

College of Engineering Strategic Plan

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Letter from the Dean

It is with the goal of becoming one of the nation's top-10 public engineering schools for undergraduate and graduate study, that the College of Engineering has established the goals, objectives, strategies and initiatives highlighted below. To accomplish this goal the College must overcome the following challenges. 1) Significant competition for the best students, faculty, and staff. 2) A global and interdisciplinary environment that has stretched the current boundaries for engineering education. 3) A rapidly changing research funding landscape with higher requirements from industry and government. 4) An unwritten responsibility to be the economic driver for the state and nation. 5) The fiscal and leadership realities of managing a large comprehensive university where the college must meet its fiscal needs in competition with other successful units. A comprehensive strategic plan that mirrors the university's plan has been developed to address these issues.

One University

We will align the administrative structure of units within the College to achieve the vision and goals of the University and College of Engineering Strategic Plan. ***Towards this end we will optimize and strengthen the College by reducing the number of departments/schools from 11 to 9.*** This will be accomplished through merger, realignment, and targeted investment in key programs to improve quality. We will also pursue additional alignment of our units and facilities with other colleges. Finally, we will establish two new buildings and will enhance the engineering campus through the establishment of the technology neighborhood.

Students First

We will recruit and develop the most competitively distinct students in the country with a focused effort on ***experiential learning***. This conceptual framework will help our engineers, architects and planners to augment their classroom education with learning by doing, and will be supported by outstanding services to prepare our students for professional practice. We will also establish partnerships with key institutions nationally to help our students become more diverse and to give them diverse global experiences. ***These include the establishment of our Global Studies Office and our Masters of Global Engineering Leadership (w/FCOB). We will also continue to expand key programs like the (Ohio Innovation Initiative) focused on linking industry to students and our Tony Wells Social Innovation Initiative focused on developing the next generation socially responsible products.***

Faculty, Staff Talent and Culture

We will continue to recruit the most talented and diverse faculty possible by focusing hiring on key strategic areas related to global grand challenges. We will maintain a ratio of at least 25% women and at least 10% URM in our hiring practices while simultaneously improving quality and retention. ***We will continue to grow a diverse faculty by expanding***

one of the most innovative pipeline programs in the country that is now producing about 5% of the Underrepresented Minority Ph.D.s in key engineering disciplines per year.

Research Prominence

We will establish major multidisciplinary and interdisciplinary research Centers aligned with College's key research focus areas. These focus areas are aligned with global grand challenges to ensure future funding success for the foreseeable future. *This includes working with Battelle, EWI, and state and federal government to establish a national center that will serve industry at the interface of manufacturing and energy.* We will expand our Industrial Liaison Office to further impact economic development *utilizing CoE assets on main and west campus to build strategic "Co-Branded" facilities with industry in the areas of energy, transportation, manufacturing, materials and electromagnetics and sensing.* We will revamp our commercialization and IP procedures to make the evaluation of faculty and staff ideas and the establishment of start-ups much easier.

Outreach and Collaboration

By establishing experiential learning as a conceptual framework for enhancing the education of our students, we will reach out to industry through interdisciplinary capstones efforts in areas like energy, materials and design. By focusing faculty recruiting and research center development in areas aligned with global grand challenges, *we will make possible strategic partnerships aligned with the state's and regional's targeted industry and economic development areas.*

Operating & Financial Soundness & Simplicity

We will meet our objectives above while continuing to operate the college in a fiscally sound manner. This will include the diversification of funds bolstered by an enhanced development effort. *Our fiscal plan and directives will conservatively generate an average of \$2.16M in new continuing funds per year towards the establishment of funds for start-up, new initiatives, and additional reserves that will provide a buffer against most economic shortcomings.* Finally, we will continue to streamline our internal processes through the enhancement of our business operations center.

The plan is ambitious, but achievable. We are excited about implementing it!

Introduction to the Strategic Plan

This document charts a course for pre-eminence of the College of Engineering. It results from an adaptation of our current performance plan which was created through a process that was led by the Dean and included members of the College's executive committee (including all department chairs and some center directors) as well as faculty across the College. Faculty and some administrative leaders from across the College also served on a "performance plan acceleration task force" that, from the context of our plan and the results of the doctoral program reviews, recommended many of the directions embodied in the current strategies and initiatives. This particular document was created by a process where the Associate Deans, Senior Assistant Dean, and the Director of Advancement took the strategies and initiatives from the College's 2009 performance plan update and refined and mapped them into elements of the University's strategic plan.

Mission

The College of Engineering and the Knowlton School of Architecture will:

- Foster a learning culture that prepares our students to be key contributors to society
- Provide new knowledge that can be assimilated by our customers and partners
- Create and disseminate new ideas and concepts that expand our understanding of science and engineering
- Be an innovative leader in engineering education
- Be a prime resource for Ohio economic development
- Provide life-long learning for engineers and architects
- Promote and support the purposes of the entire university

Vision

We will achieve world-class stature as a college of engineering through our excellence and impact in education, research and outreach. We will be nationally recognized as the pre-eminent college of engineering in achieving our land grant mission – ensuring Ohio’s global competitiveness and future prosperity.

Values

We value:

- Excellence in all we do
- Our relationship with our constituents (e.g., students, government, corporate partners and sponsors)
- The societal and economic impact of our professional contribution
- Teaching of principles and fundamentals
- The importance of life-long learning
- A diverse faculty, staff and student body
- Ethics and integrity
- A broad-based education

- Innovation, knowledge creation and scholarship
- Collegiality
- A culture that treats change as an opportunity

We believe:

- Education is the key to upward economic mobility
- Technology and creativity are vital ingredients for our national standard of living
- Continuous improvement is essential to become more competitive
- A diverse workforce will produce superior results
- Elimination of bureaucracy enables excellence and competitiveness

Context

To achieve its goal of becoming one of the nation's top-tier, public engineering schools for undergraduate and graduate study, the college must adapt to a number of changing dimensions that define the landscape in which we current exist.

- **Global Commoditization of the Engineering Degree:** According to the United Nations Educational, Scientific and Cultural Organization (UNESCO), more students will graduate from institutions of higher learning globally than since the beginning of time. More than 30% of these students will graduate in engineering and engineering technology.
- **Declining US interest in the field of engineering:** Declining Interest in the field, especially among growing populations (African-Americans and Hispanics). –Fewer than 15% of US High School Graduates have the proper background
- **Focus on Global Grand Challenges:** There are fourteen Grand Challenges (Energy, Infrastructure, Environment, etc) that will dominate the engineering landscape for the foreseeable future.
- **Economic Turmoil:** The country is still in the midst of the most difficult recession since the great depression. Since engineering is directly dependent on industry for its graduates, this has a broad impact on engineering education.
- **Interdisciplinary Research:** Solutions to many of the grand challenges in engineering lie at the interfaces of disciplines.
- **Engineering Education as a disciplinary focus:** There are chronic industry complaints about skill deficiencies in US students versus global competition
- **Significant Internal Competition for limited resources:** The College of Engineering must compete for internal resources to upgrade and maintain its facilities. It has not done well traditionally in these areas.

To our credit the college has made significant progress since the beginning of our current strategic plan. In particular the last two years has seen significant achievements in a number of areas.

- The college's US News & World Report rankings have improved four additional positions to 25 (13th Public) and for the first time in our history

all of our departments are ranked.

- We have eliminated our permanent budget deficit and we are having another outstanding budget year and we have had our best two years from a development perspective in our history.
- We have had the largest two freshmen classes in our history while simultaneously increasing quality (29 ACT, is now third best in the Big 10) and diversity (21% women and 7% Underrepresented respectively)
- Our Total research awards of \$128M are the largest in our history with the Industrial awards over \$57M. We now have more Industry University Collaborative Research Centers (IUCRCs), sponsored by the National Science Foundation (NSF), than any university in the country.
- We continue to develop novel programming for our students with the initiation of the Ohio Innovation initiative, The Tony Wells Social Innovation Initiative, Honda/OSU Mobility Innovation Exchange, The Solar Decathlon, and more than 10 other initiatives.

The current plan builds on these exciting achievements with new initiatives and new programming aimed at catapulting the college into the top 10 public institutions.

Goals, Objectives, Strategies, Initiatives

Goal 1. One University – We will adopt a ‘One University’ perspective in all decision making to create a culture where everyone is driven by a shared common vision and supports trans-institutional execution.

1.1 Lead transformation to achieve “One University”

1.1.A Use targeted marketing and a message focused on excellence to elevate the visibility and reputation of the College. (Owner: Alissa Comella)

Primary University strategy cross-reference: 1.1.1

Secondary University cross reference: 6.1.1

Strategy description: Conduct stakeholder analysis and identify areas of improvement needed to elevate visibility and reputation of College.

1.1.A.1 Develop and execute College-level integrated marketing plan to elevate brand image and awareness with internal and external stakeholders. (Owner: Alissa Comella)

Primary University cross-reference: 1.1.1.3

Secondary University cross reference: 6.1.1.1

Metrics: Conduct baseline stakeholder analysis and repeat survey/focus groups annually to measure effectiveness in improving attitudes/awareness of College accomplishments and priorities. Conduct benchmarking analysis of other institutions to determine optimal staff size.

Milestones: Comprehensive stakeholder baseline analysis conducted by September 1, 2011, with progress surveys conducted annually in future years.

Resources: Up to \$150K in new PBA for up to two additional communications staff members; increase communications budget to reflect current spending trends; and \$100,000 in new

resources to conduct surveys and focus groups, and implement strategic marketing plan including additional print and web-based initiatives.

Initiative description: Conduct baseline stakeholder analysis through surveys and focus groups, identify areas of improvement/new opportunities through all media sources, and develop/implement integrated marketing plan.

Description of support outside primary objective: Successful marketing of our brand will assist fund raising efforts.

1.2 Optimize the organizational structure for pursuit of common goals

1.2.A Align the administrative structure of units within the College to achieve the vision and goals of the College of Engineering Strategic Plan. (Owner: Greg Washington)

Primary University strategy cross-reference: 1.2.1

Secondary University cross-reference: 6.2.1

Strategy description: Identify units whose administrative alignment is not best suited to the current interests of the college and its faculty, and make changes as appropriate.

1.2.A.1 Integrate Welding Engineering programs and faculty into Materials Science and Engineering Department (Owner: Rudy Buchheit)

Primary University cross-reference: 1.2.1

Secondary University cross-reference: 6.2.1.1

Metrics: Accounting integration, usage of MSE IT resources by welding students

Milestones: All accounts moved to MSE (May 2010)

Resources: \$225K PBA plus \$500K cash for faculty hiring; other resources involve realignment of existing MSE and ISE resources.

Initiative description: Transfer welding engineering faculty and the welding engineering academic program administration from the Integrated Systems Engineering Department to the Materials Science and Engineering Department.

Description of support outside primary objective: A college-wide review process identified this area as one for which a change in administrative location would align better with the interests of its faculty and that would enhance the doctoral work in welding engineering as the focus of welding engineering nationally has reverted to what happens to materials during the welding process at the microscale level. The increased affinity is expected to enhance the effectiveness of administrative processes involving welding engineering.

1.2.A.2 Merge Aerospace Engineering and Mechanical Engineering Departments (Owners: Mike Benzakein and Cheena Srinivasan)

Primary University cross-reference: 1.2.1

Secondary University cross-reference: 6.2.1.1

Metrics: Approval body actions

Milestones: CAA approval, University Senate approval, Board of Trustees approval (July 2010)

Resources: \$270K for remodeling; other resources involve realignment of existing AER and MEC resources.

Initiative description: Create a Department of Mechanical and Aerospace Engineering to replace the two existing departments of Aerospace Engineering and Mechanical Engineering. Co-locate faculty and students from the two departments so that they are physically inter-connected as a result of the merger.

Description of support outside primary objective: A college-wide review process identified this area as one for which a change in administrative location would align better with the interests of its faculty and that would strengthen the aerospace engineering graduate

program. Administration would be simplified by having one less academic department.

1.2.A.3 Create Center for Aviation Studies and integrate programs and faculty from Aviation Department into it (Owners: Nawal Taneja and Seth Young)

Primary University cross-reference: 1.2.1

Secondary University cross-reference: 4.1.1.1, 6.2.1.2

Metrics: Approval body actions

Milestones: CCAA approval, College Faculty approval, CAA approval, University Senate approval, Board of Trustees approval (November 2010)

Resources: \$50K for CAS startup; other resources are realignment of existing AVN resources.

Initiative description: Create an academic center that will be the focal point for aviation programmatic activity at OSU and will integrate effectively with the OSU Airport. This will result in the elimination of the Department of Aviation.

Description of support outside primary objective: The Center for Aviation Studies will be the focal point for research in aviation at OSU. The elimination of an academic department and closer integration with OSU Airport will achieve some administrative savings.

1.2.A.4 Investigate a possible Biomedical Engineering department administered jointly by the College of Engineering and the College of Medicine (Owners: Rich Hart)

Primary University cross-reference: 1.2.1

Secondary University cross-reference: 4.1.1, 6.2.1.2

Metrics: Approval body actions

Milestones: Feasibility decision by fall 2010; if feasible, CCAA approval, College Faculty approval, CAA approval, University Senate approval, Board of Trustees approval (end of FY11)

Resources: TBD for faculty realignment and positions.

Initiative description: Explore options leading to the creation of a new academic entity that will be the focal point for Biomedical Engineering activity at OSU. The resulting entity will leverage existing relations between the College of Medicine and the College of Engineering.

Description of support outside primary objective: Such a joint unit will enhance the research strength of this interdisciplinary domain and reap economies of scale in the use of administrative support and facilities.

1.3 Integrate strategic, financial, and physical planning to ensure a campus environment that enables the university's mission

1.3.A Modernize physical facilities to achieve the vision of the College of Engineering Strategic Plan (Owners: Greg Washington and Stu Zweben)

Primary University strategy cross-reference: 1.3.1

Secondary University cross-reference: 2.3.3, 4.1.1

Strategy description: Remodel existing facilities and create new facilities that will improve our ability to support 21st century engineering research and education programs, particularly those in areas of strategic importance to the College of Engineering.

1.3.A.1 Design and implement the new Koffolt Lab building (Owners: Stuart Cooper and Chris Mulholand)

Primary University cross-reference: 1.3.1.1

Secondary University cross-reference: 2.3.3.1

Metrics: Project on schedule and budget

Milestones: Design FY11, Occupancy FY14

Resources: \$17.5M (CoE share of \$126M total cost)

Initiative description: Build a new building to house the CBE Department, including its administration, faculty, staff and laboratories, and including graduate associate and classroom space. The building also will serve needs of the Chemistry Department and the two units will share appropriate components of the building. Raise the necessary resources for the project.

Description of support outside primary objective: The new facility will be much better able to provide for an effective teaching and learning environment for CBE students and faculty.

1.3.A.2 Expand the ElectroScience Laboratory (Owners: John Volakis and Chris Mulholand)

Primary University cross-reference: 1.3.1.1

Secondary University cross-reference: 4.1.1 and 4.3.1.3

Metrics: Project on schedule and budget

Milestones: Occupancy January 2011

Resources: \$6.6 million (CoE share of \$7.3M total cost)

Initiative description: Build an additional facility in which to house ESL personnel and research laboratories, thereby enabling increased competitiveness on government sponsored research grants and increased collaboration with industry and other areas within OSU. Raise the necessary resources for the project.

Description of support outside primary objective: The new facility will promote the further development of an already internationally renowned organization, and by providing laboratory capabilities for key industry within its confines, the building will enhance the ability of ESL research to lead to commercially viable products.

1.3.A.3 Finalize and initiate execution of OSU Airport's Master Plan (Owner: Doug Hammon)

Primary University cross-reference: 1.3.1.1

Secondary University cross-reference: 2.3.3.1, 5.1.3.1

Metrics: Final approval by OSU Board of Trustees, Financial performance against plan, support of aviation academic programs

Milestones: Financial plan review by OAA by June 2010, Physical Planning Liaison Group endorsement by summer 2010, Board of Trustees approval by October 2010

Resources: \$100K for capital improvements and \$500K for operations initiatives (flight training clinic and hangars) over 4 years

Initiative description: Gain final endorsement by OSU senior leadership and Trustees of the Master Plan for the OSU Airport; once approved, begin implementation.

Description of support outside primary objective: The airport's plan supports the interests of the aviation academic and research programs, and improves the capability of OSU's collaboration with companies and organizations remote to Central Ohio.

1.3.A.4 Establish phase one of the technology neighborhood which includes: the renovation of Hitchcock Hall Lobby and its external frontage, the renovation of the UESS Suite, and the enhancement of the bridge connecting Caldwell and Drees and other areas (Owners: Greg Washington, David Tomasko and Chris Mulholand)

Primary University cross-reference: 1.3.1.1

Secondary University 2.3.3.1

Metrics: Project on schedule and on budget

Milestones: Occupancy by December 2010; wireless capability by December 2010

Resources: \$1.5M cash (\$350K from college and \$1.2M from private donations)

Initiative description: Remodel the lobby to provide enhanced technology and marketing of the College's activities, and remodel the UESS suite to modernize student services support environment. Aesthetically enhance the walkway connected Drees to Caldwell along with the external façade of Hitchcock hall.

Description of support outside primary objective: Remodeling of UESS suite will provide better ability to support key student services

to the College's baccalaureate programs. Enhancement of Hitchcock will establish a core technology based identification for the college.

Goal 2. Students First – We will place Students First with access to academic excellence to ensure that the needs of students receive the highest priority as we continue to seek excellence in all phases of our operations.

2.1 Enroll the best through active recruitment and access

2.1.A Enhance pro-active student recruiting efforts to sustain an optimal high-quality yield (Owners: David Tomasko and Roberto Rojas)

Primary University strategy cross-reference: 2.1.1

Strategy description: Enhance our ability to enroll increasingly strong students by focusing on continuous improvement in recruiting practice.

2.1.A.1 Engage Undergraduate Admissions Office in setting and achieving sustainable College enrollment growth targets (Owners: Greg Washington and David Tomasko)

Primary University cross-reference: 2.1.1.2

Metrics: Number and distribution of NFQF in engineering

Milestones: 1350-1400 NFQF per year

Resources: Additional \$65K PBA for one recruitment staff, person to focus on both undergraduate and graduate programs. \$75K per year cash for recruiting and marketing travel and materials. Financial aid resources from Students First Students Now program, with target of \$5.9M by FY11.

Initiative description: Work with UAFYE to establish and meet enrollment targets for NFQF along with a desired distribution among programs. Enhance both merit and need-based financial aid to students through new endowed scholarships and fellowships.

2.1.A.2 Optimize graduate recruiting events and fellowship allocations (Owner: Roberto Rojas)

Primary University cross-reference: 2.1.1.1, 2.1.1.2

Metrics: Growth in the number of external students participating in recruiting events who eventually enroll at OSU; Rate of applications and acceptance of fellowship awardees.

Milestones: *Recruiting*: Grow enrollments by at least by 10% per year over the next three years, 5-10 students enrolled per year at OSU-COE graduate programs. Grow enrollments of underrepresented minority and women students, each by 10% each year. *Fellowships*: Increase rate of acceptance of Graduate School allocated fellowships to 60%. Keep rate of acceptance for COE-allocated fellowships around 75-85%

Resources: *Recruiting*: Cash for recruiting materials, mailings, advertisement, travel grants, food/beverage, hiring of temporary student help. Cash to pay for recruiting trips by faculty and a few OSU graduate students. *Fellowships*: Cash for 5 one-year fellowship offers (tuition, stipend). To be matched by additional 5 offers from departments (one per department)

Initiative description: *Recruiting*: Invite students and faculty from four-year colleges in Ohio and surrounding states with emphasis on minority serving institutions. Establish pipeline of graduate students from some of these institutions. Recruiting trips by faculty and a few OSU graduate students to some of these institutions. *Fellowships*: Send around 10 fellowship offers in January or early February to outstanding fellowship nominees for Graduate School competition (before Graduate School competition results are announced). Evaluate acceptance rate per department of COE-allocated fellowships. Use this and additional data to determine COE fellowship allocations to each department.

2.2 Increase cultural and economic diversity of the student body

2.2.A Provide a comprehensive portfolio of programs aimed at improving recruitment and retention of women and minority students (Owner: Mary Juhas)

Primary University strategy cross-reference: 2.2.1

Secondary University cross-reference Supports: 5.3.2

Strategy description: Increase reach across campus, into the community, and the State to develop strategic partnerships that enhance student diversity.

2.2.A.1 Develop undergraduate recruitment pipelines with Ohio schools at the K-12 level and graduate recruitment pipelines with Minority Serving Institutions (MSIs) (Owners: Mary Juhas and Roberto Rojas)

Primary University cross-reference: 2.2.1.1

Secondary University cross-reference: 4.2.1.1 and 5.3.2.1

Metrics: % of underrepresented minorities, % of women, % increase of students at the regional campuses; # MSI partnerships

Milestones: Compare projections with admits annually.
Establish the North Carolina A&T relationship and form one new graduate partnership with a Historically Black College and University (HBCU) or a Hispanic Serving Institution (HIS) per biennium

Resources: \$50K per year for campus visits to MSIs and hosted visits of MSI faculty and prospective graduate students to OSU.

Initiative description: Establish undergraduate pipelines with Ohio schools at K-12 level through regional outreach events and on-campus preview days. Establish graduate pipelines with MSIs. The graduate students recruited will serve as mentors to increase the minority population at the undergraduate level.

Description of support outside primary objective: Includes outreach to the K-12 community. The relationships with MSIs will focus on partnerships in research areas where both institutions are strong.

2.2.A.2 Expand the scope and impact of the Women in Engineering Program and the Minority Engineering Program (Owner: Mary Juhas)

Primary University cross-reference: 2.2.1.2

Secondary University cross-reference: 2.2.1.1

Metrics: Number of engagements with the private sector to support the recruitment and retention of women and underrepresented minority students. Amount of external funding raised from private sector or government sources to support new programs for recruitment and retention; number of women and minority students who enroll and are retained in engineering; success of K-12 outreach and undergraduate retention programs as measured by formal assessment activities.

Milestones: Add one new grant each in our MEP and WiE programs per year to support existing or new programs; annual increase in NFQF enrollment of women and minorities; formal assessment of all program offerings at the completion of the activity.

Resources: \$25K per year for PREFACE program; Cash for post-doc position for FY11 and FY12 - \$55K/year + benefits.

Initiative description: Recent assessment of the MEP and WiE programs has identified opportunities for expansion of their scope and impact. A post-doctoral researcher has been hired to help implement these opportunities.

2.3 Provide an exceptional undergraduate, graduate and professional student experience, and graduate students positioned for success as professionals and citizens

2.3.A Provide an experiential, interdisciplinary and global focus in our educational programs (Owners: David Tomasko and Roberto Rojas)

Primary University strategy cross-reference: 2.3.3

Secondary University cross-reference: 6.1.2

Strategy description: Support and create opportunities for students to gain interdisciplinary and global experiences during their tenure at OSU

2.3.A.1 Create or enhance both physical environment and administrative processes to foster educational innovations focused on experiential inquiry. (Owners: David Tomasko, Roberto Rojas, and Bob Gustafson)

Primary University cross-references: 2.3.3.1

Secondary University cross-reference: 2.3.3.2

Metrics: # of partner organizations providing projects and activities; Creation of facilities; # of undergraduate students participating in research, # of undergraduate students participating in multidisciplinary or industry-sponsored design projects

Milestone: New first-year facilities by Au 2010, New student project shop by end of 2011; >75% of undergraduate students participating in experiential inquiry projects by 2013

Resources: PBA for industry liaison, \$50K cash per year to create opportunities for students and seed projects within college. Cash to establish student shop and create facilities (\$100 K per year).

Initiative description: Increase partnerships with industry and community organizations to provide projects and activities that can be

integrated into 2nd and 3rd year curricula. These include the expansion of (Ohio Innovation Initiative) focused on linking industry to students and our Tony Wells Social Innovation Initiative focused on developing the next generation socially responsible products. Provide flexible laboratory and instructional space for first-year engineering design build activities that allow for continued curriculum innovation, and appropriate machine shop space for prototyping and fabricating a range of student projects for multidisciplinary design projects. Remove cost barriers to involving undergraduate students in research and project activities.

2.3.A.2 In cooperation with other colleges (NMS, FCOB, Public Health, ASC) determine feasibility and establish new interdisciplinary minors, MS programs, graduate specializations and/or degree certificates that integrate green energy, entrepreneurship, economics, health and the environment (Owner: Roberto Rojas and David Tomasko)

Primary University cross-reference: 2.3.3.2

Secondary University cross-reference: 6.1.2.1

Metrics: Number of students enrolled in Masters of Global Engineering Leadership (MGEL) program and ranking of program (after 5 years of existence); # of students taking entrepreneurship minor; # of students taking Engineering Science and Technology Studies minors

Milestones: 2 or 3 degree certificates or graduate specializations (tracks) within existing MS programs in COE departments in next 5 years; 30/40 students per year in MGEL, to begin FY12-13; 20 students in each of Entrepreneurship, Engineering Science, and Technology Studies minors per year by 2013

Resources: PBA for faculty teaching MGEL courses, administrators as well as staff support. Cash for advertisement, recruiting, long distance teaching of MGEL program. \$100K per year scholarship support for COFEE scholarships from Choose Ohio First program.

Initiative description: Create degree certificates within existing MS programs in COE departments in areas that combine green energy, the environment and public health. Start feasibility study of new COE

MS professional programs in green energy, environment, public health and/or economics. Start new masters degree in global engineering leadership in partnership with OSU's Fisher College of Business and the John Glenn School of Public Affairs. Expand entrepreneurship minor resulting from Choose Ohio First scholarship program for students wishing to combine engineering and entrepreneurship. Promote minors in Engineering Science and Technology Studies to non-engineering students.

Description of support outside primary objective: The MGEL program is somewhat related to an "executive MBA" program with emphasis in engineering. New degree certificates can be changed/updated according to needs of industry and government (short-cycle MS degree tracks).

2.3.A.3 Establish a Global Studies Office (GSO) that will manage study abroad (and other international engagements), global internships, international faculty research, and key global partnerships (Owners: Greg Washington, Mary Juhas).

Primary University cross-reference: 5.2.1.1

Secondary University cross-reference: 2.3.1.1

Metrics: # of students who have international experience, # of faculty research engagements, number of key global partnerships

Milestones: Establish the GSO and hire a staff person to manage it

Resources: \$120k PBA for staff person and faculty release time or appointment. \$100k budget per year.

Initiative description: Establish a Global Studies Office (GSO) that will manage study abroad (and other international engagements), global internships, international faculty research, and key global partnerships. This organization will work closely with the Vice Provost for Global Strategies and International Affairs at OSU and will be the college's primary interface to OSU's gateways.

Description of support outside primary objective: This office will enhance our success in establishing international educational experiences for our students.

2.3.B Offer a comprehensive portfolio of student support services that prepare students for professional practice (Owners: Rosemary Hill and David Tomasko)

Primary University strategy cross-reference: 2.3.2

Secondary University cross-reference: 3.1.1

Strategy description: Create programs that prepare students for employment as engineering professionals.

2.3.B.1 Provide a comprehensive cadre of career services for students, including cooperative education, internship and placement functions (Owner: Rosemary Hill)

Primary University cross-reference: 2.3.2.1

Metrics: Student satisfaction with services, Employer satisfaction with services.

Milestones: >95 % of students and employers continue to utilize career services; the majority of both student and employer users express satisfaction with quality of service.

Resources: none in short term; benchmarking results will determine future expansion needs, including possible PBA for career services staff

Initiative description: Benchmark and possible expansion of operation and activities of the Engineering Career Services office and Engineering Cooperative Education and Internship Program.

2.3.B.2 Encourage active student participation in professional organizations and engineering project competitions (Owner: David Tomasko)

Primary University cross-reference: 2.3.2.1

Metrics: # of students actively participating in professionally focused student organizations; # of student project teams competing.

Milestones: >66% of students participating in at least one organization or affiliated project team; 25 teams by 2012.

Resources: \$20K cash per year to support operation and activities of such organizations; existing resources from CAR and TREP; \$12-25K per year to promote participation (from program fee).

Initiative description: Encourage students to participate in professional societies and to create new organizations with a professional focus. Partner with student organizations and employers to increase opportunities for productive student/employer collaborations. Promote existing and support new engineering student project teams for national and international competitions.

Goal 3. Faculty and Staff Talent and Culture – We will further develop our highly diverse faculty, staff talent and create a high performance culture driven by common principles of excellence in accountability and achievement.

3.1 Enhance academic reputation and rankings

3.1.A Emphasize, in our faculty recruiting, strategic areas related to global grand challenges (Owners: Greg Washington and Stu Zweben)

Primary University strategy cross-reference: 3.1.1

Secondary University cross-reference: 4.1.1

Strategy description: Focus new and replacement faculty and research-related investments along strategic and programmatic not departmental lines. Investments will occur in the following research areas: 1) Advanced Materials; 2) Energy, Sustainability and the Environment; 3) Mobility and Transportation; 4) Computation and Information; 5) Power and Propulsion; 6) Bioengineering; 7) Manufacturing; 8) Design, with about one-half of resources to be devoted to the first three areas.

3.1.A.1 Hire 4-6 mid-level to senior faculty members in key strategic focus areas (Owners: Greg Washington, Stu Zweben and Randy Moses)

Primary University cross-reference: 4.1.1.1

Secondary University cross-reference: 5.1.3.1

Metrics: Search committee activity, Offer acceptance

Milestones: Hire for start within FY11

Resources: \$110-175K of PBA plus \$300-700K startup per position.

Initiative description: Recruit 4-6 faculty members that align with the College's eight strategic research focal areas. Specific near term goals include hiring two mid-level faculty members in renewable

energy systems and energy storage, and three Ohio Research Scholars in sensor systems, propulsion systems, and materials.

Description of support outside primary objective: Hiring in these areas is consistent with the State's identified target industry clusters.

3.2 Enhance diversity

3.2.A Provide a comprehensive repertoire of programs aimed at improving recruitment and retention of women and minority faculty (Owner: Mary Juhas)

3.2.A.1 Create a College-based formal mentoring system for women and minority faculty and staff to aid their successful transition and integration into College academia (Owners: Mary Juhas)

Primary University cross-reference: 3.2.1.2

Secondary University cross-reference: 3.1.1.2, 3.2.1.1

Metrics: Engage the endorsement of 100% of the department chairs in this system so it can dovetail with any extant mentoring initiatives at the departmental level; number of new and existing faculty who participate.

Milestones: Engage 100% of department chairs by autumn 2010; develop the mentoring system by August 2010; make assignments at the beginning of each autumn quarter.

Resources: \$6K per year for monthly mentor/mentee group lunches; \$3K/year each for faculty and staff events.

Initiative description: This initiative will serve as a retention tool that complements programs offered by the ADVANCE program, Project CEOS.

Description of support outside primary objective: This program will enhance faculty professional development and promote retention of faculty members from underrepresented groups, thereby helping to close the gap to peer institutions.

3.2.A.2 Develop a program that supports dual career hiring within the College and provides an example to external colleges (Owners: Greg Washington, Stu Zweben, Mary Juhas)

Primary University cross-reference: 3.2.1.2

Secondary University cross-reference: 3.2.1.1

Metrics: Development of a process for the CoE that outlines dual career hiring within the CoE; Number of successful dual career hires within the CoE; Number of successful dual career hires initiated by the CoE; number of successful dual career hires supported by the CoE. Number of new incentives offered to departments that are successful in recruitment and retention of underrepresented faculty.

Milestones: Buy-in from all department chairs/head about the idea of a College-centric dual career hiring plan by July 2010; formalized plan developed by the CoE Diversity Action Committee by September 2010. The plan must include a budget. Announce a new incentive during FY11 and another new incentive in FY13. One-third of new faculty hires from underrepresented groups.

Resources: PBA for up to 4 new faculty hires per year to accommodate a second faculty hire. Cash for start-up packages for up to 4 new faculty per year. \$15K/yr for the incentives.

Initiative description: Anticipate dual career hires more effectively and be better able to provide effective solutions to specific situations when they occur. Set aside cash to provide incentives to departments that are successful in recruiting and retaining underrepresented faculty.

3.2.A.3 Evaluate diversity contributions in performance reviews of TIU heads and faculty/staff (Owners: Greg Washington, Stu Zweben, Mary Juhas)

Primary University cross-reference: 3.2.1.2

Secondary University cross-reference: 3.1.1.3, 3.2.1.1

Metrics: Development of formal wording for the annual performance evaluations of the TIU heads and faculty/staff to help clarify expectations; initiate the process; continue the process.

Milestones: Complete the formalized wording and incorporate into the next annual review.

Resources: Reallocation of AMCP funds

Initiative description: Formalize the addition of a diversity component to the annual performance evaluation of TIU heads and faculty.

Description of support outside primary objective: This will provide recognition of good diversity practices inside and outside the unit. It will also help to retain underrepresented faculty who often engage in diversity activities and may not receive recognition.

3.2.A.4 Expand the faculty pipeline program aimed at early identification of women and underrepresented minority faculty beginning at the undergraduate level and including graduate students, post docs and faculty. (Owners: Greg Washington, Mary Juhas)

Primary University cross-reference: 3.2.1.2

Secondary University cross-reference: 3.2.1.1

Metrics: # of potential faculty and staff identified; # of undergraduates identified and catalogued

Milestones: Increase the number of underrepresented minorities and women attending strong graduate programs and the number of interviews of underrepresented minorities and women

Resources: Reallocation of faculty lines towards hires. An additional \$20k for candidate travel and a separate allocation of \$20K for focused mentoring of undergraduates.

Initiative description: Identify, catalogue and engage high performing women and underrepresented minorities at the undergraduate level. Expose them to research and mentorship. Send them to complete the Ph.D. at other institutions. Identify, catalogue and engage talented women and underrepresented minority graduate students and post-docs who have the potential for faculty and technical staff positions in the college.

3.3 Instill high performance culture

Goal 4. Research Prominence – We will achieve world class research prominence by supporting innovative, cutting edge, within and across discipline research that will be the basis for achieving excellence in all that we do.

4.1 Foster preeminence in research

4.1.A Establish major interdisciplinary research Centers aligned with College's key research focus areas (Owner: Randy Moses)

Primary University strategy cross-reference: 4.1.1

Strategy description: Establish 4-6 new major multidisciplinary and interdisciplinary Center and/or research clusters over the next 5 years that are aligned with key research focus areas. Strongly seek federal block grant support for major centers, e.g., ERC, STC, MRSEC, NIH, DoD.

4.1.A.1 Develop new and strengthen existing centers that engage university, industry, and government in collaborative research and commercialization in the energy, manufacturing, materials and propulsion focus areas (Owners: Greg Washington and Randy Moses)

Primary University cross-reference: 4.1.1.1

Secondary University cross-reference: 5.1.3.1

Metrics: External research funding received; proposals submitted under new Center; establishment of physical location with needed equipment; number of companies engaged in the activity.

Milestones: Internal College center establishment process completed within six months; Proposal submitted for external funding within one year; Space renovated and new College Center formally established within 3 months of external funding award.

Resources: \$100-200K/yr total for 3 years for startup of each center.

Initiative description: Identify external funding sources that can be leveraged to build a new College center that align with our main research focus areas, with a near-term focus on energy, manufacturing, materials, and propulsion). Pursue these opportunities in partnership with EWI and Battelle to the extent possible.

Description of support outside primary objective: The areas of emphasis for these centers are consistent with the State's identified target industry clusters.

4.1.A.2 Create and implement budget allocation and performance review guidelines for College centers (Owners: Randy Moses and Stu Zweben)

Primary University cross-reference: 4.1.1.1

Metrics: performance review guidelines document; budget allocation guidelines document.

Milestones: College center review process approved by College Faculty (June 2010); Budget allocation guidelines established (June 2010); College Center performance reviews begin (September 2010); All College Centers are reviewed (September 2012)

Resources: Realignment of existing resources

Initiative description: Provide a clear process for funding centers that enables their creation, financial viability and accountability.

4.2 Foster external research partnerships

4.2.A Promote strategic public and private sector relationships to create new research opportunities (Owners: Randy Moses and Alissa Comella)

Primary University strategy cross-reference: 4.2.2

Secondary University cross-reference: 4.3.1

Strategy description: The College of Engineering engages with companies to help carry out its mission; however the level of engagement has not been as strategic as it should be. Develop a strategy for holistic engagement of companies that includes sponsored research, access to the College's talent pool, and philanthropic giving. Develop a strategy to build and maintain a strongly connected relationship with 8-12 key corporate partners.

4.2.A.1 Establish a College Industry Liaison Office (ILO) (Owner: Randy Moses)

Primary University cross-reference: 4.2.2.1

Secondary University cross-references: 4.3.1.2, 5.1.3.1

Metrics: Mission and goal statements; strategic plan developed; number and size of industry interactions.

Milestones: Hiring of ILO Director (March 2010); approved mission and goals (by July 1010); longer-term strategic plan for the ILO (by January 2011)

Resources: \$100K PBA from CoE + 20K/yr cash for support functions

Initiative description: Establish a College-level Industry Liaison Office to work with the University's ILO and Associate Dean for Research. Hire the College ILO Office Leader, who will be responsible for leading the College's corporate engagement.

Description of support outside primary objective: The ILO office in the College will facilitate improved commercialization activity

(4.3.1.2) as part of its duties and responsibilities. It also is expected to focus in areas that align well with the State's identified target industry clusters.

4.2.A.2 Develop a program of strategic alliances between the College and key industry partners (Owner: Dan Kramer)

Primary University cross-reference: 4.2.2.1

Secondary University cross-reference: 5.1.3.1

Metrics: College and corporate stakeholder satisfaction; number of strategic alliances established.

Milestones: 8-12 most important industrial partners identified (September 2010); strategy for working with primary partners (September 2010); engaging second tier industry partners (December 2010); identification of pipelining prospects (by March 2010)

Resources: Time and effort of Dan Kramer, with help from Alissa Comella, Randy Moses; Deanna Stewart

Initiative description: In support of the strategy to develop strategic relationship with 8-12 key corporate partners, determine the types and levels of engagement that provides a win-win for the College and the corporate partners.

Description of support outside primary objective: The industry partnership programs so developed are expected to align well with the State's identified target industry clusters.

4.3 Improve commercialization involvement and effectiveness

4.3.A Revamp IP-related processes and procedures to foster IP creation and commercialization successes from research (Owner: Randy Moses)

Primary University strategy cross-reference: 4.3.1

Strategy description: Recognizing that breakthrough engineering research may have its highest impact in commercial practice, develop incentives and rewards that encourage the College's faculty, research staff, and students to commercialize research innovations. Improve College administrative processes to reduce barriers to commercialization and to increase the number and impact of technology licensing.

4.3.A.1 Increase effectiveness of evaluating and processing intellectual property that results from College research and innovation (Owner: Dan Kramer)

Primary University cross-reference: 4.3.1.2

Secondary University cross-reference:4.3.1.3

Metrics: improved faculty satisfaction; number of licensing agreements; licensing revenues. Number of IP disclosures; time to decision on IP disclosures.

Milestones: IP evaluation committee formed and initial process defined (June 2010); Refined process

Resources: Reallocation of existing resources; time and effort of existing faculty and staff

Initiative description: Develop a process in which disclosed IP can be quickly and effectively resolved into one of a few paths (pursue OSU patent; assign IP back to individual, etc.) Refine IP disclosure documentation to facilitate timely decisions that result in maximal success of OSU-patented IP.

Goal 5. Outreach and Collaboration – We will increase outreach and collaboration through public and public-private partnerships that will enhance our impact on the quality of life for citizens of the state, country and world.

As outlined in Goal 2, the College of Engineering continues to align educational linkages, experiential learning objectives, and outreach activities to align with regional economic growth directions and with the University’s global outreach and service objectives.

As outlined in Goal 3, the College of Engineering will continue to recruit and develop faculty that align with the region and state’s identified target industry and economic development areas.

As outlined in Goals 1 and 4, the College of Engineering will continue to align its research and commercialization missions, and its building and infrastructure improvements, with the region and state’s identified target industry and economic development areas.

5.1 Align outreach priorities with academic areas of excellence

5.2 Expand the University’s global/international outreach and service

Goal 6. Operating & Financial Soundness & Simplicity – We will establish operational and financial soundness along with simplicity in processes to ultimately be known for our robust financial position using transparent, simple, and flexible systems.

6.1 Enhance and diversify our revenue sources

6.1.A Diversify our fiscal resources through an enhanced development effort (Owner: Alissa Comella)

Primary University strategy cross-reference: 6.1.1

Strategy description: Identify, cultivate, and solicit major gift prospects to meet College of Engineering annual fundraising goals in the context of the university-wide comprehensive campaign.

6.1.A.1 Establish and achieve College total private support fundraising annual goal in cooperation with University Development in context of comprehensive university campaign.(Owner: Alissa Comella)

Primary University cross-reference: 6.1.1.1

Metrics: Annual goal established by University Development in consultation with College of Engineering and approved by Dean.

Milestones: \$35.9M by FY10, and average \$50M annually through FY14

Resources: Realignment of existing college resources.

Initiative description: Identify and cultivate major gift prospects and determine solicitation schedule for major gift asks on an annual basis in conjunction with University Development and other College of Engineering partners.

6.2 Improve our operating efficiency

6.2.A Optimize the operation of our internal administrative support processes (Owner: Stu Zweben)

Primary University strategy cross-reference: 6.2.1

Secondary University cross-reference: 6.3.1

Strategy description: Seek ways to simplify administrative activities within the college to enhance productivity and reduce bureaucracy.

6.2.A.1 Enhance Business Operations Center to incorporate a broader range of responsibilities serving the entire College (Owner: Marie Mead)

Primary University cross-reference: 6.2.1.2

Metrics: Specific metrics to measure the effectiveness of the operations of the BOC will be developed as part of the implementation plan

Milestones: Implementation plan developed by early summer 2010; expansion of BOC to begin by autumn 2010 with completion by end of FY11.

Resources: \$100K cash (renovation and personnel transition)

Initiative description: Expand BOC activities to handle other units and other types of transactions, in accordance with the Office of Business and Finance's streamlining objectives.

6.2.A.2 Provide more centralized IT support to college units (Owner: Michael Compton and Stu Zweben)

Primary University cross-reference: 6.2.1.2

Secondary University cross-reference: 2.3.3.1

Metrics: Number of college-specific e-mail systems, percent of college utilizing centralized e-mail; Percent of college utilizing Altiris desktop management system

Milestones: Plan delineating types of services and schedule, by December 2010; Full implementation of Altiris (Fall 2010)

Resources: \$200K, from computing fee and College

Initiative description: Provide a means of effectively supporting desktop computational devices to reduce the time IT staff need to spend updating software and keeping machines in compliance with IT security policies. Work with OIT to define how centralized e-mail services can effectively be provided and be among the first units to realize this service.

Description of support outside primary objective: By enhancing the ability to keep software up-to-date and consistent, the teaching and learning environment for students is improved.

6.2.A.3 Enhance faculty startup reserve fund to support intended steady-state faculty hiring (Owners: Stu Zweben and Marie Mead)

Primary University cross-reference: 6.2.1.2

Secondary University cross-reference: 6.3.1.2, 3.1.1

Metrics: Size of startup fund in PBA; average startup size

Milestones: \$2M by FY14

Resources: PBA from program fee and IDC NMR

Initiative description: Create a pool of annual cash to more appropriately and systematically fund College portion of startup packages for new faculty hires.

Description of support outside primary objective: This approach is important in recruiting the best faculty to the College, as competitive startup packages are essential to attract excellent faculty. It also allows proper planning to maintain a sound funding approach to faculty hiring.

6.3 Maintain financial soundness and responsibility