PATHWAY A

Future of Funded Research at the University of Cincinnati

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PATHWAY B

Research in the Arts, Humanities and Social Sciences

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UNIVERSITY OF
Cincinnati

Future of Research/Scholarship at the University of Cincinnati (Pathways A & B)

I. *Overview:*

Research success, both traditionally funded and unfunded, is the primary driver for any university's prestige and reputation, ultimately improving its ability to accomplish all of its missions. While University-level research investments strive to support society and enhance our University's reputation, we must also strive to continue to invest in both fundamental discovery as well as applied research whether traditionally funded or unfunded, upon which our success as a research institution truly depends. We recognize the world's finest research universities have areas of strength in a myriad of academic fields, and that the ability to attract external funding is not the sole metric for success. Rather success must be measured in our ability to advance knowledge, disciplines, reputation, working with other universities, and society's interest and well-being, regionally, nationally and globally. Although research in the arts, performing arts, humanities, and social sciences tends not to generate large amounts of extramural funding, these areas are no less vital to the prestige of high research intensive academic institutions (i.e. Carnegie Classification). Excellence in all areas is a prerequisite for national and international standing, and is essential in providing a rich and inclusive learning and research environment.

Our research enterprise is essential to the University of Cincinnati's (UC) mission in all aspects of what the University seeks to be, including: educating and training of future scientists, teachers, and clinicians; generating knowledge that has positive outcomes for stakeholders inside and outside of the institution; improving healthcare; and enhancing community economic and social growth and well-being. A defining characteristic of our research agenda will be the inclusion of a wide range of voices, perspectives, and experiences, especially of those who have been historically underrepresented. As with our educational mission, research efforts must be proactively supported and nurtured (i.e. sustained) to continue to support our university mission and remain competitive. Vigilance as to what constitutes a sustainable research enterprise is critical since the long-term viability of research cannot be taken for granted if left unattended. In the current research environment, shifting faculty dynamics, increasing external competition, aging infrastructure, dramatic shifts in funding sources and the stress to support higher education, all create a challenging environment for sustainable growth in research and to maintaining the infrastructure necessary to meet these challenges.

This report makes a series of recommendations which will be necessary to maintain our status as a highly intensive research university in the upcoming decade. These recommendations are guided by the values of:

- ✓ Quality of effort
- ✓ Equality of opportunity

- ✓ Cross-disciplinary in design
- ✓ Committed to Faculty success
- ✓ Sustainable and competitive by necessity

Pathway A focused on both traditionally funded and unfunded scholarship in the STEM disciplines, business, and design; whereas, *Pathway B* focused on research and scholarship in the arts, humanities, performing arts and social sciences. Emphasis in the future must focus on the integration of *Pathways A & B* and research with education and community outreach. Both *Pathways A & B* will become permanent advisory committees to the VP for Research and the University Executive Committee under more suitable names to ensure continuity of this effort.

II. *Five overreaching goals will frame our efforts:*

1. *Reaffirming the Quality and Essential Nature of our Research Mission*
2. *Equality and Diversity in all Aspects of our Research Enterprise*
3. *Building a Culture and Environment of Cross-disciplinary Research*
4. *Creating a Sustainable Infrastructure which supports Cross-disciplinary Research*
5. *Realigning the Faculty Reward System to Value Research Excellence*

Each of these goals is addressed in turn below with specific recommendations for each and steps to complete each recommendation. Recommendations are identified as requiring: **Changes in University/College policy** and/or **Investment;** and further characterized as **Programmatic, Infrastructure,** or **Faculty** development.

GOAL 1. *REAFFIRMATION OF THE RESEARCH MISSION OF THE UNIVERSITY OF CINCINNATI*

Major research intensive universities such as UC are anchored by three primary missions: education, research and service to the community. While education is an exceptionally important part of our mission at UC, research is equally important to our vision of who we strive to be, the well-being of our community-at-large and to our educational mission in providing experiential learning and training for our students. Moreover, it is through research accomplishments that major public universities build prestige in order to attract the best faculty, students and philanthropic gifts. ***Our three missions are not in competition with each other, but rather the strength of our University as a whole is predicated on our ability to integrate and leverage all of our missions into a single vision***.

> **Recommendation 1 (Changes in University/College policy): Reaffirm the research mission as essential to the overall vision of the University.**
> There are 3 critical steps in accomplishing this recommendation:
>
> > **Step 1.** Reaffirm to ourselves and the community the importance of our research mission at all levels including the Board of Trustees, central UC Administration,

UC colleges, and our faculty, staff and students. It must be clearly communicated internally and externally that our research mission is a part of "who we are" and "why we are here." Specifically our research mission must be clear to both our *Mission* and *Vision* as a university.

Step 2. Seek greater integration between all of our missions of research, education, and community service.

Step 3. We must reaffirm our intent to become national and international leaders in research based on our values of quality, equality, cross-disciplinary effort, sustainability and competitiveness.

GOAL 2. *EQUALITY AND DIVERSITY IN ALL ASPECTS OF OUR RESEARCH ENTERPRISE*

(Changes in University/College policy)
Success in our research enterprise is linked directly to our ability to embed equality and diversity in the recruitment, management and professional development of research faculty, staff and students with all processes being transparent, fair, and consistent. We cannot begin to solve the world's problems unless our faculty, staff and students mirror and understand all aspects of our society and the environment in which we live. Senior managers and principal investigators will lead by example in creating an environment in which all researchers are valued for their unique, multifaceted perspectives, contributions, and research output that both reflect and advance the diverse communities we serve. Diversity in thought and approach will be instrumental in maintaining an excellent and robust research engine capable of "real-world solutions" in the face of ever-changing national and global needs. Adopting these principles will reduce, if not eliminate, the structural inequities that have disproportionately affected the performance and career advancement of underrepresented populations. Ultimately, all researchers will be empowered to share in the responsibility of developing a culture of inclusion - one that removes barriers and provides opportunities to grow our research excellence. Not only will this focus on equality and diversity elevate our research profile and enhance the university's reputation as a destination for researchers of the highest caliber, but it will also position UC as a more attractive and competitive option for the next generation of researchers.

GOAL 3. *BUILD A CULTURE OF CROSS-DISCIPLINARY RESEARCH*

Recommendation 2 (Changes in University/College policy; Investment; Programmatic; Infrastructure; Faculty Development): Identify areas for University research excellence which build on existing strengths and which provide the greatest opportunity for cross-disciplinary effort. A central goal will be to build on strong disciplinary efforts to enhance broad-based cross-disciplinary research (interdisciplinary and multi-disciplinary team efforts), involving diverse faculty and student teams bridging units, disciplines and colleges (Especially true in diverse colleges such as A&S) in order to build regional, national and internationally recognized areas of excellence. Cross-

disciplinary also implies the integration and support of fundamental (pure/theoretical), translational and applied research efforts. It should also be kept in mind that at the core of cross-disciplinary success is our ability to maintain disciplinary excellence.

Initial areas of focus in Pathway A (See Section IV. For Pathway B) will build on existing foundations, and were selected where UC:

1) Has proven disciplinary expertise, leadership and strength;
2) Has competitive opportunity in areas of scientific and societal importance;
3) Has established facilities capable of supporting these areas. (Table 1.)
4) Were selected by faculty consensus in a yearlong process including "Listening to the Future", faculty forums, discussion with Dean's and faculty feedback through the VP for Research web site.

Table 1. Initial Areas of Excellence
1. The Environment
2. Analytics/Information
3. Sensing
4. Health
5. Manufacturing

The reality we face is we cannot afford to focus on unlimited areas of excellence in an environment of limited resources. Nor can we continue an existing culture of disparate independent or college-based initiatives which silo our efforts or exclude participation. We must, however, guard against replacing one silo-based culture with another represented by independent institutes and/or centers or divided solely by disciplines. The areas selected were intentionally broad to promote inclusion and are only limited by the willingness of disciplines to participate. The areas selected must be viewed as opportunity for inclusion bringing discipline-based faculty together to create cross-disciplinary effort limited only by our imagination. (Figure 1.) It must also be recognized that a list of focus areas will not and should not prevent the development of additional areas of excellence as long as it can be clearly demonstrated as promoting the principles which advance disciplinary knowledge and the reputation of UC.
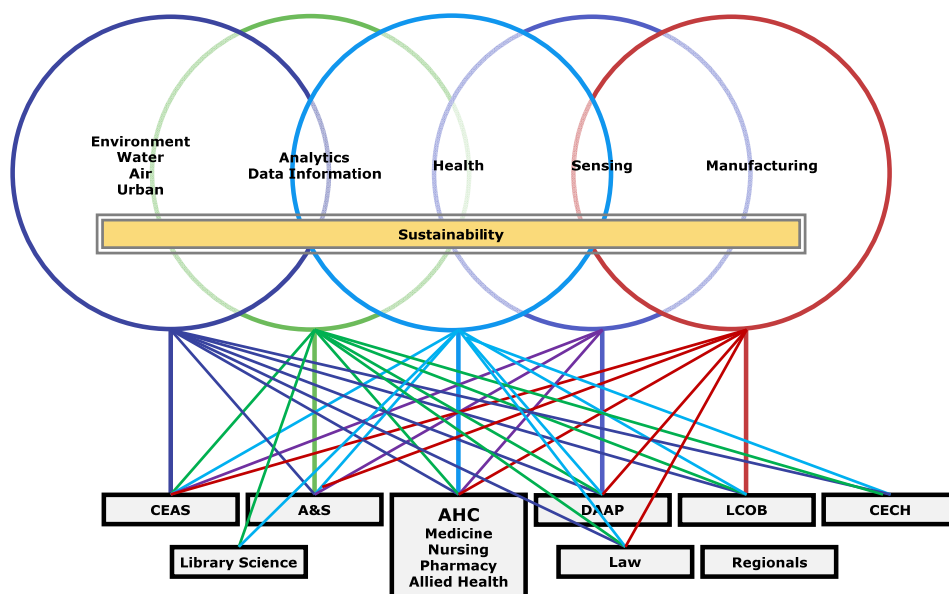
Figure 1. Focus Areas must be viewed as cross-disciplinary engines supported by disciplinary efforts within a framework that is sustainable. In such a view, converging efforts between different focus areas will become the key to our sustainability. As examples, the crossover between sensing and health or between analytics and the environment may lead to greater opportunity than if they remain apart. In addition, the crossover between fundamental/theoretical and applied research will be essential to the success of cross-disciplinary research. Future focus areas must build on and not compete with each other in a similar framework. While viewed through the perspective of colleges, maintaining disciplinary strength is at the very core of cross-disciplinary success.

It should be noted at the outset that cross-disciplinary research must be built taking advantage of existing faculty strengths who already have track records of intramural and extramural collaborations. It is therefore a prerequisite that UC invest adequately in relevant disciplinary programs within each focus area as they build cross-disciplinary collaborations. Such investments may include adequate start-up for new faculty, re-investment in existing faculty to achieve the next level of success or to bridge existing success, strategically filling vacancies following attrition or retirement to ensure disciplinary future, updating facilities and investing in state-of-the-art equipment. For this reason, any cluster hires must be built around programmatic development which can also integrate with the educational process. Clearly, some key areas of excellence and discipline have been underfunded in recent years and are now short of essential faculty and infrastructure. Restoring these areas and maintaining them thereafter will require a large infusion of new resources over the next five years, rather than past efforts of reduction and redistribution.

Consistent with this approach, several major funding agencies have undertaken robust efforts to support cross-disciplinary research and training, including NSF (e.g., http://www.nsf.gov/od/oia/additional_resources/interdisciplinary_research/), NIH (e.g., http://commonfund.nih.gov/interdisciplinary/), Education and Research Centers funded by CDC (e.g., http://www.cdc.gov/niosh/programs/tg/), Research Opportunities in Spaces and

Earth Sciences (ROSES) at NASA (e.g., http://science.nasa.gov/researchers/sara/grant-solicitations/), and the Health Resources and Services Administration (e.g., http://www.hrsa.gov/advisorycommittees/bhpradvisory/acicbl/reports/firstreport.pdf).

Step 1. Invest in new and existing faculty around cross-disciplinary programmatic focus areas. Enhancement of existing or the creation of new programmatic areas will offer the best opportunities to promote sustainable scholarship, advance the reputation of the university and attract the best and brightest students. Leadership must be identified or recruited to lead efforts to organize existing faculty efforts, identify new faculty to be recruited and lead efforts to identify best opportunities for programmatic development in the focus areas. A support structure of existing faculty and recruitment of new faculty could be completed through an RFP process which addresses overall goals, ensures equality and inclusiveness across a college or campus, identifies areas of initial research effort, defines measures of outcome and efforts necessary to make the program sustainable, and provides an estimate to the number of faculty, facilities and start-up funding required for development. This process should be open to new focus areas if a clear case can be made for campus-wide participation. Needs for cross-disciplinary cluster hires must be defined including how cross-college teams will interact, any special needs such as shared or combined facilities that will be required, and barriers which must be overcome for success of the entire cross-disciplinary effort (shared space, RPT, joint appointments, etc.).

Step 2. Create a physical space in a central University location to promote relationship building, encourage intellectual discourse and foster cross-disciplinary partnerships among disparate faculty and students. A major impediment to research across disciplines is the lack of easy access to convenient meeting space for faculty from different colleges and areas of campus. While technology has made it easier to maintain collaborations over distance, it is not conducive to the process of building relationships that lead to collaboration. Physical space should be easily scheduled. The location should be reachable by frequent shuttle, be close to the shuttle stop, and also close to an area available to faculty for short-term parking (i.e. Previous Faculty Club). This space must be identified in the first year and at minimal cost.

Recommendation 3 (Changes in University/College policy; Investment; Programmatic; Infrastructure): Develop cross-disciplinary research programs within the five focus areas including cross-disciplinary degree programs using a model that encourages and supports college participation rather than creating additional competition for college resources and college strategic planning.

Step 1. Programmatic Development (Changes in University/College policy; Investment; Programmatic; Infrastructure) Support of existing faculty, recruitment of new faculty and enhancement of supporting infrastructure in each of the five focus areas must be built within a framework of cross-disciplinary programmatic development which includes; emphasis on significance and innovation, clearly defined goals and aims, clear pathways for success with well-defined outcomes, required infrastructure and plans for sustainability. Cross-disciplinary programs and degrees must be driven through colleges in order to advance their research goals, recognition/ranking and by making new resources available to the faculty and colleges rather than a competitive drain on existing resources. Any financial models for colleges used by the university must take into account rewarding cross-collegiate efforts and collaboration.

Step 2. Shared Research Space (Changes in University/College policy; Investment; Programmatic; Infrastructure) for cross-disciplinary efforts must be developed to include investment in shared infrastructure. This is especially important for cross-disciplinary efforts involving cluster hires or where a focus resides within multiple colleges. UC's *Office of Planning+Design+Construction,* under the direction of architect Mary Beth McGrew, has already begun the process of developing feasibility plans for shared space across campus. This plan should be re-evaluated at the senior administrative and collegiate levels and implemented to meet the needs of developing cross-disciplinary programs.

Recommendation 4 (Changes in University/College Policy): Create and publish a strategic research plan for all colleges. Each of our 14 colleges and schools should be expected to formally evaluate their current strategic plans relative to the guiding values and recommendations for research in this document. This process should be a collaborative effort between faculty and the Dean of each college. This evaluation should include an analysis of opportunities for alignment with the focus areas as described above, as well as those areas which lie outside the focus areas but are deemed essential to the future of the college. This evaluation should specifically consider innovative means of achieving disciplinary, cross-disciplinary and cross-collegiate collaboration outside of the five focus areas. It is recognized that essential areas of research may lie outside of the five focus areas, which will require continued support and investment. Such areas should be clearly defined within the college plans. A specific analysis by each college should include *inter alia*: sharing of resources, sharing of faculty, mutual respect and recognition and integration with education. The resulting documents should be published either on the college web site or in a central location on the Office of Research web pages specifically designed for this purpose. *The next challenge we face will be to guide how colleges and individuals work together such that "No college or faculty is left behind."*

GOAL 4. *UC MUST CREATE A SUSTAINABLE FACULTY ENVIRONMENT AND CULTURE FOR RESEARCH/SCHOLARSHIP*

Recommendation 5 (Changes in University/College policy; Investment; Programmatic; Infrastructure; Faculty Development): Create a professionally staffed unit which support faculty success in research and research career development, train faculty in core research methodology, help in seeking research funding and foster cross-disciplinary research. Such a unit should integrate with other faculty support units such as CET&L, in order to ensure long term faculty success balancing teaching and research within a career from Assistant Professor to retirement. This may be done by creating an umbrella organization such as a Center for Enhancement of Research Careers (CERC) that provides value and training at ALL levels of faculty career development similar to what CET&L provides for teaching and learning. The model in place through the Center for Clinical Translational Science and Training (CCTST) could be expanded to support a more diverse faculty across the entire campus and its regionals. Additional Steps would include:

Step 1. Create communality to build strong cross-disciplinary teams. Creating a productive, vibrant and sustainable interdisciplinary team requires a communal core possibly structured around a shared graduate degree program and/or a shared space, shared "time" (bringing everyone together for weekly and/or monthly day-long retreats), or shared resources. Most critical will be a shared vision or mission.

Step 2. Develop programs to reward and recognize faculty to work collaboratively using team science. In summary, develop guides to effective and productive cluster development through CERC.

Step 3. Support a far more robust program of cross-disciplinary workshops, grant-writing workshops, colloquia, and seminars featuring high-profile, internal and external participants who would be broadly attractive to constituents throughout the University. External participants especially provide validation to current research endeavors and serve as a source of enlightenment to spark creativity and drive innovation.

Step 4. Train faculty on how to reach out to community and industry partners. Concentrated efforts to understand the needs of potential community and industry partners provide a win-win opportunity: additional resources and jobs for our students, and high-quality R&D products and highly-trained employees for industry.

Step 5. Help train faculty on critical professional practices. This expertise could include: hiring practices, performing annual reviews, philosophies and methods for creating a functional and incentivized work environment, and the many other management skills critical for successful, thriving units, centers, and

departments. Such efforts should be integrated with succession planning within each unit.

Step 6. Encourage and train the research leaders of tomorrow to effectively develop and manage disciplinary and cross-disciplinary research groups, shared spaces and shared resources. **In summary, create our own system of internal well-managed clusters.**

Step 7. Encourage departments "lending" or "exchanging" faculty with other department for research, teaching or co-teaching a course. Such effort must take into account a fair financial model for both colleges (mutual exchanges, inter-collegiate VP's, inter-collegiate sabbaticals, etc.).

Recommendation 6 (Changes in University/College Policy; Investment required): Create enhanced revenue streams for the university, colleges and faculty in support of their research enterprise.

Step 1. Re-model PBB to reward individual/inter-collegiate and cross-disciplinary research. Either adjust PBB to support cross-disciplinary and cross-collegiate research or develop an alternative budgeting model that does not make a College's (and the University's) research mission subservient to its success in competing with other Colleges for undergraduate enrollment. The argument that tuition dollars are revenue generators and research is not is inherent in any and all universities which are research intensive and is counterproductive to the mission of research. A new model should: a) focus on rewarding new revenue generation that enhances the University's overall revenue stream, rather than cross-college competition that does not; b) incentivize cross-disciplinary collaborations that enhance the ability of the University to attract new, high-quality faculty and students who are increasingly drawn to these outstanding research efforts; and c) recognize activities that elevate the stature of the University.

Step 2. Enhance opportunities to diversify funded research portfolio.

A. Take advantage of databases of funding sources, Academic Analytics and our lobbying groups in Washington and Columbus. Dedicated university-wide support for identifying those resources and other opportunities and distributing that information in a timely fashion by the Office of Research is essential.

B. Develop stronger partnerships with industry, particularly in cases in which there is a natural relationship. The relationship of CEAS with GE Aviation (leveraged through UCRI) and, more recently, the relationship between Eli Lilly and the College of Medicine are cogent examples.

C. Emphasize the opportunity value of a research partnership with industry rather than trying to over-control the intellectual property. Formulate a

contractual template that stimulates and attracts industrial partnership, including favorable IP terms for industry.

D. Provide formal training on entrepreneurism as a means of diversifying our research portfolio, and how that can be achieved by our research faculty.

E. Create opportunity for communication and networking, through a venue of frequent face-to-face meetings (in a variety of venues and capacities) in which top researchers, center directors and university leaders engage with potential external partners in industry and government.

F. Uncover goals and interests with external research partners in industry and government to facilitate future collaborations.

G. Improve integration with UC Foundation:

1. Redirect the UC Foundation to measure success by gains made at UC in our strategic plan.
2. Measures of success should also be governed by the ability to generate research rather than the number or size of gifts.
3. This effort will need to directly pursue corporate funding opportunities, and to work more proactively with units to enhance alumni relations, which may be prerequisites to robust corporate contributions.
4. We must identify better ways to integrate UC Foundation efforts in the overall research mission of the University. This integration may require a new model of interaction between the UC Foundation and UC, which not only considers the needs of individual colleges, but also emphasizes the fundamental principles for overall university research efforts.
5. Work with the UC Foundation to create entrepreneurial streams of funding as gifts to support commercialization of UC IP by faculty and students.

Step 3. Provide additional funds for pilot projects prior to external grant submissions, as well as bridge funds to sustain productive research in periods between external funding. Re-evaluate the internal grant systems and funding levels (University Research Council) to foster diverse research and grant training for graduate student and junior faculty, as well as provide research incentives to mid-level faculty, and career-shift funds to more senior faculty to change focus in their career path.

Step 4. Revise the Facilities &Administration (F&A) (i.e. Overhead or Indirect Cost) distribution model to one that is more supportive of research infrastructure within the university/college structure and incentivizes research effort by faculty and colleges.

Recommendation 7 (Changes in University/College Policy; Programmatic; Faculty Development): Change the fundamental way we hire and place faculty to include a cross-disciplinary model in addition to the traditional disciplinary model.

Step 1.Create an institution-wide policy for joint appointments that includes: procedures for hiring, allocation of work and research revenues, annual evaluation, tenure and/or promotion, etc. Develop Memorandum of Understanding (MOU) templates that outline all relevant aspects in the joint appointment, to be used for offers, annual reviews, and RPT.

Step 2. Develop university-wide hiring practices (with requisite training) that make use of the best research on locating and attracting a broad, strong and diverse pool of applicants and reducing unconscious bias in evaluating, interviewing and selecting applicants, to ensure the highest quality candidate available for all aspects of the position. Cluster hires among colleges should be also supported.

Step 3. Allow alumni and industry partners to participate in the hiring of STEM faculty where desirable. They may have connections to expand the pool and can offer useful industry practices for evaluating candidates. If they are engaged and invested in the decision, they may be willing to offer resources to the new hire, in the form of start-up funds, equipment, lab space, collaborations, etc. greatly sweetening the pot to attract the strongest candidate.

Recommendation 8 (Changes in University/College Policy; Investment Required; Infrastructure): Level the playing field by providing sufficient research infrastructure support (offices/personnel) for ALL colleges in the UC system as defined by that college in conjunction with the Office of Research.

Recommendation 9 (Changes in University/College Policy): Form a standing committee of faculty committed to cross-disciplinary research (similar to UC Forward) for both Pathways. Use it to map diverse research efforts and use it to foster new relationships in emerging fields and topics. Help emerging research in traditionally unfunded disciplines and colleges and connect to it traditionally funded researchers to create hybrids. Promote senior and young faculty interaction to leverage wisdom and experience with current and emerging approaches. Create greater diversity in research efforts by building a pipeline for minority researchers that starts with undergraduates running through graduate and post docs to create a source from within UC to develop minority faculty; thereby, making it more appealing to external candidates considering UC when they see our commitment. Such a standing committee could also provide guidance in selecting future research focus areas of excellence.

GOAL 5. *REALIGN FACULTY REWARD SYSTEM TO VALUE FACULTY AS LONG-TERM DRIVERS OF RESEARCH AS WELL AS EDUCATIONAL EXCELLENCE*

Faculty incentives at UC are not optimally organized for building a top-tier research institution. Some constraining forces are connected to the current model of Reappointment, Promotion and

Tenure (RPT), which emphasizes proof of worthiness in the early years of employment while neglecting the post-tenure value of faculty in conducting and supporting research. The traditional model of RPT as being faculty driven with a focus on discipline and college will not change, but rather emphasis to value cross-disciplinary efforts with other disciplines or colleges must be included. In this goal, we highlight changes to the current system where revision and/or supplementation may "free-up" faculty to engage in more robust, wide-ranging research projects, take advantage of new opportunities for collaboration inside and outside the institution, and support essential functions of the research infrastructure, such as mentoring and service.

Recommendation 10 (Changes in University/College Policy; Faculty Development): Provide enhanced opportunities and options for career development leading up to and beyond tenure. Faculty pre-tenure and post-tenure should emphasize long-term careers from their first day in academics to retirement. It should be recognized as well that any support mechanism must be flexible to recognize how faculty needs will change over the course of a career. The following are **Options** that might be considered in the future in providing that flexibility.

Option 1. Provide a more flexible tenure clock across the entire university system. Currently, with few exceptions, the university is forced to make a decision on tenure by the 7th year. This is an artificial timeline, set by cultural norms and not practical considerations concerning faculty career development. Faculty have always been able to request an early tenure decision, but how does anyone benefit (university or faculty) by forcing a decision by 7 years, if both parties wish more time? Consideration should be given to faculty/colleges for extending the decision regarding tenure to the 10th year.

Option 2. Provide counseling and training to faculty in planning the long-term research career trajectory beyond achievement of tenure. This effort should be to promote mentoring, and to promote faculty research rewards and recognition, etc. Excellence should continuously be emphasized combined with efforts to promote and enhance faculty election to national academies or other national and international opportunities for recognition.

Option 3. Award faculty engaged in active scholarship with increased opportunities for paid leave or release time outside of the usual sabbatical leave and merit based systems currently in place. Find ways to give faculty more "deep" free time for research. Establish a model for research faculty which balances effort between teaching and research. Most importantly, understand as a university, the balance between teaching and research and how each affect the other, and reward excellence in teaching as we do excellence in research towards faculty career success. As with the current system, faculty will need to provide a detailed plan for how their activities will be helpful both to their own career goals and to the institution's goals for growing our research enterprise.
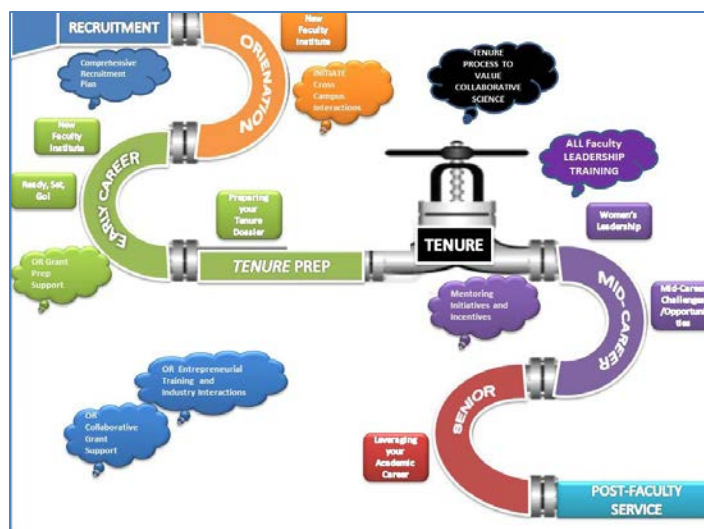
Figure 2: A strong theme amongst our original recommendations is the procurement and development of human resources at all career stages. The graphic above visualizes the process. Squares represent existing programs, clouds represent aspirational programs.

Option 4. Create an additional promotion opportunity after full professor. Full professors are needed to take on leadership/directorship roles in departments, provide mentoring of junior faculty, and bring their years of academic knowledge and experience to serve in upper administration. Such efforts need to be valued and rewarded. Full professors are the most valuable human resource we have in our University; however, we often do not reap the full benefits of their talents (and our investments). We need a formal means to acknowledge and reward those who achieve and maintain excellence in their work long after the title "full" and well before the title "emeritus." We should also continue to leverage senior faculty knowledge by providing innovative lifestyle options (gradual progression toward retirement over 5-10 years) that will encourage continued involvement while looking forward to a secure retirement.

Option 5. Emphasize successful, long-term career trajectories early in the tenure path. New professors need support and guidance to get their research going, while managing teaching and service commitments. Attention needs to focus on long-term career success of a young faculty member, without over-emphasizing the tenure decision. Young faculty should be trained to think far beyond tenure in their professional decisions. They should learn to have a vision and benchmarked goals that will exceed tenure expectations and set them on a trajectory of success for their entire professional career at UC. [Figure 2.]

Option 6. Provide flexible career paths for both pre and post-tenure with training in research at multiple levels. Establish mentoring at all career stages. Re-engage emeriti and senior level faculty to encourage their active participation in research, administration or mentoring activities. Focus on developing and

retaining existing faculty rather than recruiting from the outside alone.

Option 7. Develop a broader definition of sponsored research (i.e., maintaining our traditional research portfolio while encouraging innovative research mechanisms, industry-sponsored research and entrepreneurial activities) in direct support of faculty career advancement. Position and allow faculty to perform and benefit career-wise or financially from innovative research and entrepreneurial activity through entities such as the University of Cincinnati Research Institute (UCRI) as long as they maintain excellence and fulfill obligations in their UC effort by establishing workload policies for all colleges.

III. Scholarship and Research in the Arts, Humanities and Social Sciences:

These recommendations aim to improve the absolute and relative support of arts, humanities, and social science research/scholarship at the University of Cincinnati. In so doing the commitment and productivity of research in these fields and for research across the University will be enhanced.

THE VALUE OF THE ARTS, HUMANITIES, AND SOCIAL SCIENCES (OUTPUT): Research in the visual and performing arts, humanities, and social sciences provides immeasurable value to the University of Cincinnati and the communities it serves.

1. Reputational Capital - Pathway B Research faculty contribute to UC's international reputation. Students choose UC because of faculty reputation. Faculty develop positive community relationships through outreach, including performances, public lectures, and consulting. They engage in regional, national, and international research collaborations that heighten the institution's reputation around the world. Faculty deliver invited talks, produce popularly consumed publications, pen opinion pieces, and deliver interviews in general media. Pathway B Research faculty are engaged in a variety of community projects.

2. Public Good - Pathway B Research pursues the public good. It is involved with identifying, exploring, and articulating conditions, formulating problems, or analyzing states of affairs. The outcomes of Pathway B Research are often the result of stimulating, or enhancing human capacity (emotions, senses, ideas). The innovativeness of Pathway B Research comes from the manner in which it changes how people think about the world; it alters and influences how people learn and participate in civic life. This research often involves an exercise of imagination. This kind of research neither relies on producing predictable outcomes, nor can its outcomes necessarily solve specific problems. Instead, it engages enduring problems, questions, and issues.

3. Project Outcomes and Assessment - Pathway B Research can lead to an incredible

diversity of outcomes. Successful research production can include publications, invited lectures, visiting professorships, funding (donations, grants, and commercialization projects), community performances or shows, presented papers, course adoptions, references in newspapers or other popular periodicals, and shifts in public policy or intellectual paradigms.

RECOMMENDATIONS FOR ASSESSING VALUE: An accurate assessment of research must value the full variety of projects undertaken at UC. Assessment must account for imagination, innovation, connection to the community and social problems, aesthetic value, instrumental value, and reach. The question becomes, can the university develop a method of assessment flexible enough to accommodate the variety of research produced on its diverse campus?

We must move away from an assessment model that depends upon the number of publications, number of papers presented, and size of external grants to define the research success. Rather, we should honor awards, the extent of readership/viewership, and citation indices. This broader assessment model can help indicate the impact of research on the scholar's discipline, the breadth of interdisciplinary influence, and engagement in the community.

Projects should be assessed for internal grant-worthiness based upon the intrinsic value of the work itself. However, other measures of the work's outcome can demonstrate to external reviewers and the general public the value of the work conducted in these areas, including a discussion of the reach of the project and even discussions of funding (grant-based, commercialization, and philanthropic) associated with the project.

CORE AREAS OF FOCUS: Initial areas of focus in Pathway B (See Section I. For Pathway A) will build on existing foundations, and were suggested where UC:

> 1) Has proven disciplinary expertise, leadership and strength;
> 2) Has competitive opportunity in areas of academic and societal importance;
> 3) Were assessed through a process of External Review in the summer of 2013 (Appendix A);
> 4) Were selected by faculty consensus in a yearlong process including *Listening to the Future*, faculty forums, discussion with Dean's and faculty feedback through the VP for Research web site.

There are six areas of research strength identified and which could be built upon for future success:

> - ✓ Urbanization
> - ✓ Visual Studies
> - ✓ Sustainability
> - ✓ Global Studies

- ✓ Digital Studies
- ✓ Health/Medical Studies

Enhancement of existing disciplines or the creation of new programmatic areas will offer the best opportunities to promote sustainable scholarship, advance the reputation of the university and attract the best and brightest students. A support structure of existing faculty and recruitment of new faculty would be done through an RFP process which addresses overall goals, means to ensure equality and inclusiveness across a college or campus, areas of initial research effort, define measures of outcome, efforts necessary to make the program sustainable, and an estimate to the number of faculty, facilities and start-up funding required for development. This process should be open to new focus areas if a clear case can be made for college or campus-wide participation. This will also depend on colleges to create and publish their own strategic plans for scholarship. (See. Section II, Recommendation 4.) Needs for cross-disciplinary cluster hires must be defined including how cross-college or inter-collegiate teams will interact, any special needs such as shared or combined facilities that will be required, and barriers which must be overcome for success of the effort (shared space, RPT, joint appointments, etc.).

By building upon the above research strengths, the University of Cincinnati has a terrific opportunity to utilize already vibrant and rigorous work being done by faculty in the arts, humanities, performing arts and social sciences. In addition, opportunity also exists in integrating areas of focus in Pathway B with areas of focus in Pathway A, further strengthening both Pathway efforts.

RECOMMENDATIONS

Aim: For the University of Cincinnati to be better positioned to create a research environment that uses and builds upon the individual and collective research strengths of faculty in the arts, humanities, and social sciences.

Investing in Pathway B Research (INPUT): To further improve Pathway B Research, the University of Cincinnati must make strategic investments in areas of need.

> **1. Space** - UC currently has no policies regarding studio rental for Pathway B researchers: faculty in Architecture, Fine Art, Interior Design, Fashion, and other fields, often cannot pursue creative research in the confines of their office and must pay for studio space. The short-term lease of off-campus space could allow greater creativity, collaboration, and interaction with the community. A new URC off-campus lease fund could also support exhibition or gallery space for public history, art, or design installations.
>
> **Recommendations:**
> - A competitive application process to fund studio space

- Competitive grants to support exhibition expenses
- Competitive grants to specifically support community-based research

2. Time - For many Pathway B research professors, time is more valuable than money. URC has traditionally focused its arts, humanities and social science dollars on summer stipends or research support for faculty research programs, "primarily for those in the initial stages of developing their research careers." URC should also make investments in mid-career faculty research. A sabbatical policy that grants a full year off at half pay allows too few researchers extended release time from teaching to pursue sustained research. A URC Fellowship program could provide faculty with such release time. A fellowship of $8,000 could be used for release time and to pay for adjunct professors to give the faculty member a semester release to focus on research. Faculty who apply and receive one of these fellowships could be designated as "URC Faculty Release Fellows." URC should also restore funding of the existing summer stipend program, which declined from $243,000 in 2004/05 to $150,000 in 2012/13.

Recommendations:
- URC should create a Faculty Release Fellow Program for Pathway B Research.
- Institutional support for teaching-based research by integrating such classes into current faculty teaching load.
- Streamlining competitive grants so that they provide funding for both research and travel and the time needed away from teaching to do this.
- Staff support (sourcing, writing, and administering grants; planning of exhibition and events)

3. Resources - Some Pathway B researchers have no departmental or college travel funds to present research at national and international meetings, colloquia, and symposia. Similarly, most faculty have no reliable access to research travel funds, to support archival or site visits. A minority of Pathway B faculty can access resources from the Taft Research Center and the Semple Fund for travel support. Further, these funds should not be used to supply basic research support, such as funding for conference travel. Rather, they should encourage research excellence. In addition, URC should create a new fund to support the expenses of publication and promotion: copyright, copying of musical parts, copyediting of monographs and articles, indexing and related bibliography services, layered costs associated with image rights, gallery fees and publicity, media support for promotion and global access. Pathway B researchers need a funding source to help defray the expenses of publication and distribution. Another new URC fund should support the acquisition of research materials, instruments, and equipment. Without access to internal funding for research materials, from pigments to software, innovative research can be stifled. Finally, most colleges and departments offer essentially no startup support for new faculty. URC can fill this gap with a new fund.

Recommendations:
- The creation of a publication fund
- National conference travel scholarships
- International conference travel scholarships
- Scholarships for research materials (specifically geared to materials needed for studio practice, community-based research, and teaching-based research)
- A competitive grant to offset research expenses after a faculty member has reached a certain threshold in out of pocket expenses
- Shift away from PBB to values-based budgeting

4. Grant Writer - Pathway B researchers need help identifying external funding opportunities, navigating the sometimes complex application process, and perfecting grant writing skills. URC should hire a permanent professional grant writer with an expertise in the arts, humanities, and social science opportunities.

IV. *Integration of Research and Education:*

It should be first recognized that both research and education are equally vital to the Mission and Vision of the University of Cincinnati. It should also, however, be recognized that both research and education are mutually dependent on each other for success. As examples:

- You cannot have experiential learning without providing the experience. Research is a major and essential contributor to that experience for students.
- The key to recruiting the best and brightest students is having the best and brightest faculty scholars. The key to recruiting the best and brightest faculty scholars is having a student body representing the best and brightest with whom faculty can interact.
- It is faculty who are providing the intellectual property for the future of growth of this country; education, on the other hand is providing the workforce, researchers and educators for our future. The future of both lies in the success of the other.

Finding ways to integrate research and education is essential in our moving forward as a university. This process would best begin by taking into account how programs in education including enrollment, curriculum, student experience and workforce development impact our capacity to do research; and vice versa, how decisions on research impact our ability to educate. No place is this more important than addressing the impact of balancing research and teaching has on faculty career success. This issue can also be best addressed by a close working relationship between the Provost, responsible for student and faculty success, the VP for Research, responsible for research success, the Dean's, responsible for both and the faculty, upon which the success of both research and education truly lie.

Conclusion:

If the University of Cincinnati wants to remain as a high research intensive institution, we are faced with significant challenges that must take place to ensure our future success. Academic research is a core driver of discovery in all of the University missions and this core value must be reaffirmed and supported. Academic research efforts must be broad-based and embrace both funded and unfunded efforts, fundamental as well as applied research, and research in the arts and humanities, social sciences, performing arts as well as in STEM. Within this document are recommendations for cultural shifts, institutional decisions and generating a more robust infrastructure that must take place to foster a more diverse and sustainable research climate. At the very core of our success is valuing the contribution of our entire faculty and creating a nurturing environment for faculty success. These suggested actions will not be possible without significant new resources in time, space and funding. Although investments must be "smart" and responsible, they must be sufficient to ensure success. A vibrant research mission will ensure success in attaining and living up to our *Vision* and our *Mission* long into the future.

EXTERNAL REVIEW OF PATHWAY B RESEARCH
UNIVERSITY OF CINCINATTI

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Executive Summary

Under the new leadership of President Santa Ono, University of Cincinnati is undertaking an extensive yearlong process of creating a strategic research plan conducted by the Office of Research under the direction of Vice President of Research Bill Ball. This process has been designed along three primary pathways including: Pathway A – Research in Health, the Sciences and Engineering (Traditionally Sponsored Research Efforts); Pathway B – Research/Scholarship in the Arts, Humanities, Law and Social Sciences; and Pathway C – Industry Partnerships, Commercialization, Workforce Development and the Role of the University in Community economic development.

Professors Adrian Parr and Jana Braziel have been designated co-Chairs of the faculty research board for Pathway B, and have conducted meetings with affiliated faculty since last January, and produced an initial draft of a White Paper on Research in the Arts, Social Sciences, and Humanities.

Gregg Lambert and Frances Bronet constitute an external review committee charged with lending our perspective to this process as well as providing input into the organization of the overall strategic planning process intended to yield a comprehensive and strategic research vision for the next 5-10 years. During a two-day visit on August 26-27, 2013, we conducted meetings and discussions with the Vice President of Research, Co-chairs and members of the Research Board for Pathway B, as well as Senior Administrative Officers, Deans, and Directors of the University, Schools, Colleges and Centers (a complete schedule of our meetings is attached as appendix B). In the following report, we offer our impressions and recommendations following our discussions with various constituencies and based upon a review of the materials that were

provided to us before and during our visit.

First of all, we applaud President Ono's vision to recognize the centrality of humanities in the mission of the university. In addition, we acknowledge Dr. Ball's commitment, willingness and actions to develop plans for multiple research voices while opening up transparency of the office of Research demonstrates forward thinking. Dr. Ball sees his work as facilitating the work of the faculty, creating places for input in how research works at the university. His inclusion of arts, humanities and social sciences confirms the university's awareness of the breadth of scholarly/research/creative inquiry. Historically, due to funding pressures, these areas have often been excluded from strategic planning or relegated to a lesser tier. The current Office of Research at UC recognizes the work as not only fulfilling a public good, but also in preparing the landscape for a truly comprehensive research university.

According to its published mission statement, "The University of Cincinnati serves the people of Ohio, the nation, and the world as a premier, public, urban Research University dedicated to undergraduate, graduate, and professional education, experience-based learning, and research; through scholarship, service, partnerships, and leadership, to create opportunity, develop educated and engaged citizens, and to enhance the economy, and enrich the city, state and global community."

The opportunity, as we see it, is to continue to encourage distinction at UC that develops multiple kinds of practices while creating a resilient research network that builds upon the strength of the existing infrastructure and assets in the programs, departments, and faculty identified with Pathway B. Throughout this report, we both affirm and will maintain the distinction between the institutional and disciplinary locations of the knowledge and faculty associated with Pathway B (i.e., Arts, Humanities, and Social Sciences) and the schema of the Pathways A-B-C as a constructive paradigm for looking into the future of research in the areas. Both during our visit, and afterwards, we came to view the survey and assessment of existing "research" outside the traditional categories and frameworks a potentially productive and visionary exercise in the process of strategic planning, since it not only registers current strengths, but most importantly, future areas of growth, opportunity, emphasis, interdisciplinary research, and community engagement.

A. The Shifting Landscape of Personnel and Conflicting Priorities

During our visit, we immediately noted two features of the current landscape of the University of Cincinnati that certainly need to be highlighted as having a major impact on any future strategic planning process and will likely determine its probable success or failure:

1. The very recent and sweeping change of personnel at all levels of the senior administration, including the President, Deans and staff;

2. The continued presence of previous strategic planning and processes that were left in mid-stream, as well as new and parallel initiatives by President Santa Ono, that were a source confusion, anticipation, and sometimes cynicism.

Although this does not pertain to our focus on pathway B research, in keeping with our charge by the Office of Research, we feel that these environmental and transitional factors must be addressed in a coherent and forward manner by President Ono himself prior to moving forward along the pathways set out by strategic planning process—if only to invest these next and crucial steps with confidence and sure footing. The psychological and social climate of anxiety that accompanies dramatic shifts in leadership and administration will come as no surprise to anyone reading this report, but the continued existence of this anxiety will be a factor in shaping the results. In fact, the University of Cincinnati is in a unique situation because of the global nature of this transition, which may very well become the basis of not only a step forward, but a great leap into the future if the transition is properly managed in the current moment.

Concerning the second point, during our discussion with the Deans in particular, we learned of different priorities and agendas that were the products of previous administrations (e.g., AAU ranking, etc.), as well as many initiatives that were still in a process of being considered and/or scrapped. As a result, one of the impressions we had from both some Deans and also of some faculty was a "wait and see what comes next" attitude which, at the very least, bordered on passivity and, at its most pernicious, created a cynical climate in some cases or individuals we met.

In addition, during our visit we learned that President Ono announced a new initiative for the Liberal Arts in the University, and formed a committee composed of Deans and several faculty from various Colleges and Schools, including one of the co-Chairs of the Pathway B research working group. This new and parallel initiative immediately created confusion concerning its relationship to the strategic planning of the Office of Research already underway since last January, and some questions arose regarding the relationship and potential overlapping of processes. However, as a result of the synchronicity of the announcement of the Liberal Arts initiative with our visit to campus, we immediately began to think of the advantage of both processes running concurrently with different emphases, methods of organization, and with a different outcome in the strategic planning process.

B. The Historical Pattern of Funding in Pathway B

a. As the White Paper reports, "several funding streams exist for supporting Pathway B Research at the University of Cincinnati: the University Research Council, the Charles Phelps Taft Memorial Endowment Fund and the Taft Research Center, and the Semple Fund endowed to the Classics Department; and funding to support teaching and professional development (often integral to research) may be sought from the Faculty Development Council (FDC), the UC International Office, and UC Forward. Most of the

research funds available to support Pathway B Research are quite modest. For example, the average annual funds awarded to Taft faculty are typically less than $3,000 (unless the faculty member is a fellowship recipient in a given year); and the overwhelming majority of the Taft Fund is dedicated to support student (graduate and undergraduate) research" ("Pathway B Research: A White Paper on Research in the Arts, Humanities, and Social Sciences," p. 3). With regard to the research funding available through the FDC, however, we have noted that the total funding between 2005 and 2013 has declined by approximately $257,000.00 dollars, from $600,909.00 in 2005 to its current level of $342,500.00 dollars. (Here, we might also speculate that the FDC funds both Path A and Path B research, including graduate and undergraduate research endeavors, and so the actual funding available to faculty in Path B will be a smaller percentage overall.)

b. Aside from funding from endowment and gifts, funding for research in Path B has not historically depended upon external sources. Here, external sources are often hierarchically valued, where Federal Research Expenditures are highest. However, this does not merit the term "unfunded research" in comparison with research in science and technology, for example, where there is a direct investment by government, corporate, state and local enterprises—and where there is also the possibility of revenue sharing and other motivations for partnering with university research priorities. These motives are clearly present in the identified areas of research strength in the Path A strategic planning, such as Information Science, Environment, Sensing, Health, and Manufacturing & Services. It is also important to acknowledge that Path A funding is not all external, and takes investment (labs, equipment, faculty, students, etc. for external funding success as well).

Having no external or fiduciary stimulus, Path B research has traditionally depended on internal sources of funding in order to serve and enhance the educational and academic missions of the research university, to maintain and enhance the competitive profile of the university nationally, and thus, to produce "reputational capital" that will directly benefit the university and its various constituencies (from students obtaining degrees to faculty obtaining competitive research grants), as well as the various forms of "social capital" that a thriving university generates both for and within its immediate environments. In other words, there is an implicit, but often unacknowledged, symbiotic relationship between the success of Path A research and the strength and vitality of research located under Path B, a relationship that is often assumed as a given, or based upon anecdotal and traditional metrics that highlight a few successful departments and faculty that have produced notoriety, and function as a synecdoche of the whole, or the sails of the ship.

Accordingly, during our conversations with many different constituencies, from faculty to administration, we noted a consensus with regard to the most successful programs and departments associated with the disciplines of the Humanities & Social Sciences, as well as in Architecture and Urban Design; however, the picture of the total research taking place in the

surrounding disciplines and departments, and a vast majority of the faculty, remained somewhat invisible (at least, from our cursory viewpoint). From this perspective, several questions occurred to us regarding whether the organization of research into pathways that were often defined "funded vs. unfunded" research, or according to historical metrics of "strength vs. weakness" in assessing the distribution of disciplinary and faculty value in terms of research profile, will yield a strategic vision that is matched not only to the past or the present, but also to the changing future of the university. Here, we see three overall questions that need to be considered in organizing the research product according to these three pathways:

- How will the values and metrics for research in Path B be determined in an overall and comprehensive vision of the total research product of UC? Here, we see a unique opportunity to set up parallel, not unequal, system of values between different research enterprises. This would include but not be limited to funding, awards, publications, and citations of creative work or scholarship.
- Is there a consistent framework for research support and administrative representation for each pathway in the current structures of the University, or is there a need for new structures to be put into place to reinforce a comprehensive vision and equality between pathways, especially when there is historically the perception of inequality in research and funding priorities?

Addressing the second point, in our meetings with faculty and Directors, we noted a tendency to envisage this new structure in terms of the current administrative organization: as the creation of an Associate Dean for Research in Pathway B who could consequently "sit at the table" with other senior level administrators, and who would be charged with advocating for the funding priorities in this area. We were concerned that such a structure would only serve to reinforce current distributions and rationales, would be viewed negatively by Deans and Directors as "competitive" and potentially an encroachment upon their traditional role as the principal advocates for their divisions and programs, and; finally, as a potentially expensive and not cost-efficient solution that would drain potential sources of funding that could be better spent on faculty research. In our recommendations below, we will propose an alternative model of engagement involving the faculty councils or working groups already set up for each pathway; however, before this, we might suggest that senior administration and Deans recognize this historical perception of administrative decision-making and attempt to address this in the transition to the new administrative culture of the University of Cincinnati under President Santa Ono's leadership.

C. The Organization and Process of the Three Pathways

In this section, we will turn to the organization of the three Pathways themselves, with emphasis on creating parallel (i.e., equal) structures, schedules, and organizational steps in the strategic planning process. As noted above, this process has been designed along three primary pathways

including: Pathway A – Research in Health, the Sciences and Engineering (Traditionally Sponsored Research Efforts); Pathway B – Research/Scholarship in the Arts, Humanities, Law and Social Sciences; and Pathway C – Industry Partnerships, Commercialization, Workforce Development and the Role of the University in Community economic development.

We do understand that the perception of a schema based on "funded vs. unfunded" research causes some concern with constituents of Pathway B, given that an automatic perception of hierarchy associated with the historical association of externally funded research in Pathway A. It is significant that Dr. Ball is building a larger research structure that enhances the normative and aspirational Association of American Universities (AAU) framework most closely aligned (perhaps erroneously) with Pathway A. "The Association of American Universities (AAU) is a nonprofit 501(c)(3) organization of 62 leading public and private research universities in the United States and Canada. The AAU focuses on issues that are important to research-intensive universities, such as funding for research, research policy issues, and graduate and undergraduate education.

In this regard, AAU metrics are one way of measuring outcome, and it is important to remark that the AAU values most highly federal research expenditures. However, National Academies Memberships, Faculty Awards, Fellowships, and Memberships, and Citations - all of which are staples of Pathway B research - are valued as well. A comprehensive university will include all of these as metrics. This is part of "reputational capital." Pathway B can be as successful in achieving these accolades and indicators. In addition, with regard to Pathway C, the AAU Phase II Indicators include Industry, State, local and USDA research expenditures; although Phase II indicators may carry less value, they are part of distinguishing the total research product of the university.

Nevertheless, the AAU establishes a set of standards; they do not create a vision or mission for the university. The Office for Research is presenting an understanding that research is an ecological system, which includes the independent researcher, the collaborative unit, and multiple kinds of practices. In other words, we believe that Dr. Ball has installed a much more robust model, based on an open ecosystem of research support and accolades where three pathways and their strengths can co-exist and overlap. All of these need to be supported, given that no one can predict best future practices; therefore, a strong commitment to "hybridity" in its multiple forms and senses will create a more resilient network in all three Pathways, given that the reputational capital of a comprehensive university is part of the institution's eligibility and competitiveness at a national level.

Here, we briefly list five structural elements that can be employed to reinforce coherence and equality in the strategic planning process by organizing all Pathways in a parallel manner:

1) Mirroring Structures of Organization and Planning: Set up parallel processes for planning and employ the same schedule in all strategic planning steps.

2) Faculty Councils: We recommend permanently establishing faculty councils for each Pathway according to some consensual process approved by the stake-holders, and; that representatives of the respective councils meet equally with VP Research to coordinate recommendations and implementation of strategic planning for each Pathway.

3) Inter-Connectivity and Knowledge Brokering: Research initiatives and priorities should be transparent and communicated between the different faculty councils. This will provide opportunity for the creative association of research interests when possible to produce the effect of "hybridity" noted above. For example, there are various new fields of inquiry associated with Pathway B research that could contribute to the listed areas of focus in Pathway A (e.g., "sensing" and "digital humanities"), as well as the very large, complex and interdisciplinary problems (e.g. "health" and "medical humanities").

4) Maintain clarity among the research initiatives and set up models for developing new sources of revenue. In particular, Pathway B Research needs to have diversified portfolios of funding, including sources of internal funding and resources for development of sustainable business models. There is also an opportunity to leverage existing resources. This will require communication amongst leaders supervising those funds (noted in Section B.a.).

5) Support for all Pathways must be clearly advocated and supported by President Ono in collaboration with the VP for Research, Provost Davenport and the Deans.

6) Finally, in all stages, there needs to be constant communication between the VP for Research and the Deans, as well as some additional funds available to Schools and Divisions to implement strategic hiring, staffing, technology transfer and institutional support.

This is a unique opportunity to develop University of Cincinnati's profile as a comprehensive research university. By implementing strategies for support and communication for all Pathways with a clear research mandate for cultural, technical, aesthetic and social impact, the combination of Pathways can lead to increased reputational and intellectual capital.

GENERAL SUMMARY OF RECOMMENDATIONS:

Objective: To develop clear strategies of support and communication in all Pathways with an additional mandate in Pathway B for cultural, technical, aesthetic and social impact, as well as increased reputational and intellectual capital that serves the community, the city, and the state.

a. Confirm to all constituencies an overall goal to be a comprehensive research university
b. Follow Mission of University as being integral to defined priorities of strategic planning
c. Establish that combining Pathways A plus B plus C sets a clear direction for success and to be competitive
   o Build a common identity around incorporation (These exist in universities such Syracuse: Scholarship in Action; the Oregon Model – integration)
d. Establish equivalent value for Pathways A, B, C
e. Set up opportunities for overlap in Pathways A, B, C

f. Establish structural frameworks that allow parallel success.
   o For example, Pathway B to create similar structure for goals, implementation, and measurement of success to Pathways A, C
   o Implement that a faculty member from Pathway B must be on Pathway A & C working groups (e.g. faculty who understands melding of A and B as relevant).
g. Invest in finding external support for Pathway B research.
h. Acknowledge that Path A funding is not all external, and requires internal investment (labs, equipment, faculty, students, etc.)
i. Leverage existing resources (e.g. Taft fund) in a much more focused way.
j. Focus outcomes of Pathway B research on development of reputational and intellectual capital
   o Aspire to strategic 'bests' in the city, state, and world
   o Implement strategies for achieving goals
   o Include a research mandate that embraces cultural, aesthetic, and social impact
k. Build strategic professional, industry, government, NGO, etc. partnerships
l. See complex problems that require all Pathways as partners/exemplars:
   o Big data
   o Health
   o Water
   o Sustainability
m. Finally, leadership at all levels must be invested in process and clear about their role in planning and implementation.
   o We encourage involvement by College Deans with the structure established by VPR Ball where they are fully vested in the process.
   o Specific measures of success must be built into P and T guidelines for all pathways.
   o Develop new methods of assessing reputational capital in Pathway B.

APPENDIX B

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SUPPORTING OUR TRANSFORMATION – THE THIRD CENTURY
PATHWAY B – ARTS, HUMANITIES, AND SOCIAL SCIENCES RESEARCH GROUP

EXTERNAL REVIEW
AUGUST 25 – 27, 2013

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Flight Itinerary:

United Airlines	Flight Confirmation: NR6XW4			
Sun 25 AUG	5892	LV EWR 5:26 PM	AR CVG 7:38 PM
Tue 27 AUG	3688	LV CVG 4:51 PM	AR DEN 5:54 PM

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EXTERNAL REVIEW AGENDA
AUGUST 25-27, 2013

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Sunday, August 25, 2013	
Monday, August 26, 2013	
8:00am – 9:30am The Clifton House Bed & Breakfast (private dining room)	Breakfast Meeting: **William Ball**, Vice President for Research; **Adrian Parr**, Chair of Taft Faculty and Department of Sociology & School of Architecture & Interior Design; **Jana Braziel**, Professor of Africana Studies – McMicken College of Arts & Sciences
9:30am – 10:00am Travel from The Clifton House to Van Wormer Hall	Jana Braziel will transport Gregg and Frances from The Clifton House to Van Wormer

10:00am – 11:00am 220 Van Womer Hall	Meeting with the Deans: **David Szymanski**, Dean of the Lindner College of Business; **Peter Landgren**, Dean of College-Conservatory of Music; **Larry Johnson**, Dean of the College of Education, Criminal Justice and Human Services; **Xuemao Wang**, Dean of Libraries; **Tara Smith** (representing Ron Jackson), Associate Dean for McMicken College of Arts and Sciences; **Craig Vogel** (representing Robert Probst), Associate Dean for Design, Architecture, Art and Planning
11:00 am – 12:00pm 220 Van Wormer Hall	Meeting with Provost and Vice Provosts: **Beverly Davenport**, Senior Vice President for Academic Affairs and Provost; **Kristi Nelson**, Senior Vice Provost for Academic Planning and Professor of Art History; **Gisela (Gigi) Escoe**, Vice Provost for Assessment & Student Learning; **Robin Martin**, Associate Provost for Diversity & Inclusion; **Bob Zierolf**, Interim Vice Provost and Dean, Graduate School; **Kathy Qualls**, Senior Vice Provost for Academic Finance and Administration
12:00pm – 12:30pm Travel from Van Wormer to CCM	Short break and then Bob Zierolf will escort Gregg and Frances travel to CCM Baur Room
12:30pm – 2:30pm Baur Room at CCM	Meeting with Pathway B Research Group: **Bill Ball**; **Jana Braziel**; **Adrian Parr**; **Elaine Hollensbe**, Associate Editor, Academy of Management Journal & Associate Professor & Doctoral Program Coordinator; **David Stradling**, Department of History; **Kate Bonansinga**, Director of School of Art; **Bruce McClung**, Associate Professor of Musicology; **Jennifer Krivickas**, Head of the University of Cincinnati's The Robert A. Deshon& Karl J. Schlachter Library for Design, Architecture, Art, and Planning; **Frank Russell**, Director of the University of Cincinnati Community Design Center and the Niehoff Urban Studio; **Bob Zierolf**
2:30pm – 2:25pm CCM Starbucks	Coffee Break and Discussion: Frances Bronet and Gregg Lambert
3:25pm – 3:30pm Travel from Starbucks to Edwards One	Sean Keating will escort Frances and Gregg to the Taft Research Center
3:30pm – 4:30pm Taft Research Center 1110 Edwards One	Meeting with Heads of Centers and Other Faculty: **Adrian Par**r, Taft Research Center; **Richard Harknett**, Head of Department of Political Science; **Craig Vogel**, Head of Center for Design Research and Innovation; **Gila Safran Naveh**, Professor of Judaic Studies & Comparative Literature and Department Head of Judaic Studies; **Erynn Masi de Casanova**, Assistant Professor of Sociology; **Linda Dunseath**, Executive Director of the Live Well Collaborative; **Emily Houh**, Co-Director, Center for Race, Gender, and Social Justice; **Kristin Kalsem**, Co-Director, Center for Race, Gender, and Social Justice; **Willard Sunderland**, Department Head- A&S History; **Frank Russell**

4:30pm – 5:00pm Taft Research Center 1110 Edwards One	Break before The Taft Research Center Opening
5:00pm – 6:30pm Taft Research Center	Taft Center Opening: **Beverly Davenport**; **Robert Probst**, Dean of Design, Art, Architecture and Planning; **William Ball**; **Adrian Parr**; **Jana Braziel**
6:30pm – 7:00pm Travel from event to dinner	Adrian will drive Frances and Gregg to dinner
7:00pm – 8:30pm Jean Robert's Table 713 Vine Street Cincinnati, Ohio 45202	Dinner: **Beverly Davenport**; **Robert Probst**; **Peter Landgren**, Dean of the College-Conservatory of Music; **William Ball**; **Adrian Parr**; **Jana Braziel**
Tuesday, August 27, 2013	
7:45am – 8:00am Travel from The Clifton House to University Hall	Travel to University Hall: Bill Ball will pick up Frances and Gregg and transport them to University Hall
8:00am – 12:30 pm 504 University Hall	Closing discussions regarding report to be submitted: Frances and Gregg (Breakfast provided)
12:00pm – 1:00pm Caminetto at the Kingsgate Marriott	Lunch: Frances; Gregg; Bill Ball; Raj Mehta, Vice Provost for International Affairs and Director, University Honors Program *Please note, a few additional meetings were set up
1:00pm – 3:00pm 504 University Hall	Final discussion regarding report: Frances and Gregg
3:00pm The Cincinnati Airport	Executive Transportation will pick up Frances Bronet and Gregg Lambert from University Hall and take them to the airport to catch flights out at 4:50pm

PATHWAY C

Economic Engagement and Commercialization

COMMITTEE MEMBERS
UC:
Dorothy Air, co-chair
Christopher Lindsell
Steven Doehler
Bill Heineman
Mark Schulz
Jason Heikenfeld
Stephen Samuels (in Julie Heath's absence)
Gigi Escoe
Kettil Cedercreutz
Drew Boyd
Tom Dalziel

Community/Industry:
Nick Nicolaides, P&G, co-chair
Alan Vicory, Confluence Water Cluster
Gary Lindgren, CBC
Gary Conley, TechSolve
Rick Michelman, Michelman
Mike Hooven, Atricure,
Tim Schigel, Cintrifuse
Michael Flood, IBM
Adam Singer, Chamber
Mark Skinner, SSTI
Mark Collar, Third Frontier
Bob Coy, CincyTech
Wael Safi, P&G
Sara Adams Anderson, Cintrifuse

Supporting Our Transformation: The Third Century
Pathway C: Economic Engagement and Commercialization
DRAFT Recommendations and Implementation Plan

BACKGROUND

Drivers for Pathway C

- Becoming a benchmark "Economically Engaged and Entrepreneurial University" is a priority for UC
    - Evidence includes:
        - Inclusion in the 2019 Master Plan and previous UC/21 Strategic Plan
        - Carnegie designations for "Curricular Engagement" and "Outreach and Partnerships"
        - Resource investments in community planning, real estate enhancement, workforce development partnerships, product development, community service, health initiatives, industry collaborations and sustainability initiatives.
        - APLU Top Award for "Innovation and Economic Prosperity" initiatives

- This choice is driven by
    - Increasing public expectations for universities as economic drivers across the country
    - Federal funding agencies' expectations to translate innovation into societal benefit
    - State-wide and regional priority in Ohio (OBR Task Force and CBC Study) for commercialization of university innovation and relevant workforce talent

UC's Current Status:

UC has been proactive in creating its Economic Engagement Agenda and in launching new initiatives to move the University forward as a fully engaged University in the regional ecosystem. Examples of initiatives include: establishment of the UC Technology Commercialization Accelerator, UCRI, and UC Forward, as well as participation in many major collaborations, such as the Confluence Water Cluster.

Our growth in this area has been a clearly progressive one, but the University's total potential has yet to be realized. As the University plans for future growth, however, UC's newly launched initiatives and achievements now form a solid foundation for taking our economic engagement to the next level and truly leveraging our capabilities as an essential component of the region's economy and as a leader among universities.

The recommendations that follow for Pathway C are strategically focused to further enable and scale what we have started and to maximize the full range of university potential within the regional ecosystem.

PATHWAY C PROCESS:

I. Team:

A team of both internal and external members, which included faculty, administration, industry, economic development, and investors, conducted the work leading to Pathway C recommendations.

II. Self-Study Approach to Determine Needs and Recommendations:

Qualitative and quantitative data from the following sources were used as the basis for Pathway C recommendations:

1) CICEP Internal Assessment Tool (developed by APLU's Commission on Innovation and Economic Prosperity) for a standardized assessment of UC's perceived economic engagement among faculty and administrative groups
2) Follow-on UC Internal Assessment Questionnaire to assess knowledge of specific UC program initiatives
3) 2011 Regional Innovation Task Force Initiative for assessing UC's role and perceived performance by external stakeholders in the region
4) July 2013 UC Economic Engagement Retreat to drill deeper into issues and potential solutions.

III. Problem Definition Based on Assessment Outcomes

Significant input was sought from the Pathway C Team in assessing the data from the Self-Assessment process. The results indicated a high degree of congruence across all assessment measures. All data pointed to the same three inter-related areas for growth and improvement needed to significantly enhance our ability to bring economic engagement and commercialization outcomes to the next level of achievement. The three areas are:

- Developing mechanisms for valuing a stronger internal culture of economic engagement;
- Establishing an infrastructure to guide, facilitate and support economic engagement and commercialization activity;
- Establishing a communication network that supports economic engagement from both marketing and educational perspectives.

IV. Stakeholder Value Propositions Underpinning Recommendations

UC's commercialization activity exists within an ecosystem of stakeholder groups; therefore, recommendations that addressed the needs of stakeholder groups were also factored into the final plan:

- **University/Colleges:** "Expanded opportunities, increased prestige, and preservation/attraction talent."
- **Faculty:** "Transformation of intellectual capital/technology into societal improvement and new resources and prestige."
- **Students:** "Experiential learning to be "next gen" entrepreneurs, and have a competitive workforce advantage."

- **Investors:** "Free, unfettered access to resources, expertise and technology in which to invest."
- **Industry:** "Access to IP, physical resources and expertise and increased potential for co-creation and commercialization of new technologies."
- **Community:** "Job growth and wealth creation needed for a vibrant, sustainable community."

V. Existing Best Practices Underpinning Recommendations:

Recommendations are based on existing best practices among benchmark universities. Institutions reviewed included MIT, Arizona State University, Purdue University, University of Kentucky, Carnegie Mellon, University of Utah, Washington University, Penn State, University of Michigan, Ohio State University and Colorado University. While each has unique approaches, ***two overarching themes emerged from the analysis of these universities' success: 1) intentionality and 2) commercialization infrastructure investments***. These two themes were demonstrated across all or a substantial number of the universities through the following types of initiatives.

- Top leadership support
- Dedicated, centralized infrastructure for commercialization
- University gap funds, such as early stage technology development grants and seed funds
- Commercialization aggregated at a physical location for increased visibility
- Integration of tech transfer office, accelerators, incubators, etc. to provide a one-stop, commercialization function
- Interdisciplinary cooperation and leveraging of unique university centers, institutes and expertise
- Participation of faculty, staff and students to create a broad-based culture of entrepreneurship
- High level reporting line for Office of Commercialization
- High level external advisory boards
- Use of alumni network for both monetary and physical resources
- Proactive engagement with corporate/industry partners through corporate visits, part-time entrepreneurial residencies, etc. to encourage networking and cross pollination.
- Educational initiatives for prospective faculty and student entrepreneurs
- Facilitative conflict of interest policies

PATHWAY C RECOMMENDATIONS

OVER-ARCHING GOAL:
To develop an entrepreneurial ecosystem that expands opportunities for all of UC's stakeholder groups and provides support for the commercialization of a wide range of intellectual property throughout the university.

RECOMMENDATIONS:
Based upon assessment data, stakeholder needs and identified best practices, the following three areas of recommendations are proposed:

<u>Area 1:</u>   Culture
Issues:
A culture that embraces economic engagement is core to success. Core issues included:
- Current Reappointment, Promotion and Tenure (RPT) criteria align with traditional values of teaching, research/scholarship and service and do not recognize and reward economic engagement.
- Changing RPT criteria is complicated as decisions occur at the faculty/department level, making uniform incorporation of economic engagement/commercialization into RPT guidelines challenging.
- Community engagement and commercialization is not universally understood by faculty, resulting in limited understanding of the opportunity and ways to participate.

Solutions:
GOAL 1: Promote, value and reward community engagement to change culture

- **Objective 1.1 <u>Leadership Stance</u>**
  Establish a leadership position of economic engagement as a recognized value of the University

  ➢ Assemble a high level team charged with developing a leadership position and plan for disseminating the position

  ➢ Incorporate into Vision and Mission Statement

- **Objective 1.2   <u>RPT Recognition and Reward Systems</u>**
  Expand RPT criteria to include community (economic and/or social) engagement and commercialization as a valued area of contribution and develop additional reward mechanisms for faculty achievements

  ➢ Work with Faculty Senate leadership to develop a set of agreed upon principles, provide channels for faculty input and to formulate a final set of reward/incentiverecommendations

- > Seek additional input into expanded RPT criteria and other potential incentives from Deans and other high level administrators for a balanced set of recommendations

- > Provide informational venues to insure understanding of the recommendations, their benefits and position among the other traditional RPT criteria

- **Objective 1.3 Educational Initiatives**
  Increase ability to lead and/or participate in entrepreneurial initiatives through educational programs that provide background knowledge and skills needed to succeed

  - > Establish a multi-pronged educational program targeted at different levels of need
    - > General Orientation Session on a semi-annual basis to stimulate interest and provide basic information regarding Intellectual property and commercialization processes
    - > Commercialization Informational Series Sessions to assist faculty in understanding commercialization processes and ways to engage
    - > Entrepreneurial Boot Camp to work with faculty with early stage technologies and an interest in taking them forward to commercialization

  - > Assemble team of experts for delivering program (i.e., technology transfer, Accelerator Entrepreneurs in Residence, College of Business, College of Law, and external experts from industry, investors, patent law, etc.

  - > Market the availability of the program through large broadcasting methods and individual outreach

  - > Showcase program successes to stimulate additional interest

- **Objective 1.4 Expanded Pathways for Participation**
  Create novel pathways for faculty to engage in entrepreneurial activities

  - > Establish a team of faculty and industry representatives to develop a framework for novel, joint opportunities, such as joint university/industry appointments, University/Industry Exchanges, topic-specific university/industry forums

  - > Establish "Tiger Team" to serve as liaisons between Centers of Excellence/Departments and both Accelerator and UCRI to identify opportunities with commercial and/or industry-sponsored research potential

  - > Create a University-Community Engagement Council charged with identifying community issues and expertise available to address those issues and to facilitate connections to relevant networks

  - > Establish a "convening process" to bring together interdisciplinary teams, augmented by additional expertise, to take newly identified opportunities forward

Area 2: Commercialization and Engagement Infrastructure and Resources

Issues:

There is a need for a comprehensive university-wide infrastructure to guide, facilitate and support the Innovation and Engagement missions of the University. Core issues include:

- Limited focus on the front end of the Innovation Process (as early as grants) to increase potential for commercialization
- Fragmented and under-powered University commercialization infrastructure
- Poorly understood pathways for commercialization
- Non-facilitative policies and procedures
- Lack of centralized and easily searchable repository of university resources to facilitate partnerships, collaborations and new opportunity creation
- Lack of "single point of contact" to assist external stakeholders in navigating the university system and connecting with resources

Solutions:

Goal 2: Establish an integrated and readily understood campus-wide infrastructure to support and grow UC's economic engagement impact across all opportunity areas

University Infrastructure for Federal and State Grant-based Intellectual Property

- **Objective 2.1 Change the Model (Figure 1.)**
  Create an infrastructure focused on expanding opportunities and supporting commercialization of all types of Intellectual Property

Pathways for Technology Commercialization
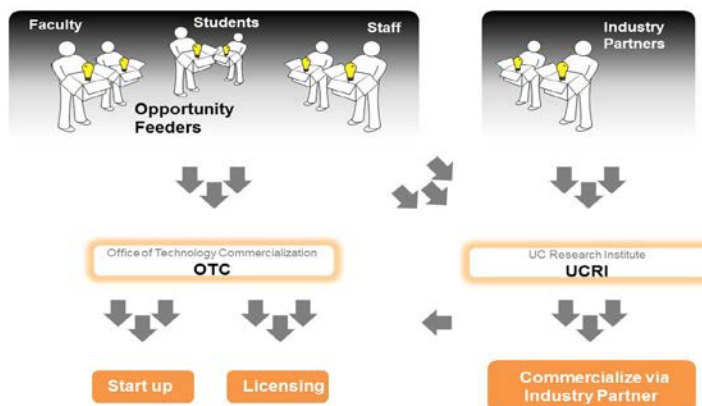
Figure 1.

- Re-mission current Intellectual Property Office into being a Technology Commercialization Accelerator with fully integrated vs. parallel functions (Figure 2.)
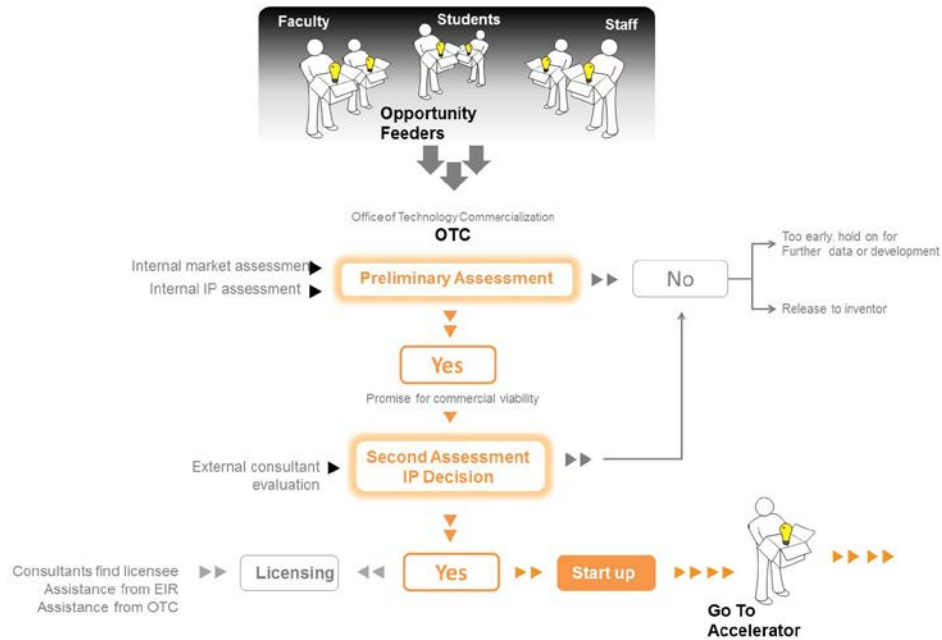

Figure 2.

- Align staffing to execute on commercialization mission
    - Expand skill set and capacity of tech transfer staff through new hires and training of current staff to execute on new models

    - Increase functionality and expand capabilities of the new Accelerator Model through
        i. addition of patent counsel
        ii. creation of external alliances/contractors for conducting due diligence, developing commercialization plans and marketing technologies with licensing potential
        iii. further integration of entrepreneurs-in-residence into overall functions of the Accelerator

- **Objective 2.2 Expand the Focus (Figure 3.)**
  Focus on all stages of the commercialization continuum in order to create a more robust pipeline of opportunities
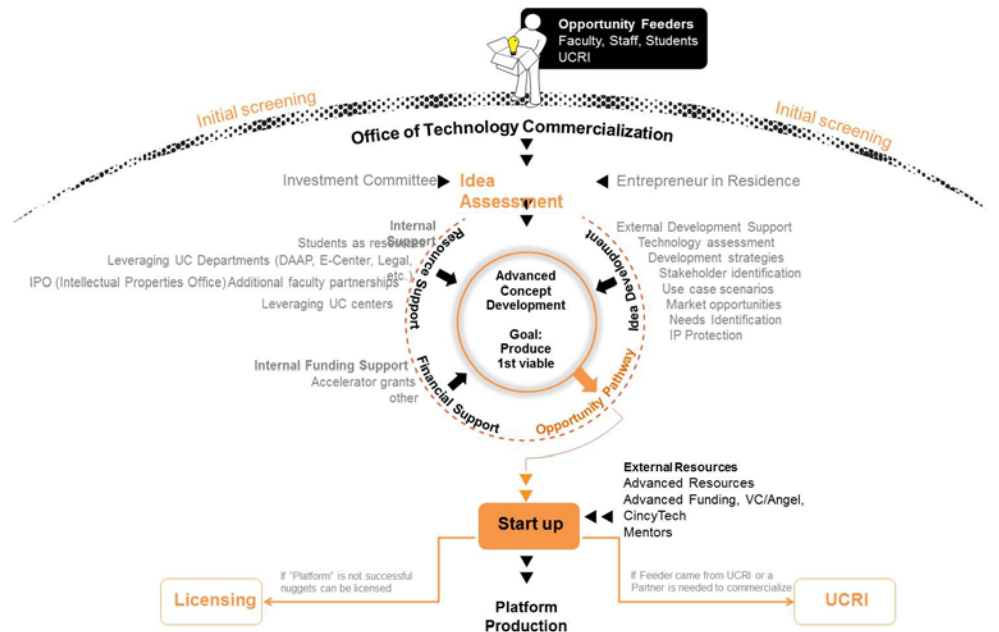
Figure 3.

- Adopt a broader vision for commercialization and when it begins
  - Assist in identifying grant opportunities that have commercialization potential
  - Provide grant advising related to incorporating relevant commercialization considerations that might differentiate proposals from the competition
  - Assist in identifying collaborators that add commercialization value

- Follow progress of projects and provide continued advising to strengthen IP position and assist in transitioning into Accelerator projects

- **Objective 2.3 Align and Provide Resources to Support Full Range of Opportunities**
  - Expand Accelerator resource commitments sufficient to meet the needs of the overall university – including students, i.e., funding for increased Entrepreneurs-in-Residence services and commercialization grants

  - Create an alumni network for expanded industry connections, resources and mentoring

  - Establish a Seed Fund for investing in UC start-up company opportunities in order to develop start-up companies to increase potential for success vs. spinning out shell companies

- **Objective 2.4 Make it Easy!**
  Provide universal resources and processes that facilitate entrepreneurial involvement across all stages of the innovation and commercialization continuum

  - Develop a resource guide that lays out an understandable framework for commercialization of all types of intellectual property and clear pathways for

pursuing commercialization related to federally sponsored vs. industry sponsored research

- Provide support mechanisms to address needs earlier in the innovation process (including grant submissions) to set the stage for commercialization outcomes
- Provide navigational tools for identifying and accessing resources (Resource Directory)
- Create a "Welcome Mat" to increase visibility and triage internal and external inquiries to appropriate resource connections
- Align policies and procedures to support and facilitate the commercialization

- **Objective 2.5 Transform the University into a Living Commercialization Incubator** **Transition the university into a dispersed, living incubator by identifying and leveraging all resources relevant to commercialization activities**
    - Create policies and processes for use of University resources by university start-ups as well as community start-ups/ small companies
    - Develop comprehensive inventory of available resources
    - Create the appropriate infrastructure to manage incubator functions, i.e., contracts, invoicing, compliance, tracking
    - Market opportunities

- **Objective 2.6 Leverage Commercialization activity as vehicle for Student Learning** **Create pathways for student participation in commercialization activities**
    - Establish an internship program for start-up companies
    - Deploy student teams to work on due diligence related to UC's technology commercialization opportunities
    - Expand Accelerator staffing and financial resources to support student start-up initiatives

Infrastructure for Industry and Non-traditional Intellectual Property Opportunities

Objective 2.7 Grow the UCRI Structure and functionality into a Sustainable Vehicle for Commercialization of non-federal and state funded intellectual property and non-traditional forms of intellectual property as well as increase the base of industry-sponsored research

- Engage industry partners through collaborative agreements whereby UC's background intellectual property will be commercialized in parallel with the newly developed foreground technology by the partner. Monetization occurs from the value contribution of both the background technology and joint development.

- Provide mechanisms for commercialization of non-traditional intellectual property, such as service and consulting opportunities

- Leverage State and Federal grants that focus on transitioning late technology readiness level (TRL) projects to the market via collaboration with industry partners.

- Coordination UCRI functions with University commercialization infrastructure for seamless processes, increased opportunities and ease for faculty participation

Area 3:   Strategic Economic Engagement Communication

Issues:
The University's role in engagement and as community resource lacks both internal and external visibility. Core issues included:

- Fragmented messaging related to economic engagement and commercialization
- Limited focus on use of communication as a vehicle for opening doorways for new opportunities, and conveying a unified brand expression of UC as a broadly recognized resource in building the community

Goal 3:
Establish Economic Engagement Strategic Communications Plan that becomes part of UC's Brand

- **Objective 3.1   Revise Communications Infrastructure**
  Create an infrastructure capable of identifying UC stories from across all colleges, establishing an engagement brand and increasing visibility of engagement to both internal and external stakeholders

  o **Strategy**
    1. Establish a Communications Board of PR representatives from each college tasked with :
       a. developing a unified concept for the University
       b. coordinating messaging across colleges
       c. developing strategies for increasing visibility of engagement and impact

- **Objective 3.2   Expand Strategy**
  Develop new media strategies focused specifically on engagement

  o **Strategies**
    1. Develop media releases focused entirely on engagement to celebrate successes and foster our culture of innovation and engagement
    2. Expand outreach efforts to get the message out
    3. Fully utilize social media outlets

UNIVERSITY OF CINCINNATI TABLE SUMMARY OF GROWTH AND IMPROVEMENT PLAN

GOAL 1: Promote, value and reward community engagement to change culture

Objectives	Actions	Timeline Assumes 7/1/14 Start of Plan	Resources	Indicator/ Measure of Success
Objective 1.1 Leaadership Stance **Establish economic engagement as recognized value of UC**	1) Establish leadership position for economic engagement as valued part of UC's Mission 2) Incorporate message into Vision/Mission statements	1) July 2014 2) August 2014	No financial resources require for 1.1 Support of IEPA leadership, deans, president, Cabinet and Trustees needed	Economic engagement position is communicated across all areas of the university
Objective 1.2 RPT Recognition **Expand RPT to include Engagement (social and economic) & Commercialization as valued contribution**	1) IEPA Teams to work with Faculty Senate, deans, and administration to develop RPT guidelines to include engagement in departmental, college and provost criteria 2) Provide informational venues to roll out	1) July - December 2014 2) January 2015 Information sessions	No financial resources required Commitment of supportive faculty; leadership essential	Near-term: increase in colleges including engagement in RPT criteria Long-term: ALL colleges include engagement in RPT Increased number of faculty participation/rewarded
Objective 1.3 Education **Increase knowledge of and skills for participating in entrepreneurial activities**	Initiate educational program to increase faculty interest and ability to participate in entrepreneurial activities • Tier 1 Program: Introductory series on opportunity identification, IP & pathways to commercialization	1) July 2014 launch of Tier 1 Program	$15,000 Part-time admin support Tier 1: No financial resources required. Led by Office of Entrepreneurial Affairs in partnership with Col of Business	Growing number of faculty participating in Tier 1 program Increased # disclosures Increased # of viable licensing opportunities

	• Tier 2 Program: Entrepreneurial Boot Camp for faculty with interest in pursuing technology commercialization(Model after NSF supported Cincinnati Creates Companies Program)	2) July 2014 launch	Tier 2 Program: No financial resources required. To be led by Office of Entrepreneurial Affairs and College of Business Pro bono external experts	Increased # faculty involved in economic engagement and commercialization (verified by Tech Transfer Office/RPT records) Increased Accelerator deal flow and # of executed licenses
Objective 1.4 **Establish Pathways** **Expansion of Pathways for Faculty entrepreneurial engagement**	1) Establish "Tiger Team" liaisons between internal and external entities (industry, Centers & Departments & Accelerator/UCRI) to identify commercialization opportunities and/or industry sponsored research 2) Initiate a Program for joint university/industry appointments 3) Initiate University/Industry Exchange Program to create joint learning opportunities and new opportunities Establish University – Community Engagement Council and convening process to identify opportunities and facilitate connectivity	1) July 2014 initiate "Tiger Team" 2) January 2015 Plan completed for new pathways 3) Same as 2) 4) September 2014	1) $50, 000 ($10,000 per Liaison) Entrepreneurial stipends for "Tiger Team Liaisons ($10,000 per Liaison) 2) No additional financial resources needed due to mutual exchange relationship 3) Same as No. 2	New opportunities identified by Tiger Team Growing # faculty participating in programs Increased # new university/industry opportunities from new programs

Goal 2: Establish a Campus-wide Infrastructure to Support and Grow UC's Economic Engagement Impact

Related Objectives	Actions	Timeline	Resources	Indicator/ Measure of Success
Objective 2.1 **Make it easy!** **Establish framework for commercialization activity and enabling tools**	1. Establish understandable framework for commercialization of all types of IP and clear pathways for faculty to follow 2. Provide navigational tools for identifying and accessing resources (Resource Directory 3. Establish Center for City as Front Door to University to facilitate collaborations and partnerships – Feature: Hot Topics – Working with UC 4. Align policies and procedures to support and facilitate commercialization	1) July 2014 2) *Completed* Directory Faculty Expertise; Complete Faculty Expertise Directory July 2014 for expanded Directory 3) January 2015 4) June 2015 Review completed; July 2015 Policy approvals	1) No financial resources needed 2) Seed funds were allocated as 1X funds from 2019 for initial development. $75,000 Additional financial support for Directory's ongoing expansion, refinements and IT maintenance and 3) $60,000 Salary Support for Center for City 4) No financial cost; leadership team needed from OGC and OTC	Short Term: Acceptance and positive feedback by administration and faculty Long Term: Increased interest in participating in economic engagement Faculty empowered to pursue entrepreneurial interests in alignment with new Policies and Procedures Increased # of Collaborations and Partnerships Positive feedback from external constituencies

Related Objectives	Actions	Timeline	Resources	Indicator/ Measure of Success
Objective 2.2 Enabling Infrastructure **Create a comprehensive and adequately resourced commercialization infrastructure to support the commercialization of University-based Intellectual Property and business engagement Subdivide into internal and external**	1) Re-frame OTC into Tech Commercialization Accelerator with focus on IP protections within context of commercialization outcomes 2) Expand skill set of tech transfer staff through new hires and training of current staff to execute on new models 3) Create external alliances to assist with needs that extend capabilities, as needed 4) Create an alumni network for industry connections, resources and mentoring 5) Establish a Seed Fund for investing in UC start-up company opportunities	July 2014 January 2015 New framework fully implemented On-going Alumni network development on-going Seed Fund – 1st Closing January 2015 2nd Closing July 2015	**Staff/funding requirements: (see detailed budget)** *Overall Operations*: Assoc. VP, 50% Admin Assistant *IP, deal flow, marketing and licensing functions* - Director, two senior technology managers, two patent attorneys, IP docket manager *Commercialization Functions:* 3 part-time EIRs, Student teams **Entrepreneur Grant Funding:** Continuation of 2019 Entrepreneurial Grants and Entrepreneurs in Residence and additional Third Frontier funding (plus match) Patents: New IP and maintenance of active patents **Seed Fund** $25,000 Funding for management fees of fund	Fully integrated one-stop resource for commercialization implemented Resources are sufficient to support the needs across the university (including student start-ups) Increased revenues generated Increased number of start-up companies better positioned to succeed Increased number of licensing deals

Related Objectives	Actions	Timeline	Resources	Indicator/Measure
Objective 2.5 **UC as Living Incubator** **Transition the university into a living incubator by identifying and leveraging all resources in commercialization activities**	1) Create policies and procedures that allow use of University resources by start-up companies and small companies 2) Market opportunities	January 2015 Draft of policies completed March 2014 approval Marketing ongoing	Office of Research, Entrepreneurial Affairs and Technology Commercialization, and General Counsel to draft	Co-location of entrepreneurial activity in alignment with policies Increase income generated by business deals utilizing University resources
Objective 2.6 **Student Pathways** **Create pathways for student participation in commercialization activities**	1) Establish an internship program for start-up companies 2) Deploy student teams to work on due diligence related to technology commercialization opportunities 3) Expand staffing and financial resources to support student start-up companies	July 2014 Launch of internship program April 2015 Student Accelerator Competition	Educational Program Co-led by Entrepreneurial Affairs and Technology Commercialization and College of Business Accelerator to lead Student Competition	Student teams deployed to start-up companies Student team competitions result in 6 funded Accelerator projects Student Ambassador Program for liaison between Accelerator and Faculty/Research Programs

Goal 3: Establish Economic Engagement Strategic Communications Plan that becomes part of UC's Brand

Related Objectives	Actions	Timeline	Resources	Indicator/ Measure of Success
Objective 3.1 Infrastructure Create vehicle increasing visibility of engagement to internal and external stakeholders	1) Establish a Communications Board of PR representatives from each college to develop unified concept to coordinate messaging across colleges and to develop strategies for increasing visibility of engagement and impact 2) Board to continue as the vehicle for promoting engagement	July 2014 Ongoing	No costs associated with Board members as already on salary $50,000 Funding for staff person to facilitate Board activities	Consistent messaging that contributes to the UC brand of major engagement Increased internal and external visibility of UC's resources, activities and impact Resulting new connections and opportunities
Objective 3.2 Strategies Fully utilize social media outlets	1. Increase marketing efforts re: engagement 2. Expand social medial initiatives	July 2014	$25,000 Costs for development of community impact e-newsletter/newsletter /events	Increased Internal and external visibility of UC's engagement and impact leading to new opportunities and partnerships