunnel testing on MQ-9 surrogate engine inlet structure
- Risks: Cost for development of engine inlet test stand is the biggest risk. Currently do not have CAD models or specifics regarding the icing wind tunnel interface.

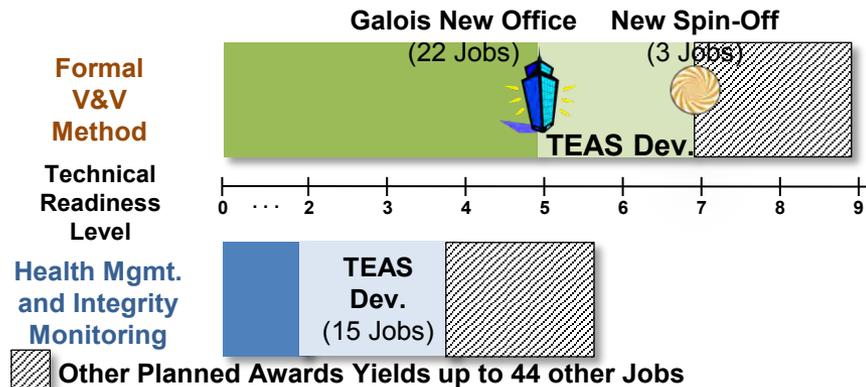


HPHS & C2PNT COEs:

Test & Evaluation of Autonomous Systems (TEAS)

Technical Concept & Approach

- **TEAS** – Autonomy test, evaluation, verification, and validation process and tool improvements creating technical capability to support Air Force autonomy requirements



Project Requirement, Federal Alignment, Sponsoring Organization (s)

- AFRL/DoD Req: Develop and Execute TEV&V capability for Autonomy Security and Safety; System-of-Systems resiliency inclusive of human-machine teaming
- Project is aligned to OSD T&E of Autonomous Systems
 - Test Infrastructure and Personnel
 - Safety/Cyber Security for Autonomous Systems
 - Testing of Human System Teaming
 - Health Monitoring and Integrity Management
- Achieves capability development of sequential testing and supports security/safety analysis for autonomous systems
- Sponsors: AFRL/RQ – Matt Clark, AFRL/RH – Jason Clark

Team & Economic Impact For State of Ohio

- Team Members: Wright State University, Ohio University, AFIT, Galois, Ohio FRN HPHS & C2PNT COEs
- Potential Economic Development Impact
 - \$51M+ in identified Research opportunities from AFRL, DARPA, Army and industry
 - Galois – Open Dayton Office
 - \$1.325M Cash Committed Cost Share
 - \$4.2M Contingent Investment to grow business based on commercial demand
 - Spin-out business from IP maturation planned within three years
 - 84 New Jobs (Galois (25), OU (8), WSU (7), AFRL/Industry (44))

Budget, Schedules, Deliverables, & Risks

- Requested Budget Total: \$1.5M
- WSU (\$378k); OU (\$362K); Galois (\$675K); AFIT (\$85k)
- Year 1: \$707K; Year 2: \$699K
- Period of Performance: 24 months
- Milestones: 1) Analysis of UxAS Software 2) GPS Denied Scenarios; 3) Refactored Code Decision; 4) Health Monitoring and Integrity Mgmt interface for autonomy; 5) Testing of Human-System Teaming/Resilience Research Report
- Deliverables: Analysis Document; Software V&V Report; Software, Flight Test Reports, Final Report including Operator Trust Verification Analysis
- Cost Share: \$2.53M (WSU, OU, Galois)
- Key Risk: Limited ability to use M&S; Complexity of autonomy TEV&V



Full Proposal NASIC Ranking

COE	Project Title	RED/YELLOW/GREEN	NASA-GRC	AFRL	NASIC	NAMRU-D
C4ISR COE	Human-Centered Big Data (HCBD)	Proposal lacked a clear commercialization strategy as evidenced by the lack of involvement by industry.		8/13	1/3	
C2PNT COE	Intelligence Channel Sensing	1 company has conflict concern. Also concerned about maturity of comm. Partners. Would recommend that you seek other partners	1/8	1/13	2/3	
C4ISR COE	Forward and Reverse Engineering Tool (FRET) and Workforce Development	Concerns were noted regarding a lack of detail on the commercialization strategy, cost share, attracting new investments and collaboration.		10/13	3/3	
HPHS COE	Advanced Cognitive and Physical Sweat Biosensing			3/13		2/2
M&M COE	Low Cost Manufacturing for Limited Production Aircraft Composite Structures	The commercialization strategy, identification of specific applications and current commercial services should be reviewed. Would be beneficial to identify two or three specific components and materials as well as provide the actual procedures that would be developed to demonstrate value and define the metrics to validate the usefulness of the modeling tools. Level of Maturity and schedule to the scope of work should be discussed.	5/8	9/13		
OCPPE	UAV Icing Protection		8/8	11/13		
HPHS COE	Motion Sickness Interactions with Spine Disorders (MOSSD)	Has this product been approved by the FDA? "The proposal doesn't discuss the IP landscape and freedom to operate based on other IP that is currently under prosecution. Its not clear as to how SpineDynX will generate a cLMM application and diagnostics tool that can be commercialized without IP."		13/13		1/2
OCPPE	Adv. Turbine Cooling	Cost-Share from Honeywell is committed however there is no in-kind and if they had a partner pull out due to technical relevance, will Honeywell pullout as well once they see the project details?	3/8	2/13		
C2PNT COE	Test & Evaluation of Autonomous Systems (TEAS)	Letters committing cost share from university partner were not evident in the review materials.		7/13		
OCPPE	Integrated Energy and Power Management	Commercialization strategy and economic impacts of this proposal are nebulous and insufficient to meet the programs aims. If the team can conduct additional development work would recommend submission to a future round.	2/8	12/13		
C4ISR COE	Persistent Location with Spectrum Sensing (PLSS)	Fatally lacking in commercialization and job creation and are too great to overcome this round, however with the integration of a stronger industrial partner would benefit this proposal in a future round.	4/8	4/13		
PRESIDES COE	Supercapacitors with both high energy density and power density for directed energy weapons and onboard energy storage systems for aircrafts hybrid electric propulsion	Commercialization strategy is not clearly presented across all tasks and has limited end customers identified. This is an innovative projects that needs more incubation in the research laboratories while developing a strong commercialization strategy and industry partnerships.	6/8	5/13		
PRESIDES COE	Development of a High Power, High Energy, Safe Li-Ion Battery for Aircraft Applications	Team should focus efforts on developing a robust component of the battery. The proposal was unfocused and lacks a plan and path to deliver the milestones .There was also a major lack of direct involvement with industry.	7/8	6/13		



Full Proposal NAMRU-D Ranking

COE	Project Title	RED/YELLOW/GREEN	NASA-GRC	AFRL	NASIC	NAMRU-D
HPHS COE	Motion Sickness Interactions with Spine Disorders (MOSSD)	Has this product been approved by the FDA? "The proposal doesn't discuss the IP landscape and freedom to operate based on other IP that is currently under prosecution. Its not clear as to how SpineDynX will generate a cLMM application and diagnostics tool that can be commercialized without IP."		13/13		1/2
HPHS COE	Advanced Cognitive and Physical Sweat Biosensing			3/13		2/2
M&M COE	Low Cost Manufacturing for Limited Production Aircraft Composite Structures	The commercialization strategy, identification of specific applications and current commercial services should be reviewed. Would be beneficial to identify two or three specific components and materials as well as provide the actual procedures that would be developed to demonstrate value and define the metrics to validate the usefulness of the modeling tools. Level of Maturity and schedule to the scope of work should be discussed.	5/8	9/13		
OCPD COE	UAV Icing Protection		8/8	11/13		
OCPD COE	Adv. Turbine Cooling	Cost-Share from Honeywell is committed however there is no in-kind and if they had a partner pull out due to technical relevance, will Honeywell pullout as well once they see the project details?	3/8	2/13		
C4ISR COE	Forward and Reverse Engineering Tool (FRET) and Workforce Development	Concerns were noted regarding a lack of detail on the commercialization strategy, cost share, attracting new investments and collaboration.		10/13	3/3	
C2PNT COE	Test & Evaluation of Autonomous Systems (TEAS)	Letters committing cost share from university partner were not evident in the review materials.		7/13		
OCPD COE	Integrated Energy and Power Management	Commercialization strategy and economic impacts of this proposal are nebulous and insufficient to meet the programs aims. If the team can conduct additional development work would recommend submission to a future round.	2/8	12/13		
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C2PNT COE	Intelligence Channel Sensing	1 company has conflict concern. Also concerned about maturity of comm. Partners. Would recommend that you seek other partners	1/8	1/13	2/3	



Wright State Applied Research Corp (WSARC) FRN Contracting and Overall Management

The WSARC will act as the contracting and program management agent for FRN.

Specifically the WSARC will:

- Lead and oversee all procurement, contracting and financial reporting activities.
- Nominate the ERB and TRC members that will require FMJC Commission approval.
- Organize and provide support to ERB and TRC review teams.
- Support documenting the White Paper and Proposal Review process for FMJC Review and Approval.
- Manage and mitigate ERB and TRC COIs.
- Be the funding agent for all COEs.
- Be the repository of all deliverables under this program.
- Bottom Line: We will be fully compliant with State and Federal Policies, Rules, Regulations and Accounting Procedures.



Executive Review Board

The WP/GRC Executive Review Board is responsible to oversee the development, funding and performance of the Ohio Federal Research Network (FRN) of the Federal and Military Jobs Commission. The Executive Review Board (ERB) will provide ongoing oversight of the FRN to support the research priorities of the federal installations and build capabilities within Ohio to expand and focus research, workforce development and technology commercialization.

The Executive Review Board will:

- Ensure that the research agenda for the Federal Research Network advances the state of the art; supports the federal missions of Wright-Patterson and NASA GRC; aggressively pursues commercialization opportunities in Ohio and maximizes productivity through cross program and infrastructure leverage.
- Review and approve the Federal Research Network technology framework establishing the context and focus of research programs; highlight relationships between them and map the research activities of other organizations to identify opportunities for synergy and collaboration.
- Review and approve roadmaps for core Federal Research Network technologies and programs to support the prioritization of programs; monitor progress and link them to Air Force, NASA and private industry market requirements.
- Review key funding opportunities and proposals for Federal Research Network research programs to ensure alignment with federal and state strategic and operational plans.



Technical Review Council

The TRC is responsible to the FMJC and the ERB for comprehensive oversight of the portfolio of technologies that are used and developed by the Research Centers of Excellence (COE) as part of the Ohio Federal Research Network (FRN) in the execution of their programs, including the following specific duties and responsibilities:

- Assessing proposed architectures and roadmaps for technologies used by the COEs are effectively aligned with WPAFB and GRC missions and priorities
- Collaborating with COE technology teams to establish common capabilities to support collaboration across the FRN and its public and private partners
- Reviewing proposals for technology investments by COEs to realize opportunities for synergy and leverage of technologies and other resources between centers
- Ensuring that a consistent level of security and compliance is achieved across the FRN and in engagements with outside organizations
- Evaluating the technical merit, broader applicability and commercialization potential for the technologies developed through COE research programs within both the public and private sectors
- TRC will review the COE proposals and they will be evaluated using the evaluation criteria in order of importance



STARK STATE COLLEGE

Clark/Stark Judicial Court Reporting Program Share

Aimee Belanger-Haas, Dean, Business and Applied Technologies

Rene Eneix, CRI, Department Chair/Associate Professor

Julie Hardgrove, RPR, CRI, Associate Professor

Robyn Hennigan, RPR, CRI, Program Coordinator/Assistant Professor

Why and How We Combine Programs

Why?

- Low-enrollment program
- Increase ability to meet employment needs for profession
- Provide cost-effective delivery through distance learning
- Flexible learning for today's market demand

How?

- Met at central location to facilitate collaboration:
 - Discuss programs at each college
 - Choose course selection to be offered at each college
 - Discuss course development and technology
 - Customize seamless system for student services

Compliance Documents

- Higher Learning Commission
- ODHE – Memorandum of Understanding (MOU)

Administrative Considerations

- Financial Aid
 - Consortium Agreement
- Student Services
- Bookstore
 - All textbooks at both campuses
- Registration
 - Transcripts (FERPA release)
- Funding

Program Development

- Program Development
 - Program Learning Objectives
- Course Selection
 - NCRA General Requirements and Minimum Standards (GRAMS)
- Course Development
 - General Learning Outcomes
 - Learning Objectives
- Course Technology
 - Realtime Coach
 - Stenograph Machine
 - Case CATalyst
 - Blackboard/Angel

Advisory Committee & Accreditation

- JCR Advisory Committee
 - Twice yearly
 - Professionals in the industries (Freelance, Official, Captioning & CART)
- National Court Reporters Association
 - Joint Program Accreditation

What We've Learned

- Class Offerings
 - Curriculum
- Student Advising/Enrollment
 - JCR Program Information Document
 - Student Check Sheets
- Collaboration Tools
 - Dropbox
 - Free Conference Call
- College Support (President/Provost/Deans)

What's Next?

- Joint Assessment/Academic Program Review
- Prior Learning Assessment
- Bi-yearly MOU Review
- Captioning Certificate

Thank You and Questions

