

**Ohio Board of Regents Meeting Minutes  
Cleveland State University  
Center for Innovation in Medical Professions  
2112 Euclid Avenue, Room 112  
Cleveland, OH 44115**

**September 30, 2015**

**I. Call to Order and Opening Remarks**

Chair Vinod K. Gupta called the September 30, 2015, Ohio Board of Regents (BOR) Meeting to order and welcomed the Regents and Ohio Department of Higher Education (ODHE) staff to Cleveland State University (CSU). He apologized for not being able to join them for the tour and dinner last evening due to travel.

**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  
Thomas M. Humphries  
Kurt A. Kaufman

Elizabeth P. Kessler  
Virginia M. Lindseth

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 August 13, 2015, BOR minutes. There being none, Regent Kessler made a motion to approve the August 13, 2015, 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 August 13, 2015.

**IV. Institution Presentation – Cleveland State University**

Chair Gupta introduced Dr. Ronald M. Berkman, President of CSU. He said that Dr. Berkman has made a remarkable change in downtown Cleveland. He said that the President has led the way in Cleveland and he thanked him for being a leader in the innovation and commercialization area.

Dr. Berkman began his remarks by thanking the Chair for his kind words. He said that they were excited to have the BOR and ODHE staff visiting CSU and he hopes to enrich their experience this morning. He said that there are a thousand miracles that he could recite at CSU; but he believes that they will never reach nirvana in terms of higher education because they are an evolving institution in an evolving society.

Dr. Berkman said they have been in the Center for Innovation in Medical Professions building for approximately six weeks. He said that this project was a voluntarily collaborative effort between two University System of Ohio (USO) institutions – CSU and Northeast Ohio Medical University. He said that the building title in itself 'innovation' represents not a traditional classroom structure. He said it is a foundation to train a new generation of health care workers. He said that they will see an entirely different cohort of healthcare workers working in an entirely different way.

Dr. Berkman continued and said that they hope they have begun to develop a new paradigm for education in the health sciences area. He said this is particularly important for CSU; an urban university because an urban university clearly has to be responsive to the workforce needs of its community. He said they want to create a model in which students train in the community; are vested in the community during their training; and remain in the community after their training is complete. He said in other words they want to develop, nurture and train intellectual capital in the Cleveland area.

Dr. Berkman said they do everything that they can to allow students to be successful, manage costs, and connect students to a career path after completion of college. He said that internship and co-op experience is sometimes the differentiating factor as it relates to employer hiring decisions and helps the students invest and ultimately stay in the Cuyahoga County and surrounding areas. He said that student success, cost, career, and community sum up their mantra.

Dr. Berkman said that when an individual considers living in an urban area the two biggest factors they think about are schools that are available to send their children to and security. He said they wanted to solve the factor relating to the school aspect by partnering with the Cleveland Municipal School District to create an International Baccalaureate School for grades K-12. He said it received its global accreditation last year after its fourth year and it provides a rich background for their students. He said last year they added a STEM High School as part of the CSU campus as well. Relating to security, he said the campus and surrounding areas is a secure and safe environment for students, families and the community.

Dr. Berkman made comments about initiatives that CSU has undertaken to increase student success and they were the following: Acknowledging 'credit creep' and placing credit caps on each program at 120 credits (unless higher in instances of accreditation or licensure); instituted multi-term registration to assist with schedule predictability for at least three semesters; and a 2% tuition rebate and \$200 book allowance for those students who have completed at least 30 credits and are in good academic standing. With the tuition rebate and book allowance initiative they saw a significant increase in students who took 30 credit hours the first year of the program and they are planning the program again this year. They invested \$1.2M in 2014 in this program.

Dr. Berkman finished his remarks by discussing the results that have come about at CSU. He said that since 2003 they have seen an 18% increase in their retention rate at CSU. He said when he arrived at the university in 2009 the graduation rate was 23% (the worst in the state); this year their graduation rate was raised to 40% (above the national average). He said he mentioned co-ops and internships earlier but they have not forgotten their research mission and have created research affiliated partners. He said the *Chronicle of Higher Education* published the National Science Foundation (NSF) findings on research growth and research productivity among universities in the United States. With this, CSU was first in the nation in its percentage of growth from 2013-2014 to 2014-2015; first in the nation in federally-sponsored research; and twelfth in the nation for corporate sponsored research. He said they increased their research program with two very significant public-private partnerships – Parker-Hannifin and Cleveland Clinic. These were both responsible for this growth and helped them commercialize product.

Vice Chair Humphries asked how long the International Baccalaureate School for grades K-12 has been in operation and the number of enrollment. Dr. Berkman replied that this is the school's fifth year. He said there are currently more than 400 students; and at full capacity there will be over 800 students in the school.

Secretary Lindseth asked about the capacity of the STEM High School. Dr. Berkman explained the concept; schedule; and location(s) of this school and said that there are approximately 100 students per graduating class and each will leave with a significant amount of college credit. He said there were 71 students in the first graduating class and each one was admitted to college; most with significant scholarship opportunities.

Chair Gupta asked about CSU's international student program. Dr. Berkman replied that they have seen a dramatic increase this year; approximately 15%. He said these are largely graduate students.

Regent Kaufman commended him on his solution to 'credit creep' and asked if he knew where other institutions in the State of Ohio were on this issue. Dr. Berkman replied that this may be one of the recommendations of the Governor's Taskforce on Affordability and Efficiency to look at 120 credits as the threshold for degree requirements in most instances. He said some institutions have moved in this direction as this is a complicated exercise. Regent Kaufman said that he believes that CSU is putting the students first.

Regent Kaufman followed up with another question and asked what CSU did locally with College Credit Plus (CCP). Dr. Berkman responded that CCP is very important because students learn different things at different rates. He said if students are ready to move forward they should provide those opportunities. The ideal way to do is co-location of a STEM High School location and a post-secondary institution because of commuting and time constraints in some instances.

Chancellor Carey thanked Dr. Berkman and said that he has made a difference in downtown Cleveland. He asked him to make a few remarks about the urban school and said this model should be shared with the rest of the state and country. Dr. Berkman said that he wanted to give credit to the faculty as they have participated in one way or the other in the 'life' of this school. He said the key to the continued success is to get as many faculty involved in the process as possible. He said he has every expectation that the demand for the school will grow.

Chancellor Carey made remarks about the Governor engaging the institution presidents in higher education policy in the State of Ohio and asked Dr. Berkman to comment about this as compared to his colleagues in other states. Dr. Berkman replied that he does not believe there is any other state in the United States in which presidents have been given a stronger role in establishing policy and programs than in the State of Ohio. He said with this comes accountability and the state may ask them to exercise the diligence they should be exercising in terms of what they do with the state dollars that they are given.

Relating to the research efforts, Vice Chair Humphries asked if CSU had a relationship with the National Aeronautics and Space Administration (NASA). Dr. Berkman replied that there is a very strong relationship between CSU and NASA. He said this is a relationship they hope to mature now that they have support for their Aerospace initiative. He said two of their most prominent Executives in Residence, Dr. Julian Earls and Dr. Woodrow Whitlow Jr, are former NASA Directors.

Secretary Lindseth asked about safety and security on CSU campus. Dr. Berkman said they recently hired a new police chief with an extensive background in this area and he said keeping CSU a safe corridor is one of their highest priorities. He said in comparing data with other institutions similar to theirs around the country they do extremely well.

Chair Gupta made remarks about the Governor's Taskforce on Affordability and Efficiency as it relates to privatization and wanted Dr. Berkman's thoughts on this. Dr. Berkman said he believed that they should focus on their core business; their core business is not parking; construction; food services, etc. He said where they are able to find entities that have these businesses and additional costs are not borne by students as a result of privatization they should look to slender their portfolio.

Chair Gupta followed up and thanked Dr. Berkman for what he has done for economic development and commercialization. He also thanked him for making CSU a Tobacco-Free campus. He said that the comments that he made regarding cooperation and collaboration are words that they are trying to instill on each president in the state. He said that Dr. Berkman takes these words to heart and practices them.

Chair Gupta asked Dr. Berkman what the BOR could do to assist him. Dr. Berkman replied that the BOR has played an important role in providing a framework for them. He said that they need to continue to 'push' them to the next level in terms of success, accountability, and using their resources efficiently.

## V. Chancellor's Report

John Carey, Chancellor of the ODHE began his Chancellor's Report by saying that the Governor has given them some direct and informal challenges and their whole report will be comments focused on what is best for the student. He said besides the pressure they are feeling internally to do better in higher education in the State of Ohio, the reality of the fast changing world forces them to do things differently as well. He said higher education is not used to that 'speed of change'. He said he is very proud of the work that the BOR has done to assist them with establishing policy as it relates to these changes.

### A. College Affordability

Chancellor Carey said that Secretary Lindseth asked him to provide an update on College Affordability. He said that in the State of Ohio the Governor and the legislature with the advice of the BOR have focused on different pathways in the area of higher education; many would take the path of cutting higher education, which has been done before, but this has received very mixed results. He said because of increased collaboration between the communities; the Governor; the legislature; and higher education there is now more support for higher education than ever before and there is a bi-partisan effort.

Chancellor Carey said that according to the Lumina Foundation, 65% of the jobs in the State of Ohio by 2025 will require some type of post-secondary credentialing (certificate, degree, etc.). He said they are recruiting students from the Adult Basic and Literacy Education (ABLE) all the way to the typical college-bound student which presents different challenges.

Chancellor Carey said many of the policies that the BOR has done through their Condition Report end up being recommendations from the ODHE, to the Governor's office, to the legislature and these end up in law. He said they may not see an immediate impact but the line of thinking influences their policy.

Chancellor Carey outlined the following as it related to College Affordability:

- 1) Governor's Taskforce on Affordability and Efficiency Report - He said that this report is due tomorrow and the law requires that the each institution's board of trustees evaluates these recommendations. John Magill, Assistant Deputy Chancellor, Economic Advancement of ODHE explained that during this process the task force traveled across the state to hold meetings at institutions to hear about projects that were underway at the institution level to increase efficiency and affordability while meeting or exceeding expectations of students. He said there was a focus on students by all parties. Charles See, Assistant Deputy Chancellor for External Relations said that the report will be the primary subject of the 2015 ODHE Annual Trustees Conference in November and the Chair of the taskforce will be providing an overview of the report.
- 2) Performance- Based Funding - He said that they are starting to see dividends in this area; the graduation rates have increased and the retention rates have increased as well. He said with performance-based funding, the legislature budgeted an additional 8.5% (approximately \$200M) over the next two years, into higher education.
- 3) Tuition Rates - He said the State of Ohio ranked 49<sup>th</sup> out of 50 states as it related to tuition increases; this with an overall average increase of 2.8% over the five years (the State of Maryland with an overall average increase of 2.2% is the lowest). He said the state is currently under a two-year tuition freeze that is mandated by the legislature at this time. However, he said the institutions have been largely responsible with holding tuitions down.
- 4) Three-plus-one and Two-plus-two agreements- He said they are seeing more and more students take advantage of the two-plus-two agreements (two years' worth of coursework at a community college before completing a Baccalaureate degree on a main university campus in their third and fourth year) to save money. He said they are also seeing some three-plus-one agreements as well (three years' worth of coursework at a community college before completing a Baccalaureate degree on a main university campus in their fourth year). Brett Visger, Associate Vice Chancellor for Institutional Collaboration and Completion, added that the budget bill included language that by 2018 all Associate Degrees earned at an Ohio public institution have to articulate to

Baccalaureate Degrees in the same discipline. He said the ODHE staff has begun working with the Inter-University Council of Ohio and Ohio Association of Community Colleges to move this forward. He said Lorain County Community College has been the leader in the state in the area of three-plus-one agreements. Vice Chair Humphries asked if the 'credit creep' issue was part of the three-plus-one and Two-plus-two discussions. Chancellor Carey said this is one of the ten points in the newly updated ODHE Academic Program Review Manual. He said it is now a requirement that an Associate's Degree is capped at 65 credit hours and a Bachelor's Degree is capped at 126 credit hours (unless higher in instances of accreditation or licensure). Senior Vice Chancellor Cates added that he believed the performance-based funding has assisted the institutions with the realization that they need to increase the pathways to completion.

5) CCP - He said when this program initially began they were at 5% increase and if they get to 10% this will be a significant increase. He said they want to provide different pathways for students to take advantage of the different programs that are available to graduate from a post-secondary institution with little or no debt. Assistant Deputy Chancellor See said they are focused on the 'Summer CCP portion of the program' as this is now required under statute. He said they are in the process of drafting rules to accommodate this portion of the program. He said a CCP advisory committee is being formed to discuss information and issues that may have affect the program.

Regent Kaufman asked what is being done to ensure that the CCP program is being conducted as intended. Assistant Deputy Chancellor See replied that there are rules in place and as they are notified about issues they address those immediately and offer technical assistance where needed if it's a systemic issue. Chancellor Carey added that they do have the authority to revoke an institution's participation in CCP if they do not follow the rules.

Relating to the credit hour caps for Associate's and Bachelor's Degrees, Vice Chair Humphries asked is the private institutions requirements were similar. Associate Vice Chancellor Visger said he did not have the data at this time, but he would research it for the BOR.

6) Career Counseling/Work Experience - He said this initiative appeared in the budget bill. They have been in discussions with twenty USO institutions to understand more clearly what they are doing in this area to meet the expectations to serve students.

## **B. I-CORP Ohio Update**

Assistant Deputy Chancellor See provided an I-CORP update. He said that this \$2.4M initiative outlined in the Commercialization Report, fiscally managed by The Ohio State University (OSU), involved educating faculty on the commercialization process and incentivizing them to focus their efforts around a project that can be commercialized. He said a lot of faculty members are not aware of the commercialization process. He said the NSF has led the way with these efforts. The NSF has sponsored national programs where they bring faculty who have developed prototypes into an educational environment and give them instruction on how to validate the commercial potential of their product but Ohio faculty have not been accepted into the national program at a rate that would be impactful. Ohio worked with NSF to create the structure and the concept for the Ohio I-CORPS program. He said they had their first cohort this summer and various institutions completed the seven-week process; they intend to have another cohort in the spring for a total number of twenty teams going through the process the first year. They will have another two-set of twenty cohorts in the following years.

Assistant Deputy Chancellor See said they have gained the interest of the Ohio Third Frontier Commission (OTC) and the I-CORP team presented before the OTC meeting last month. They are actually formalizing one of their early stage funding models. He said they have also gained attention from the venture community and on October 19<sup>th</sup> a venture partnership firm is sponsoring a spotlight of several of the I-CORP teams.

### **C. Research Portal Update**

Chair Gupta asked Assistant Deputy Chancellor See to provide a Research Portal Update. Assistant Deputy Chancellor See began by explaining that the Research Portal is a single database wherein industry; faculty; or researchers would be able to find research and faculty expertise on various subject matter and equipment and facilities in a centralized location. He said the portal is focused around Engineering and Biomedical Health. He said that they have been working with OSU, Ohio University (OU), Case Western Reserve University, and the University of Cincinnati on this project. He said at this point where the institutions have made their directory data available and they are in the process of building out this data. They want to incorporate this into the Chancellor's technology consortium.

Chair Gupta asked who the Project Manager of the Research Portal was. Assistant Deputy Chancellor See replied Tim Caine, an Executive on loan from OU, who has a vast amount of experience in this area, most recently with OSU.

Vice Chair Humphries asked where the \$2.4M funding for the I-CORP Ohio program originated. Assistant Deputy Chancellor See said this was part of the ODHE Research Incentive Line Item.

### **VI. Biomimicry: Using the Wisdom of Nature to Drive Economic Development & New University Partnerships**

Chair Gupta introduced Thomas N. Tyrrell, CEO and Founder, Great Lakes Biomimicry (GLB). Mr. Tyrrell and his team presented a PowerPoint presentation which can be found as Attachment #1. He distributed information regarding the history of GLB; history of GLB board members; and a cross section of pertinent articles that have been written about GLB within the last twenty-five months.

Mr. Tyrrell began his remarks by introducing colleagues and students that had joined him for the presentation. He introduced: Peter Niewiarowski, Ph.D., Professor Integrated Bioscience and Biology, University of Akron, Principal Investigator, Biomimicry Research and Innovation Center; Ven Ochaya, Ph.D., MBA Associate Professor of Business and Director of the Entrepreneurship and Sustainability MBA Programs, Baldwin Wallace University (BWU), Education Services, GLB; Donald Knechtges the Vice President of Economic Development at GLB; Bob Gray Executive Vice President of EPT Technologies; and four international student fellows representing companies that they are partnered with: Daphne Fechey-Lippens from Belgium; Sebastian Englehardt from Germany; Arianna Rupp from Portugal; and Badefshah Hakipoor from Iran.

Mr. Tyrrell said that Biomimicry is a work that is derived from Bios – Life and from Mimesis - to imitate. He said this is innovation inspired by nature and it is a unique approach that reverts back to using nature as a guide. He said it combines a cohort approach and Biologists, Designers, Engineers and Businesses begin to work together. He said Biomimicry births sustainability. He shared examples of innovation that were inspired by nature as outlined in the presentation: Bird Friendly Glass; Shinkansen Bullet Train; and Fluid Dynamics in ocean use.

Mr. Tyrrell said that Biomimicry is not a discipline. He said that Janine Benyus has become a global leader in Biomimicry. He said that her background as a biologist and a natural sciences writer led her in this direction to change the world beginning in 1997. He said that there is a global network development of biomimicry and that has expanded over the last several years. With this, he said that the economic impact by 2030 of Bioinspired Innovation could account for: \*\$425B Annual US GDP (2010 Dollars); 2M New Jobs; and \$1.6T Annual Global GDP. *\*Fermanian Business and Economic Institute Nazarene University report.*

Mr. Tyrrell said that he believes that Northeast Ohio is uniquely structured to change the world in a place-based way for the following reasons: Many private science education institutions; very unique STEM school initiatives; University aggregation offers collaborative opportunities in research and technology transfer; University of Akron has the only Integrated Biosciences Ph.D. training in Biomimicry; they are Building a database of Biomimicry subject matter experts; The area has a Living learning laboratory environment; and GLBio first Biomimicry 3.8 Founding Affiliate.

Mr. Tyrrell outlined how they are a catalyst organization and strive to work within the community. He said their guiding principles are their Vision: NEO is the global application center of educationally driven economic development initiatives through place-based innovation inspired by nature and their Mission: To create conditions for innovation through biomimicry. He said the areas of impact are: Talent Development; Economic Value / Competitive Advantage; and NEO as Hub of Biomimicry Innovation.

Dr. Niewiarowski began to discuss talent development and said that this is a big focus of what they have been developing over the last three years. He said that this is a Biomimicry Ph.D. Research and Education platform. He said on an annual basis they recruit students from around the world to come to their center in Northeast Ohio to earn the highest level of training in Biomimicry Research at the Ph.D. level. He said this is the first of its kind in the world and is built on a very unique platform that was approved by the BOR over seven years ago. He said this program, the Integrated Bioscience Ph.D. 'sits' across all of the colleges and admits students at the Bachelor's or Master's Degree level with any kind of degree. He said this is a very flexible program and allows them to bring cohorts of students together that do not typically work together.

Dr. Niewiarowski said they have both corporate and education fellows. He said the corporate individuals work with the companies for approximately five years and learn to develop Biomimicry to the company's problems or challenges. He said they have corporate sponsors from around the world. He said the education fellows work with K-12 partners in the schools to create Biomimicry curriculum throughout the K-12 pathway. He mentioned that Lorain County Community College launched the Great Lakes Biomimicry Technology Center which is very important for the focus on fresh water. He said with other partners they can address water technology issues in an inter-disciplinary way around nature's principles.

Dr. Ochaya began his portion of the presentation by saying that he wanted to share some interesting initiatives that are driving Biomimicry mindset as a way for students to look at the challenges that are facing us today. First, he said BWU piloted a course last fall with incoming freshman that allowed them to look at the Biomimicry model at large. The interesting result was this was a very successful class. He also said that BWU is streamlining the curriculum because Biomimicry is the integrated capstone experience. He said they are also collaborating with other institutions and organizations as outlined in the presentation as it relates to Biomimicry.

Mr. Tyrrell summarized the talent development with the Beta Schools and sponsors as outlined in the presentation. Relating to economic value and competitive advantage, he said they have: Informed and engaged NEO economic development partners; Established substantive in-kind service partner network; Secured fifteen fellow sponsor (seven fellows from outside of the United States); Formed Corporate Innovation Council (comprised of ten corporations); Initiated Biomimicry Research and Innovation Center (University of Akron); Opening Great Lakes Biomimicry Technology Center (Lorain County Community College; and Finalizing the Cuyahoga County location for GLBio Inc. He also spoke about GLB's action agenda for 2015-2016 and Biomimicry as advanced by them as outlined in the presentation.

Chair Gupta asked about the innovation and commercialization. Mr. Gray responded that they have been very successful over the last five years and there have been a number of patents that have been filed based directly on this Biomimicry work.

Secretary Lindseth asked what course was involved in Biomimicry. Dr. Niewiarowski replied that is a program related to graduate study that involves many courses. He said what is interesting about the program is that they are bringing in students from different disciplines into the Biomimicry program.

Chair Gupta said what they are doing is very innovative and collaborative; he said they are also bringing institutions and industry together in ways that have never been done before. He asked if they have asked the ODHE for funding. Mr. Tyrrell replied they have not; he said he is an entrepreneur and explained the process he goes through. He said he and his partner funded the program for the first four years; and now they seek sponsors for the fellows.

Regent Kaufman asked in terms of the ODHE Ohio G.R.E.A.T. program how many of the fellows planned to stay in the State of Ohio or Northeast Ohio. These students gave various answers, but most said they could see themselves staying here if given the opportunity or having a connection to this area. Dr. Niewiarowski added that what is critical is that they create a foundation where they attract, keep and send out talent because they are building strength here in the state by sending some of our best and brightest to carry the message, deliver the training and connect ideas. Chair Gupta said when international students are abroad sometimes they bring more economic value to the United States.

Chair Gupta said the amount of passion and dedication they have shown is to be commended. He thanked them for their presentation and asked what the BOR could do to assist them. Mr. Tyrrell replied that appearing before them and recognizing that what they do has credibility means a great deal. Related to funding, he also said if there is a way that a line item could be directed to institutions for the area of Biomimicry and being able to utilize the Innovation Fund for commercialization. Chair Gupta said he is personally committed to assisting them with whatever they need.

#### **VII. The Academic Nexus of The Ohio-Israel Partnership**

Chair Gupta introduced Howie Beigelman, Executive Vice President of the Ohio Jewish Communities (OJC). He presented a PowerPoint presentation which can be found as Attachment #2. Mr. Beigelman began his presentation by saying that he was appreciative of everything that the BOR and ODHE was doing. Mr. Beigelman spoke about his personal history and said it was his parents' dream that their children do better.

Mr. Beigelman said there were several partnership<sup>2</sup>Gether Cities with the following initiatives: Akron/Dayton/Toledo Youngstown - Akko/Matte; Asher Columbus-Kfar Saba; and Cleveland-Beit Shean/Valley of Springs. He said about two years ago there was a Memorandum of Understanding (MOU) signed between the Ohio Developmental Services Agency and Israel. This MOU focuses on creating matching research opportunities.

Mr. Beigelman stated fast facts about Israel and said it is the number two startup ecosystem in the World, after Silicon Valley; He said the key industries are: Agriculture; Aerospace; Defense; Pharmaceutical; Medical; and High Tech. He said a lot of these industries are also in the State of Ohio so there are opportunities for synergy.

Mr. Beigelman outlined the current Ohio-Israel Academic Cooperation with institutions across the state as outlined in the presentation. He said there is a great deal of industrial funding for international students from the CCH. He said Sinclair Community College is partnering with Simlat to provide leading Unmanned Aerial Systems simulation training. He said there are also Internships and Co-ops as well.

Mr. Beigelman discussed potential new arenas and they were the following: Cybersecurity; Agribusiness; UAV; Startups; and Medical and Life Sciences. He said that Cleveland Clinic Innovation just made a deal with the largest health insurance fund in Israel to start Digital Health Technology. He said both countries want to collaborate because of each other's strengths in various areas. He said that the next steps are the following: Assess best areas of commercial synergy; Access areas of increased academic cooperation; and Access funding and human capital.

Mr. Beigelman ended his remarks with those about hope and opportunity and said that colleges of opportunity create hope for those in the United States and for those abroad. He said he thinks they create hope for a better tomorrow, this from a better knowledge base to other areas of their lives.

Vice Chair Humphries asked what state in the United States had the largest relationship with the country of Israel. Mr. Beigelman said the States of New York and Maryland have very established marquee programs and funding. He said he also understands the State of Boston has the best Israeli start-up representation in the country.

Vice Chair Humphries followed up with another question and asked how old and strong was the Ohio and Israel agriculture related relationship. Mr. Beigelman responded that it was very strong and the relationship dates back to the 1990's.

Chair Gupta asked what it would take to make the State of Ohio the next 'State of Boston'. Mr. Beigelman responded that it will take figuring out some of the areas of synergy and letting the ecosystem involve. He said it will also require some funding commitment on both sides. Chair Gupta then asked what the BOR could do to assist him in his efforts. Mr. Beigelman replied that what the BOR is doing right now is very helpful; having a forum to get their message out. He said that helping the intuitions know that these opportunities are out there with partners in their areas in expertise. He said it is also important to have access to funding and individuals with expertise.

**VIII. Northeast Ohio Council on Higher Education (NOCHE) - Southwestern Ohio Council for Higher Education (SOCHE) Collaborative Project Update**

Chair Gupta introduced Dr. Sean Creighton, President of SOCHE and Bob Manning, Chief Operating Officer of NOCHE. He said they presented before the board as separate entities a few months ago and the BOR asked them to collaborate. He said that they are here today to present an update on their efforts to date. They jointly presented a PowerPoint presentation which can be found as Attachment #3.

Dr. Creighton began by saying that the combined history of SOCHE and NOCHE is over 110 years and the combined student population is over 400K. He said they have cooperated with each other and understand each other's missions. He said they have worked together in the past and co-promoted events and programs. He said they are appreciative of the challenge of the BOR and that has stimulating them to work together towards a SOCHE/NOCHE collaborative that they believe could have statewide impact.

Dr. Creighton provided an overview of SOCHE. He said that SOCHE is the organizing body for higher education in their region and was established in 1967. They focus on bringing faculty, students, administrators and staff together to share best practices, identify challenges, and look for opportunities. He shared a profile of SOCHE's membership and some of the diverse institutions they represent. He said SOCHE's vision is - Every Ohioan educated, employed, and engaged. He said that that SOCHE was comprised of the following: a twelve county region of Southwest Ohio; twenty-two colleges and universities; 155K students; 21K degrees and certificates; and twenty-two college presidents are represented on their board. He said SOCHE runs a robust internship program that allows students to have experiential learning and be competitive in the workforce upon graduation.

Mr. Manning then provided an overview of NOCHE. He said that they are diverse and focus on enhancing student's success. He said that NOCHE's footprint is the following: a twenty-three county region of Northeast Ohio; thirteen colleges and universities; 226K students; 35K degrees and certificates; and they work with hundreds of businesses and twenty business members are represented on their board. He said NOCHE serves as a backbone organization for engaging higher education, business, industry, the community, and the student to strive to improve educational outcomes.

Mr. Manning continued and said since the BOR meeting and the member's challenge for their organizations to collaborate they began this initiative through a series of telephone calls in the month of June and these are ongoing. He said there was a NOCHE-SOCHE Leadership Workshop held on August 4<sup>th</sup> in Springfield and during this workshop they discussed each organization's mission, programs and structure; how each organization could collaborate on the results in each organization in improving on what it currently does; and as a result, increase market penetration in their respective geographic areas. He said they particularly started focusing on their internship programs and how they work with the institutions and industries in their respective regions. He said they had another session in Cleveland just a week ago; and they have another follow-up planning session scheduled for September 23<sup>rd</sup> that will also be focused on their internship programs. The goal will be to develop a comprehensive internship program by combining the best components of the current NOCHE and SOCHE programs into an integrated end to end solution. He said the internship program's major elements will be the following: Development and Training; Recruitment Process; Program Management; and Program Measurements.

Dr. Creighton discussed the Federal Research Network (FRN) Pilot Project. He said this is an opportunity to support the centers of excellence. He said they already support the Air Force Research Laboratories and National Aeronautics and Space Administration in their respective regions. However, he said this is an opportunity for a collaborative network between institutions and centers of excellence to do this same research and potential commercialization for federal installations in the State of Ohio. He said NOCHE and SOCHE will identify the research student talent and frame out what a statewide approach will look like in this process.

Dr. Creighton finished by outlining their next steps in their collaboration process and said that they include the following: Continue program development through meetings; Finalize program elements and a launch plan; Prepare to work with the FRN in the New Year; and Evaluate program progress and resources. He thanked the BOR and said that he hopes that they are invited to provide a status update in the future.

Secretary Lindseth asked if at some point they would merge SOCHE and NOCHE. Dr. Creighton replied no; the regional strength and the long standing relationships are really important so they want to maintain that sense of identity in their region but work collaboratively.

Secretary Lindseth followed up with another question and asked about the internship pipeline. Dr. Creighton replied that there is a supply-side of 400K students that they have access to and the demand-side is the workforce. He said internships are the key strategy for developing their workforce and recruiting the talent that they need.

Chair Gupta asked if NOCHE and SOCHE applied for the Ohio Means Internships and Co-Ops (OMIC) Grant funding directly or do they have to go through an institution. Dr. Creighton responded that no they have never received OMIC grant funding they have only advised member institutions on shaping their proposals. He said they received most of their internship funding from the overhead rates from the federal and city government. Assistant Deputy Chancellor Magill added that the law is explicit; only public institutions can directly apply for grant funding, however they can partner with other entities

#### **IX. 9th Condition Report Topic Discussion**

Assistant Deputy Chancellor See began this discussion by saying that the 8<sup>th</sup> Condition Report related to Adult Learners has not been finalized yet as it is awaiting input from all stakeholders. He said a meeting is scheduled for Friday to discuss the report. He said they are still on target to be completed by the end of the calendar year.

Assistant Deputy Chancellor See said where they are today is to discuss initial potential topics for the 9<sup>th</sup> Condition Report. He said from this point Chair Gupta will designate a Chair of the Condition Report Subcommittee that will lead the production of the next report. Chair Gupta continued this discussion and asked the members for topics for consideration.

The members began to discuss various topics in the areas of the following: Secretary Lindseth - Collaboration; Chair Gupta – Campus Security; Vice Chair Humphries – tabled items from past Condition Report discussions that they may want to explore if any; Regent Kessler – Cost and Affordability; Vice Chair Humphries – Attraction of Students; and Regent Kaufman – Marketing of the USO.

Assistant Deputy Chancellor See said collaboration is more of a 'theme' across all of the initiatives. Relating to campus security, he said that there is a current initiative going on in this area and the ODHE will be releasing some recommendations soon. As it relates to cost and affordability, he said that the Governor's Taskforce on Affordability and Efficiency report is due and the as stated earlier the institution's boards of trustees will have some responsibility with respect to this report and engaging in areas of efficiency which will produce cost savings.

Chair Gupta summarized the initial topics that were discussed by the members as the following: Collaboration; Campus Security; Cost and Affordability; Student Attraction; and Marketing of USO. He said that the marketing component must be a part of whatever topic they decide upon. He said that they will see what recommendations are released by the Governor's Taskforce on Affordability and Efficiency and the ODHE on the topic of Campus Security and determine what next steps to take on these topics from that point.

#### **X. Tobacco Free Resolution Policy Update**

Chair Gupta recognized former BOR members James M. Tuschman, Patricia A. Ackerman and Lana Z. Moresky who were invited back to hear the Tobacco Free Resolution update as they were members of the board when this very important resolution was passed. He said when this resolution was passed there was a very robust debate about this topic prior to passage but they felt it was very important.

Chair Gupta introduced Toby Cosgrove, M.D., President and Chief Executive Officer of Cleveland Clinic (CC) and Michael F. Roizen, M.D., Chair, CC Wellness Institute and Chief Wellness Officer, CC. He said that they both were very instrumental in the passage of this initiative and well respected and admired in their fields of work. Dr. Cosgrove and Dr. Roizen presented a PowerPoint presentation which can be found as Attachment #4.

Dr. Cosgrove began the presentation by congratulating them on the bold step that they took over two years ago. He said that they have learned a great deal as they have gathered data over the last several months. Dr. Roizen continued the presentation by stating the following the following CDC data as outlined in the presentation: the prevalence of current of cigarette smoking among adults has decreased from 25% in 1997 to 17% in 2014; prevalence of tobacco use among college students has decreased from 20% to 5% (smoked regularly, last nine days etc.); Relating to the Prevalence of cigarette smoking 16% high school Seniors, 20% ages 18-26 (2014), 88% started by age 19, and 37% college students start in college. He said that tobacco use is still the largest direct medical cost by the CDC's estimate of \$200B annually; it is still the largest cause of disability in the United States; and it is still the largest cost in disability insurance. He said the CDC also found that virtually no individual began tobacco use after the age of twenty-five; so the college years are very important.

Dr. Roizen continued outlining data in the presentation relating to tobacco and smoke free campuses by stating the following the following: Relating to tobacco-free campuses: 1,079 banned all forms; the State of Ohio had sixteen in 2016; the State of New York has 192 of 194; Arkansas, Iowa, and Oklahoma have 100% smoke free public campuses. Dr. Roizen said the following campuses of the Big Ten are smoke-free: Penn State, Indiana University, University of Illinois, Iowa University, University of Michigan, and OSU.

Dr. Roizen finalized his data points by saying that they surveyed the State of Ohio's community colleges, four-year public institutions, and four-year private institutions relative to the tobacco free policies and he discussed the policy impact as outlined in the presentation.

Former Regent Tuschman spoke about the history of the resolution process and said they thought the students would revolt. He said when Dr. Cosgrove and Dr. Roizen first appeared before the board to speak about this issue they were very persuasive and gained 100% support of the board. He said it is important to give recognition to the boards of trustees of the institutions that have implemented policies on campuses as this is great news. Dr. Cosgrove said they showed great strength as they had the best interest of the students in mind.

Chair Gupta asked what they recommended as next steps would be as a follow-up to the resolution to get more institutions to implement policies. Dr. Cosgrove replied from his experience transparency is the greatest tool that they have; thus making it public of those that do and do not have a policy. He said drawing attention to it through the media and other means is a way to get them to move in that direction. Former Regent Tuschman added that he believed part of their success was working with the boards of trustees of the institutions and getting them to work within their own environment.

Former Regent Ackerman asked if the data about tobacco-free signage on campuses was collected. Dr. Roizen responded that this data was not collected. He said in some cases the policy was not honored about avoiding

smoking near the entrances; but the signage was still there. Former Regent Ackerman said it would seem that signage may be a message of communicating the policy; on many tobacco-free campuses she has not seen the signage prominently displayed.

Chancellor Carey thanked both the current and former Regents for pursuing this policy. He also thanked Dr. Cosgrove and Dr. Roizen for their presentation. He said that this model has been so successful that they plan to use it for other campus initiatives. He thanked Dr. Cosgrove and Dr. Roizen for their leadership and for making a difference in the lives of students and others.

Secretary Lindseth said it has been very exciting to see this process transpire. She said she is thankful and appreciative for their efforts. The members continued to discuss this topic broadly and the way this impacts students. They said the institutions should deal with this issue. Chair Gupta said that he believes there should be more involvement and greater action. He said he wants to be more pro-active and have more communication with the institutions.

With this, Chair Gupta asked for a motion to appoint a staff member of the ODHE to work more closely on the Tobacco Free Resolution Policy implementation at the USO institutions and provide an update on these efforts at the next scheduled meeting of the board. This motion was made by Regent Kaufman and seconded by Vice Chair Humphries. All voting members of the board voted in favor of this motion and it passed unanimously.

## **XI. Open Discussion**

### **A. Topic One – Next meeting**

Chair Gupta said that he has asked for the Regent Kaufman to Chair the nominating committee for the slate of board officers. He said that they will vote on the following slate of officers at the next scheduled board meeting which is yet to be scheduled: Chair; Vice Chair; and Secretary. He said the next meeting will likely be scheduled around the ODHE Annual Trustees Conference.

Chair Gupta asked the members if there were any additional topics they would like to bring forward. The members brought no additional items to discuss to the table.

## **XII. Adjournment**

Chair Gupta asked if there were any further items to be brought before the Board. There being none, Chair Gupta asked for a motion to adjourn the meeting. A motion was made by Regent Kessler and seconded by Vice Chair Humphries. All voting members of the board voted in favor of the motion adjourning the meeting and Chair Gupta declared the meeting adjourned.

  
Ohio Board of Regents

11/5/15  
Date



*OHIO DEPARTMENT OF HIGHER EDUCATION*

## *Biomimicry 101*

What is Biomimicry?

- From Bios: *Life*
- From Mimesis: *To imitate*

Innovation inspired by nature

- Combines Biologists / Designers / Engineers / Business
- An approach to operationalize sustainability goals

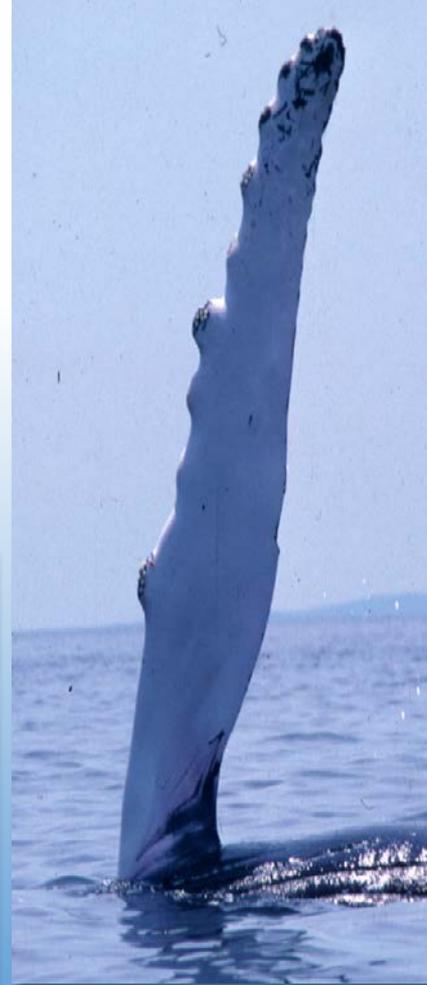
# *Biomimicry: Innovation...Inspired by Nature*



Bird Friendly Glass



Fluid Dynamics



Shinkansen Bullet Train



## *Biomimicry 3.8*

### *Janine Benyus*

- Began in 1997
- International Expert
- Global Movement
- Nature = 3.8B Years of R&D



*“I met the first three Biomimicry PhD students in the world in Akron, Ohio. These fellows are going to be helping companies to solve challenges through nature. Another group of PhD students will be working with K-12 teachers. That is what I am proud of.”*

*Janine Benyus, 2012*

# *Global Network Development*

## *Economic Impact of Biomimicry*

By 2030 Bioinspired Innovation Could Account For \*

- \$425B Annual US GDP (2010 Dollars)
- 2M New Jobs
- \$1.6T Annual Global GDP

*\* Fermanian Business and Economic Institute, Nazarene University report  
commissioned by the San Diego Zoo Global Center for Bioinspiration*

## *Why Northeast Ohio?*

- Private science education institutions – informal education
- Unique STEM school initiatives
- University aggregation offers collaborative opportunities in research and technology transfer
- UA Integrated Biosciences PhD training in biomimicry
- Biomimicry subject matter experts
- Living learning laboratory environment
- GLBio first *Biomimicry* 3.8 Founding Affiliate

*NEO can be the place-based global leader!*

# Catalyst Organization



BRIC  
(University of  
Akron)  
GLBio  
Technology  
Center  
(LCCC)

Public -  
Private  
Partnerships

Business  
Partners



Colleges &  
Universities

Investors and  
Fundors

K - 12  
Schools and  
Classrooms



## *Guiding Principles*

### ***Vision:***

NEO is the global application center of educationally driven economic development initiatives through *place-based* innovation inspired by nature

### ***Mission:***

To *create conditions* for innovation through biomimicry

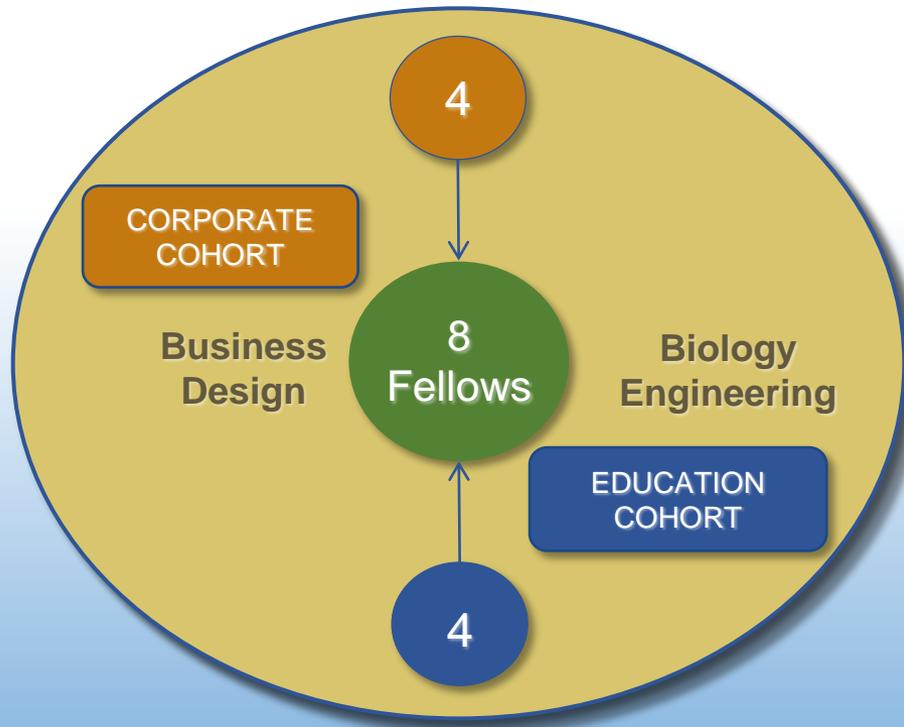
## *Areas of Impact*

- **Talent Development** – world’s first integrated PK-PhD biomimicry education ecosystem, uniquely poised to retain and attract students, from around the world, to NEO’s institutions of higher learning
- **Economic Value / Competitive Advantage** – place-based innovation and economic development engine, powered by *Nature’s Genius*, engages, incubates and attracts companies and jobs for graduates
- **NEO as Hub of Biomimicry Innovation** – global application center for educationally driven economic development



# Talent Development: Integrated Bioscience PhD in Biomimicry

The University  
of Akron





# Talent Development: Corporate Sponsors



SHERWIN-WILLIAMS



Kimberly-Clark



Avon Lake  
Regional Water

# *Talent Development:* Higher Education Partnerships

- **UA:** launched *Biomimicry Research and Innovation Center (BRIC)*
  - \$4.25 + \$2.5M annually including 10–12 new interdisciplinary faculty
- **LCCC:** established *Great Lakes Biomimicry Technology Center*
  - likely to include CWA, ALRW, NASA, Parker Hannifin, NEORS
- **BWU:** instituted first-year experience and senior capstone classes
- **CWRU:** NSF grant collaboration; tech transfer discussion; Fowler Center; Strategic Innovation Lab; Think(box)
- **CIA:** PhD Class w/UA; Nottingham-Spirk sponsored biomimicry class

*In-discussion: CSU, Hiram, KSU, Oberlin, YSU*





# *Talent Development:*

## Beta Schools and Sponsors

- **CMSD: MC<sup>2</sup> STEM High School** – *The Cleveland Foundation*
- **CMSD New Schools** – *Teaching Institute for Excellence in STEM*
- **Cleveland Metroparks Zoo** – *programs for CMSD STEM MS*
- **NIHF STEM Middle School** – *GAR / Dominion Foundations*
- **Lake Ridge Academy** – *Nord Family Foundation*

***In discussion:** Akron Public Schools, Amherst Exempted Village Schools, Bio-Med Academy, Breakthrough Schools, CMSD New and Innovative Schools, Cuyahoga County Library System, Elyria City Schools, Geauga iSTEM HS, Hawken School, Lake County Schools, Lorain County Schools, Old Trail School, Tallmadge Schools, Wellington Exempted Village Schools, Western Reserve Academy, Willoughby-Eastlake Schools*

## *Economic Value / Competitive Advantage*

- Informed and engaged NEO economic development partners
- Established substantive in-kind service partner network
- Secured 15 fellow sponsors – seven fellows from outside USA
- Formed Corporate Innovation Council – 10 corporations
- Initiated *Biomimicry Research and Innovation Center* (UA)
- Opening *Great Lakes Biomimicry Technology Center* (LCCC)
- Finalizing Cuyahoga County location for *GLBio Inc.*



## *GLBio Inc.*

- Unique hybrid entrepreneurial not-for-profit model
- Received 501(c)(3) authorization – November 2013
- Virtually self-funded for first four years
- **27,000+** volunteer hours invested– no one paid first four years
- High-level, engaged board – includes six significant educators
- \$250K+ in-Kind support from service partners through 2015
- Commitments for over \$2M for PhD Fellow sponsorships

## *2015-2016 Action Agenda*

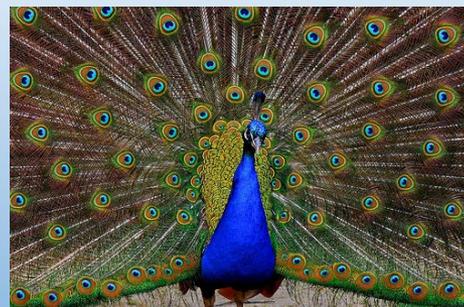
- Fully fund 2015 operating budget / PhD fellows program
- Establish educational staffing / advance teacher consortium
- Professionalize curriculum / teacher professional development
- Create / deliver *Business Education Modules*
- Expand / enhance *Corporate Innovation Council*
- Assemble *Subject Matter Expert* data base
- Complete communication platform / Strategic Plan 2.0
- Construct and pilot *Product Innovation Services*

## *In Summary*

### **Biomimicry as advanced by GLBio:**

- Attracts / retains students in STEM related fields
- Attracts minority and female populations to STEM programs
- Open Innovation / Innovation Council drive commercialization
- Formal / informal STEM learning programs feed our colleges
- Attracts global students – only education ecosystem in world
- Engages, incubates and attracts companies and jobs for grads
- Can replicate program growing in NEO to rest of state

***Ohio's Colleges / Universities require funding to develop biomimetic pedagogy – GLBio needs capacity building support to deliver it!***



Gecko-inspired adhesive

Camouflage and signaling

Swarm behavior and routing

# *Talent Development:* PhD Fellow Program



## **Corporate Sponsorship**

- Total \$129,000 over five years
- \$25,800 per year
  - \$20,800 PhD Fellow Stipend
  - \$5,000 Corporate Innovation Council / Professional Education

## **Education Sponsorship**

- Total \$148,000 over five years
- \$25,800 per year
  - \$20,800 PhD Fellow Stipend
  - Teacher Professional Development
  - GLBio Project Manager / Education Consortium

# The Higher Ed Nexus of the Ohio-Israel Partnership



*Academic, Research, &  
Business Development Opportunities*

Howie Beigelman, Executive Director  
Ohio Jewish Communities

Ohio Board of Regents  
September 30, 2015

# Fast Facts: Ohio & Israel

## Ohio

44,825  
Square  
Miles



## Israel

Squar  
e  
Miles



# Fast Facts: Ohio & Israel

## Ohio

Ohio-Israel Agricultural Initiative

MOU between Ohio DSA & Israel

Sister Cities:

## Israel

Partnership2Gether Cities:

Akron/Dayton/Toledo

Youngstown -

Akko/Matte Asher

Columbus-Kfar Saba

Cleveland-Beit

Shean/Valley of

Springs

# Fast Facts: Israel's Economy

#2 Startup Ecosystem in the World, after  
Silicon Valley

Key Industries:

Agriculture

Aerospace

Defense

Pharmaceutical

Medical & High Tech

# Fast Facts: Current Ohio-Israel Academic Cooperation

## Exchanges & Internships

- OIAI
- CCH
- OIAI

## Demonstration Projects

- OIAI-OSU

## Joint Ventures

- Sinclair-Simlat
- CSU-Haifa/Ben Gurion/Tel Aviv
- CWRU

# Where's the Beef?

Red Angus Project

Direct Exports

And also dairy...

# Potential New Arenas

Cybersecurity

Agribusiness

UAV

Startups

Medical & Life  
Sciences

# Other Models

CCI

IAI

Akron

DRITA

REDI-Cincinnati

# Next Steps

Assess best areas of commercial synergy

Areas of increased academic cooperation

Access funding & human capital

# Special Thanks

Consulate General of Israel to the Midatlantic Region  
Ridgeback Business Development  
REDI-Cincinnati  
CRWU  
CSU  
OIAI  
Ohio DSA  
CCH  
DRITA  
IAI  
Sinclair Community College  
Jewish Federation of Cleveland  
Jewish Federation of Cincinnati

# Q&A; Follow Up



[Howieb@ohiojc.org](mailto:Howieb@ohiojc.org)

614.463.1835



Southwestern Ohio Council for Higher Education

# **NOCHE-SOCHE Collaborative Project**

Sean Joseph Creighton  
Bob Manning

**Ohio Board of Regents**  
September 30, 2015



Vision: To ensure Ohioans are educated, employed, and engaged.

- 12 county region of southwest Ohio
- 22 colleges and universities
- 155,000 students
- 21,000 degrees and certificates
- 22 college presidents represented on the Board





# Northeast Ohio Council on Higher Education



*Connecting business and higher education.*

Mission: Our purpose is to significantly increase educational opportunity and attainment leading to post-secondary credentials and employment.

- 23 county region of Northeast Ohio
- 13 colleges and universities
- 226,000 students
- 35,000 degrees and certificates
- 20 business members represented on our Board

## NOCHE-SOCHE Collaborative Project

Since the OBOR challenge to NOCHE/SOCHE to develop a more collaborative working partnership, the following has been accomplished:

- **Series of Planning Conference Calls started July – ongoing**
- **NOCHE-SOCHE Leadership Workshop – 8/4/15**
  - Agenda:
    1. Discussed each organization's mission, programs and structure. Focused on our internship programs.
    2. What can NOCHE and SOCHE collaborate on that results in each organization improving what it currently does and, as a result, increase market penetration in our respective geographies?
- **NOCHE-SOCHE Planning Session – 9/23/15**
  - Agenda: Initial planning and whiteboard session to begin to form the foundation of an “institution to enterprise talent continuum “ that bridges higher education to business and creates a workforce pipeline to secure Ohio's economic future.



## Planning Session - Major Program Elements

Goal: Develop a comprehensive Internship Program by combining the best components of the current NOCHE and SOCHE programs into an integrated end to end solution. A focus on improvement to feature, functionality and process.

- The Major Program Elements:
  - Internship Program - Development and Training
  - Internship Program - Recruitment Process
  - Internship Program - Program Management
  - Internship Program - Program Measurements

Grow Internships



Create Workforce Pipeline

# FRN Pilot Project



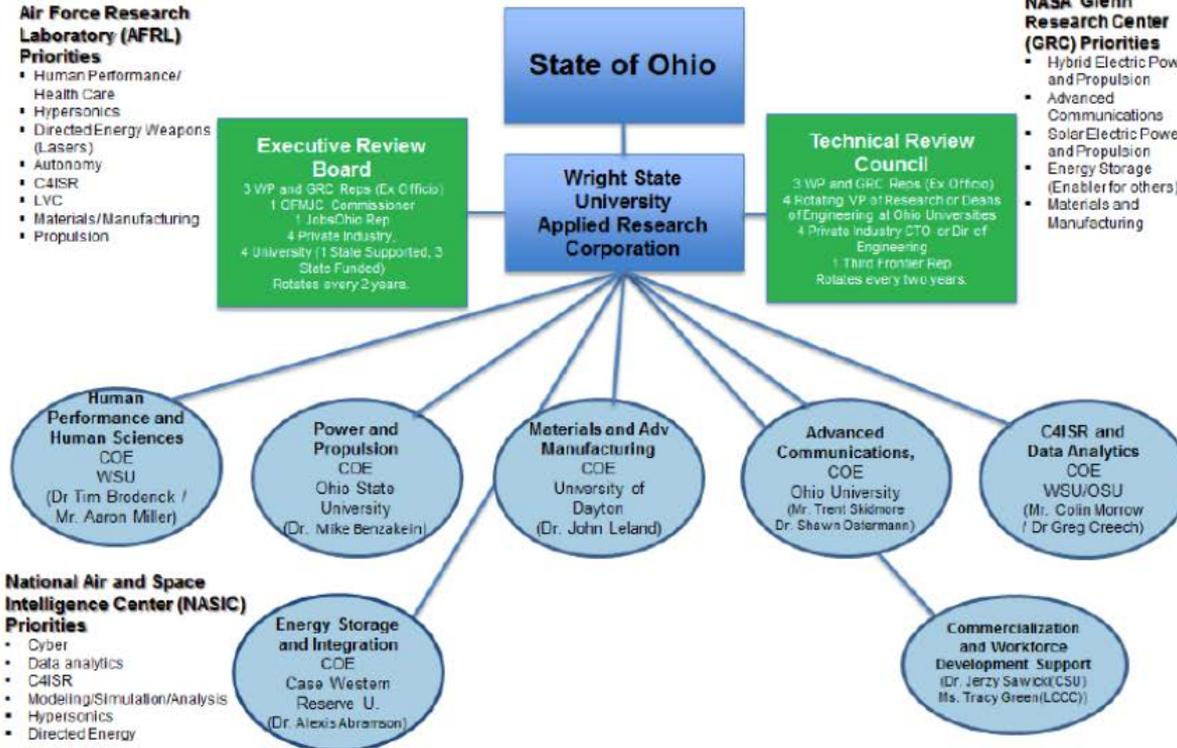
## Construct for Ohio Centric Center of Excellence (COE) Federal Research Network (FRN)

### 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



Northeast Ohio Council on Higher Education



Southwestern Ohio Council for Higher Education

# FRN Pilot Project



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

### Air Force Research Laboratory (AFRL) Priorities

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

### Executive Review Board

- 3 WP and GRC Reps (Ex Officio)
- 1 OFMJC Commissioner
- 1 JobsOhio Rep
- 4 Private Industry
- 4 University (1 State Supported, 3 State Funded)
- Rotates every 2 years.

State of Ohio

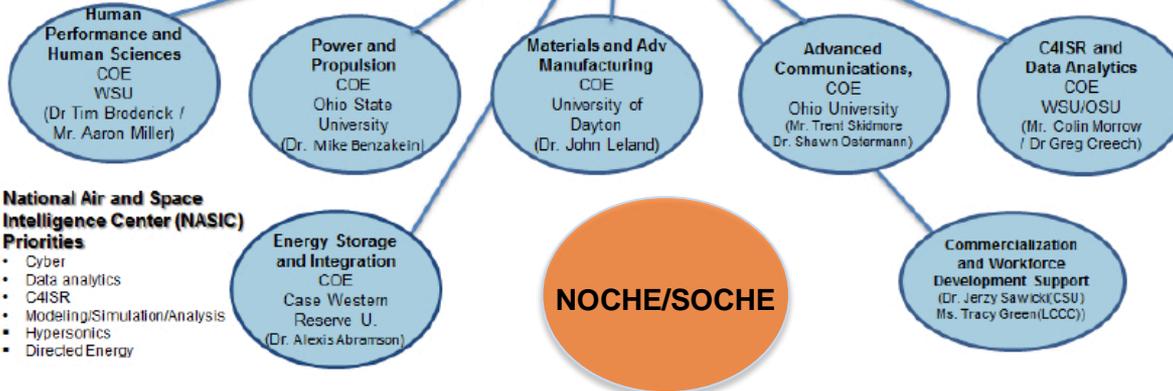
Wright State University Applied Research Corporation

### Technical Review Council

- 3 WP and GRC Reps (Ex Officio)
- 4 Rotating VP of Research or Deans of Engineering at Ohio Universities
- 4 Private Industry CTO or Dir of Engineering
- 1 Third Frontier Rep
- Rotates every two years.

### 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

## Next Steps

- Present to Ohio Board of Regents (Sept )
- Continue program development (Oct)
- Finalize program elements and launch plan (Nov)
- Prepare to work with the FRN in the New Year
- Evaluate program progress and resources (ongoing)



**Thank You!**

Sean and Bob

[www.noche.org](http://www.noche.org)

[www.soche.org](http://www.soche.org)

Attachment #4



# Smoking Initiative Update

# Prevalence of Current Cigarette Smoking Among Adults

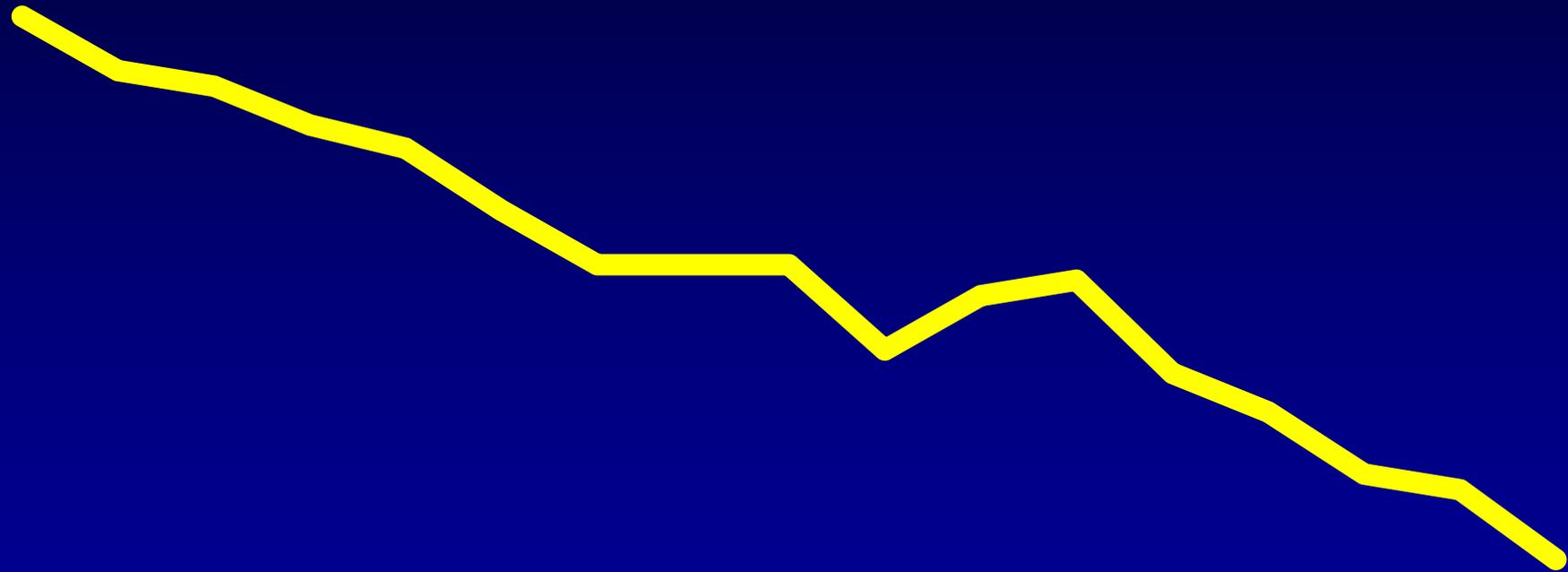
25%

17%

1997

2007

2014



# Prevalence of Tobacco Use – College Students

**20%**

**5%**

**1999**

**2006**

**2015**

**Q1**



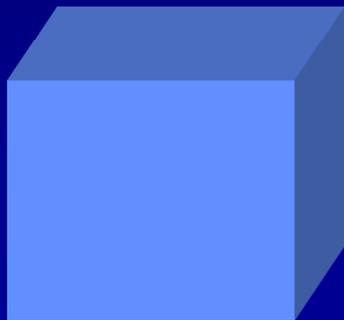
# Prevalence of Cigarette Smoking

- **16% High School Seniors**
- **20% ages 18-26 (2014)**
- **88% started by age 19**
- **37% College students start in college**

# Smoke Free College & Universities

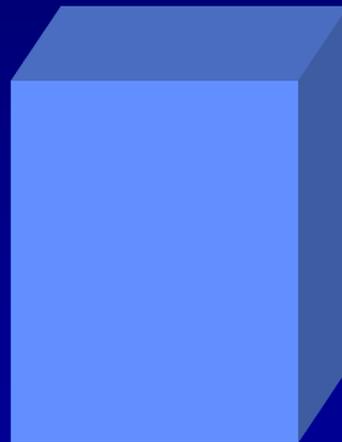
**N = 4,726**

**466**



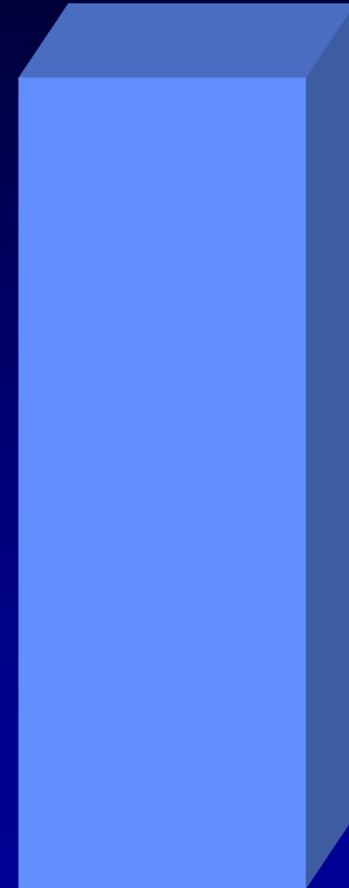
**2011**

**704**



**2012**

**1,577**



**2015**

# Tobacco Free Campuses

- **1,079 Banned all forms**
- **Ohio = 16 in 2016**
- **New York = 192/194**
- **100% smoke free public campuses**
  - **Arkansas**
  - **Iowa**
  - **Oklahoma**

# Smoke Free Campuses Big Ten

- Penn State
- Indiana University
- University of Illinois
- Iowa University
- University of Michigan
- **Ohio State**

# Ohio Community Colleges

**N = 23 with 4 Responded**

- **4/4 Tobacco Free Buildings (2016)**
- **3 Honored**
- **2 Tobacco Free Campus**
- **4 Safety Officer Enforced (2016)**
- **1 Student Enforced**
- **1 Penalties**
- **0 Insurance Incentive**

# Ohio 4 Year Public

**N = 14, 14 Responded**

- **14/14 Tobacco Free Buildings**
- **11 Honored**
- **9 Tobacco Free Campus (2016)**
- **6 Safety Officer Enforced**
- **0 Student Enforced**
- **0 Penalties Enforced (4 Have Policies)**
- **0 Insurance Incentive**

# Ohio 4 Year Private

**N = 50; 10 Sampled, 9 Responded**

- **9/9 Tobacco Free Buildings**
- **8 Honored**
- **7 Tobacco Free Campus**
- **5 Safety Officer Enforced**
- **3 Student Enforced**
- **6 Penalties**
- **1 Insurance Incentive**



**Cleveland Clinic**

**Every life deserves world class care.**