



State of the College Address

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Last year I began the State of the College address with a historical view of who we are and what we are about. I talked about the values that we hold precious as a professional family, the caring, the compassion, and the concerns that we show and express everyday to ensure that our students succeed in their academic and life endeavors.

I also posed two questions and answered them. “Do we have challenges and problems ahead of us to overcome? Yes. Can we work together as one team to address our problems? Yes, we can and we will. Let there be no question about that.”

With that promise, we rolled up our sleeves and began to work as one team and initiated a total of 40 new programs from proposals for new academic degrees and tracks to mentoring and tutoring programs, new recruitment plans, accelerated BS/MS programs, new scholarships, new partnerships, renovation of our physical space including a major new roof construction plan, a new co-op facility, a visiting scholars program, more efficient office procedures, an almost complete management reorganization, development of a Business Continuity Plan, cost cutting measures and five new awards for outstanding faculty and staff, who in variety of ways try to ensure that our students succeed. We also made a commitment to fully support and work with the faculty to restructure our Engineering Technology program.

Today, I stand before you to present an assessment of the degree to which we have succeeded.

During this past year, for two consecutive terms, our enrollment in terms of the actual number of students increased in the fall semester and was by far the highest percentage gain among all CSU colleges, and then again, it increased in spring semester¹.

Our student credit hour (SCH) generation also increased in the fall and was the second highest percentage gain among all CSU colleges and also this metric increased in the spring².

The number of research proposals submitted by our faculty increased³ and the actual number of proposals funded was doubled (46% versus 23%)⁴. We also doubled the dollar amount of our grant funding⁵.

We experienced a substantial increase in the dollar amount of pledges that we received from our supporters (an increase of 68%)⁶, decreased the number of part-time faculty and significantly reduced expenses without affecting the academic programs⁷. In fact, we increased the operating budget of the academic programs in terms of Graduate Assistantships and Tuition Grants as well as College Technology Fee.

We established a flat organizational structure to respond quickly to internal and external demands and met all the internal and external deadlines and in most cases processed the paperwork and electronic communications that reached us within one or two days.

Further, we spent many hours working with and supporting five internal and external committees, accreditation organizations and task force groups to plan for our future in addition to conducting our routine tasks.

To be sure, much work is yet to be done, but what has been done, thus far, makes for an impressive beginning.

In going forward and as we plan for our future, we must remind ourselves of our obligations to the region that we serve and to this great State of Ohio. Colleges and universities can be a source of economic development and vitality for a region and can play a pivotal role in developing and retaining the needed talent.

¹ As of October 23, 2007 and January 9, 2008, Institutional Research data.

² As of October 23, 2007 and January 9, 2008. Institutional Research data.

³ For the first nine months of 2007 (last set of data calculated).

⁴ For the period of January 1, 2007 to August 31, 2007 (46% vs. 23%).

⁵ For the period of January 1, 2007 to August 31, 2007 (last set of data calculated).

⁶ For the period of 7/1/07 to 11/30/2007 vs. 7/1/06 to 12/31/2006 – increased by 68% (last data available – CSU Foundation data).

⁷ From FY 07 (as of August 1, 2007) vs. FY 06 - Budget Model Calculation as provided by the Budget Office.

We are indeed located in a very special region. In 1788, John Henry James described Ohio as “That portion of the United States situated between Pennsylvania, the rivers Ohio and Scioto and Lake Erie”. From the time of that early description to now, Ohio’s geography has played a fundamental role in attracting commerce as 60% of all U.S. and Canadian households lie within 600 miles of the state⁸. Ohio companies export products to 205 countries. According to Manufacturers’ News, Inc. (MNI), Ohio ranks as the 3rd largest industrial state behind California and Texas and is home to 21,634 manufacturing companies⁹.

Today, Ohio ranks second in the U.S. in the production of vehicles with its \$16 billion a year auto industry, and is ranked first in the nation in the number of tier-one suppliers with about 1.8 million light vehicles produced each year¹⁰. Ohio ranks second in the nation in the manufacturing of aircraft engine and engine parts and among the top ten (6th) in the aerospace products and parts manufacturing industry.

The state’s gross domestic product in 2005 was \$441 billion, which made Ohio the seventh largest state economy¹¹. Ohio has more Fortune 500 companies than any other state, with the exception of California, New York, and Texas.

Tonnage shipped on the Ohio exceeds that which passes through the Panama Canal¹². Ohio has more railroad track per square mile than any other state and more interstate mileage than any neighboring state and holds the top spot in production of rubber and plastics, auto components, trucks, steel, industrial machinery and more than 100 other industrial products.

Yet, Ohio lost 32,337 manufacturing jobs and 93 plants over a 12 month period¹³ in 2005. In fact, since 2001, Ohio has lost over 840 plants. In June 2007, the seasonally adjusted rate of unemployment was 5.7% compared to the national rate of 4.5%¹⁴. Ohio’s per capita income of \$32,478 in 2005 was ranked 27th among the fifty states¹⁵.

⁸ Ohio Department of Development, *Ohio’s Economy*, Prepared by the Office of Strategic Research, June 2007.

⁹ eMvoy, *Ohio Lt. Governor Accepts Top Manufacturing Award – Ohio Earns Top U.S. Ranking for Manufacturing Competitiveness*, Nov. 29, 2006, www.emvoy.com/news/

¹⁰ Trade and Industry Development, *Ohio’s Manufacturing Heritage*, www.tradeandindustrydev.com, 2007.

¹¹ Ohio Department of Development, *Ohio’s Economy*, Prepared by the Office of Strategic Research, June 2007.

¹² Linda Liston, *Ohio: America’s Crossroads*, Site Selection Magazine, Aug/Sept 1997, <http://www.conway.com/oh/9708/>

¹³ Manufacturers’ News, Inc., *Industrial Guide Reports Ohio Manufacturing Jobs Down 32,337; Plants Down 93*, www.manufacturersnews.com, January 24, 2006.

¹⁴ Ohio Department of Development, *Ohio’s Economy*, Prepared by the Office of Strategic Research, June 2007.

¹⁵ U.S. Department of Commerce, Bureau of Economic Analysis, Survey of Current Business, *Per Capita Personal Income by State*, www.bea.doc.gov/bea/regional/spi/.

Specifically, the cities of Cleveland, Cincinnati, Columbus, Akron, and Dayton, according to MNI data, have experienced brutal losses in form of plant closings. Over a 5-year period of 2001 to 2005, Cleveland lost 220 plants.

While the analysis of the Ohio's economy and its performance encompasses many factors, it can be said that one increasingly important determining factor is the education of its workforce. The global economy requires a highly educated and flexible workforce that is able to train and when necessary retrain in order to respond to market demands and produce, on a mass-production scale, customized products and services tailored to the specific needs of individual customers.

Allow me to share an example with you to illustrate how the way we do business is changing rapidly. Today, in certain clothing store locations, you can enter a cubicle where you are scanned for size. The data is stored under your name and address and once this data is stored, no matter where you live, you can go on-line and order your favorite style shirt or trousers. Your order goes directly to the factory floor where a worker cuts the material to your specifications and ships it to you, and to presumably millions of others who place similar orders - customized to each individual's needs. Produced on a mass-production scale, yet customized to the specific needs of individual customers - each product made-to-order and pre-sold. Bypassing the store shelves where the un-customized, one-size-fits-all products collect dust in expensive to operate show rooms without a guarantee of sale.

Therefore, today's workers must be adaptable to these new technologies and the key to all this demanded flexibility is education and lifetime learning. One's education no longer ends with a college degree or even a terminal degree. It is a continuum that should extend throughout one's life.

Unfortunately, compared to the other states, fewer Ohioans pursue higher education after high school. Consequently, the median income for Ohioans is lower than many other states. Not surprisingly, Ohio's home ownership rate is lower than in nearby states¹⁶.

To determine how Ohio is fairing in its transition to a new economy, one can examine the State New Economy Index which ranks the states on five factors¹⁷:

Knowledge Jobs, Globalization, Economic Dynamism, the Digital Economy and Innovation Capacity. Unfortunately, Ohio ranks very low in most categories of the Index. Overall, among the 50 states, Ohio ranks 33rd.

Similarly, the Metropolitan New Economy Index shows that Ohio's large urban areas fall at or below the state's ranking. That index compared and ranked 50 large metropolitan areas in the U.S. Cleveland ranked 33, Cincinnati 34, Columbus 36, and Dayton ranked

¹⁶ Edward J Malecki and Hazel A. Morrow-Jones, "Ohio: A Profile", Shawnee State Park, September 6, 2001, OSU Center for Urban and Regional Analysis.

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42. Some other comparable cities in the Midwest outperformed Ohio's four large cities, e.g. Detroit was ranked 28.

A more recent, 2007 study, shows that Ohio's ranking has improved. Ohio made improvements in certain areas, "But it ranked poorly in other areas, such as workforce education (No. 39) venture capital availability (No. 35) and online population (No. 30)."

The largest metropolitan area in the state is the Cleveland-Akron-Elyria area with over 2.9 million people. While we attract faculty and graduate students nationally and internationally, the majority of our undergraduate engineering students come from this region. It is then essential that we realign our curriculum to meet the needs of the region and to educate and graduate talented engineers that could immediately begin to contribute to the region's economy.

The delivery of engineering education is expensive when compared to many other higher education disciplines. Yet, we must prioritize the needs of the region and the role that we can play, albeit at a cost, to address those needs.

Fortunately, the message is heard and Science, Technology, Engineering and Math (STEM) disciplines are beginning to get the attention that they deserve.

As the area's engineering educators, we must work closely with our colleagues in local industry to learn about their specific needs and challenges that they face. We must interface frequently with fellow engineers working in research centers, engineering professional organizations and entrepreneurship centers and business incubators to create a Cleveland center of gravity, be it virtual or a physical place, for all engineering related activities in this region - bringing researchers, educators, engineering practitioners, entrepreneurs, students and business men and women together to create an atmosphere conducive to innovation and critical thinking. A center for engineering professionals in northeast Ohio that would motivate the young to consider engineering as a prospective career and the old to share a lifetime of precious experiences. We must create an atmosphere that would encourage technological innovation, brainstorming, critical thinking and new ideas.

This year, we are celebrating the 85th anniversary of the formation of the Fenn College of Engineering. In doing so, not only we take pride in the College's history and past accomplishments, but also in its present state. The recent accomplishments of the faculty, staff and students of Fenn College are nothing short of incredible. Allow me to share some examples with you with a caveat that except for our students and alumni, I will refrain from naming individual colleagues as we strive to be one team – one Fenn family:

- ✓ A partnership led by the faculty of Fenn College of Engineering has been awarded \$23.8 million from the State of Ohio's Third Frontier Program which established a Wright Center at Cleveland State University. Our Fenn colleagues are presently hard at work with a plan to construct a 7 million dollar Clean Room packaging facility.

- ✓ Fenn Academy program is a collaborative effort to attract high school students into various fields of engineering. Fenn Academy is a consortium among Fenn and thirty-three local high schools and several major corporations. The Fenn Academy supports students with technical, and when needed, financial support including scholarships and has received numerous local and national recognitions and is recommended as a model for others. Dr. Dave Patten, Director of the Center for Public Policy & Administration at the University of Utah writes in an article entitled Attracting the Best and Brightest: “The Fenn academy concept could be duplicated for students interested in a wide variety of professions including teaching, public service, business, physical science, and trade professions.” In a Plain Dealer article: “Creating a path for future engineers”, Angela Townsend wrote how a 14-year old Lakewood High School freshman who did not think about engineering as a career decided to stay in Lakewood High’s engineering technology curriculum after meeting a representative from Fenn Academy.
- ✓ Our Cooperative Education Program, one of the oldest co-op programs in existence, since 1923, enables students to alternate academic terms with full-time, paid, on-the-job assignments in fields related to their majors.
- ✓ Fenn College is the first link in the United States for the Order of the Engineer and Steel Ring Award
- ✓ Fenn College of Engineering is home to the University Transportation Center. The \$2 million in funding that has been provided by the Department of Transportation is used to focus research on highway work zone safety.
- ✓ The Donald Bently and Agnes Muszynska Endowed Chair in Rotating Machinery was created with a \$1 million gift and was awarded to one of our Mechanical Engineering professors.
- ✓ An innovative design to harvest wind energy developed by one of our colleagues just received \$1.1 million dollar funding from the Department of Energy.
- ✓ Two Fenn College faculty members have established the Center for Modeling Integrated Metabolic Systems (MIMS) under the sponsorship of the National Institutes of Health (NIH) in collaboration with Case Western Reserve University and University Hospitals. The research at Fenn College combines mathematical modeling and computer simulation to quantify relationships between cellular metabolism and physiological responses of tissue-organ systems.
- ✓ PPG Industries awarded \$5.8 million in patents to Cleveland State University. PPG and CSU's collaboration in engineering technology afford unique research and learning opportunities for our faculty and students.

- ✓ In her senior year in high school, Aimee McConnell was accepted by one of the world's top engineering schools; it was through Fenn Academy that she learned about CSU's Fenn College of Engineering. She visited the College and learned about our programs and the practical and applied engineering approach that she always desired. She chose Fenn as the College of her choice. She is now an Honors Program sophomore in our Electrical and Computer Engineering department.
- ✓ Donald Washkewicz, Chairman of the Board and Chief Executive Officer of Parker Hannifin Corporation, continues his enthusiastic support for the Fenn College of Engineering. Mr. Washkewicz who received his BS in Mechanical Engineering from CSU's Fenn College in 1972, has been a generous supporter of both CSU and Fenn College, providing \$4 million in corporate support for engineering scholarships and new campus building projects. Speaking proudly of his support for Fenn, Mr. Washkewicz said, "Fenn College was the engineering school of choice for my family. My father, uncle, brother and I all attended Fenn and went on to become Licensed Professional Engineers in the state of Ohio. I found CSU's Fenn College of Engineering to be a challenging and first-rate school which prepared me for industry - - not only by the curriculum offered, but most importantly, by teaching me how to use deductive logic in solving problems. Seldom has a day passed that I don't draw on the problem-solving ability I developed at the Fenn College of Engineering."
- ✓ One of our Assistant Professors in the department of Electrical & Computer Engineering, received the National Science Foundation's CAREER Award. This nationally very competitive award provides \$450,000.00 to support an integrated research and educational program. Given to young, promising university faculty, the NSF offers this description of the award: "The Faculty Early Career Development Program is a Foundation-wide activity that offers the National Science Foundation's most prestigious awards in support of the early career-development activities...."
- ✓ Many senior faculty colleagues have illustrated a sustained record over the years of receiving external grant funding for their research projects. One of our faculty colleagues has received over five million dollars in funding over the past ten years for his Materials research. Others have received sustained funding in the areas of Instrumentation, Rotating Machinery, Power Beaming, Stirling Engine, Fuel Cell, Adsorption, Biomedical Research, Transportation, Environmental Studies and Controls.
- ✓ In recent years, Fenn College faculty have chaired numerous conference sessions, were invited as speakers and Keynote Speakers in national and international conferences and were invited to do sabbatical studies in major universities overseas and have received support to conduct their studies in Nepal, Russia and Argentina as Fulbright Fellows.

- ✓ Several of our faculty members are Fellows of their professional societies and others have been invited by the Accreditation Board for Engineering and Technology (ABET) to review and accredit other engineering programs. Several others have become editors of prestigious international journals including the Editor-in-Chief of the International Journal of Fluid Mechanics Research.
- ✓ Within the university, 10% of Fenn College faculty have received CSU's Distinguished Faculty Teaching, Research and Service Awards and 14% of our staff members have been honored with CSU's Distinguished Staff Awards.
- ✓ Our students have received regional and national awards. Just recently, two Fenn College students received the university's 2007 Cooperative Education Award and three students won the 2007 Vision Entrepreneurship Competition.
- ✓ Over the years, Fenn College has assembled a group of talented faculty. Close to 70% (67% to be exact) of our faculty have graduated from the top 50 engineering schools in the nation, and of those, 63% are graduates of the top 26 engineering schools in the United States as rated by US News and World Report¹⁸ - ranging from MIT and Princeton to Carnegie Mellon, Purdue, Texas A&M, Georgia Tech, Virginia Tech, Ohio State, Case Western Reserve, University of Michigan, Michigan State, Penn State, University of Illinois at Urbana, University of Southern California, The Johns Hopkins University, Syracuse University, University of Florida, Arizona State and University of Wisconsin among others.
- ✓ During a three-year period that we have collected the data, Fenn College faculty members have authored 19 books¹⁹, 22 book chapters, 113 refereed journal articles in prestigious national and international journals and 202 refereed papers in conference proceedings - in all, **356** publications over a three-year period. They also presented over 40 invited lectures and seminars and applied for 6 US and international patents.
- ✓ As of April 2007, the college had 85 active grants for a total amount, awarded during the time-duration of the award, of over 17 million dollars (**\$17,775,690**), not including the \$23.8 million dollar Wright Center award (over forty million dollars when including the Wright Center award).
- ✓ Our faculty members have worked with major corporations and have received grants from such organizations as the National Institute of Health (NIH), NASA, Department of Energy (DOE), the Economic Development Administration (EDA), Boeing, the National Science Foundation (NSF), the Department of Transportation (DOT), Rockwell Automation, P&G, Energizer, Bendix, Nordson, General Electric, Cleveland Clinic Foundation, Parker Hannifin Corporation and Northrop Grumman among others.

¹⁸ Schools as rated by US News and World Report.

¹⁹ FAR reports 2004 to 2006

- ✓ Fenn students are able to gain invaluable experience with local industry, NASA-Glenn, and the Lerner Research Institute at the world renowned Cleveland Clinic Foundation. 32 of our doctoral Applied Biomedical Engineering students work closely with our adjunct faculty colleagues at the Cleveland Clinic Foundation.
- ✓ Our graduates have gone on to distinguished careers as faculty members in universities such as UCLA, scholars and Branch Chiefs at institutions such as NASA, business leaders, and practitioners. Many have become CEOs, presidents and high-level executives at large corporations such as Parker Hannifin Corporation, Osborne Corporation and Middough Corporation.

Finally, this year, our Visiting Scholar program has been very successful. We have hosted seven outstanding scholars who have come to us from Carnegie Mellon University and internationally from Myong Ji University and Dankook University in South Korea, Fujian University and Shanghai Polytechnic University in China, Federal University of Sao Carlos in Brazil and JNTU in India. In most cases, these scholars are supported by their universities or governments to spend time with Fenn College research faculty. This speaks highly of the outstanding national and international reputation of our faculty colleagues.

My allotted time, which I am certain by now I have exceeded, does not allow me to continue and name more accomplishments of this talented team that comprises the Fenn College of Engineering.

I imagine that you can sense the pride that I, and every member of this fabulous team, takes in these achievements. Yet, as a team, we are a realistic bunch and we are not new to this business. We know that there is always room for improvement and we must work hard, not only to maintain our present standards of excellence, but to excel to a higher echelon in a rapidly changing world that demands up-to-date knowledge from every worker, but particularly the knowledge workers, the professors, who in turn educate others. That remains to be our goal.

So today, in this occasion, it is with pride and sincerity that I thank the faculty, staff and students of Fenn College who accomplished in a short time what seemed unachievable only 12 months ago. My thanks and appreciation goes beyond the Fenn College family and extends to all of our friends and supporters both inside and outside the university including the top university administrators, fellow college deans, our Visiting Committee members and Fenn Academy Board members. Thank you. I am very grateful for your support and count on your continued support of Fenn College.

I wish to thank all of you - friends of Fenn College - for attending this event and for your support. Thank you.

