

# *Master Plan Milestones 2017*

## Four years into implementation

### **I. Purpose and Background**

The strategic plan for the College of Agriculture and Natural Resources, the *CANR Master Plan*, was finalized at the end of 2013 after thorough vetting and editing based on input from faculty, staff, students and stakeholders. It is a “living document”, meaning that it should be periodically revisited and updated over time. This document - *Master Plan Milestones 2017* – charts our progress toward implementing excellence in the college stemming from the *CANR Master Plan*.

### **II. Implementation Plan** (adapted from *Master Plan Milestones 2015*)

In 2013 as the *Master Plan* was drafted, we considered the “what” and “why” questions only; what type of a college do we aspire to be in the future and why? In 2014 as we entered the implementation phase, we tackled questions of “how” and “when”; how we will prioritize our goals to bring positive change to the college, and when will we begin working on each goal? A framework for implementation was adopted based on the book *The 4 Disciplines of Execution*, abbreviated “4DX” (McChesney, Covey and Huling. 2012. Free Press, ISBN 978-1-4516-2705-3). The four disciplines are:

- Focus on the wildly important
- Act on the lead measures
- Keep a compelling scoreboard
- Create a cadence of accountability

The first is the most important discipline – *focus*. Each unit leader was asked to declare one “wildly important goal”, or WIG, for their unit. The authors of 4DX contend that by focusing primarily on one goal, meaningful, visible progress can be made on the main issue facing the unit, as opposed to attempting to make some progress on multiple goals at once. In the latter case, strategic plans often fail. This does not mean that other goals are ignored, but simply that, at any given time, one goal is relentlessly pursued with a definite timeline for completion and measurable outcomes. When one WIG is completed, another is adopted and the process repeated. Monthly administrative team meetings are used as a forum for each unit leader to provide a WIG update to keep everyone aware of their progress (addressing the scorecard and accountability disciplines). The 2017 WIGs for each unit are provided in Appendix I of this document. The 4DX philosophy has been and will continue to be a key component of strategic goal implementation in the college.

**III. The Assanis administration and the *CANR Master Plan*.** Dennis Assanis became the 28<sup>th</sup> president of UD in June, 2016, and the first year of his administration has brought some fundamental changes to the University. Notably, he quickly established five strategic themes around which all of our activities and planning should align. The table below lists the themes and gives examples strategic alignment in CANR. This information was presented to the president and provost during 2017.

**Table 1. Strategic themes of President Assanis and recent examples of alignment in CANR.**

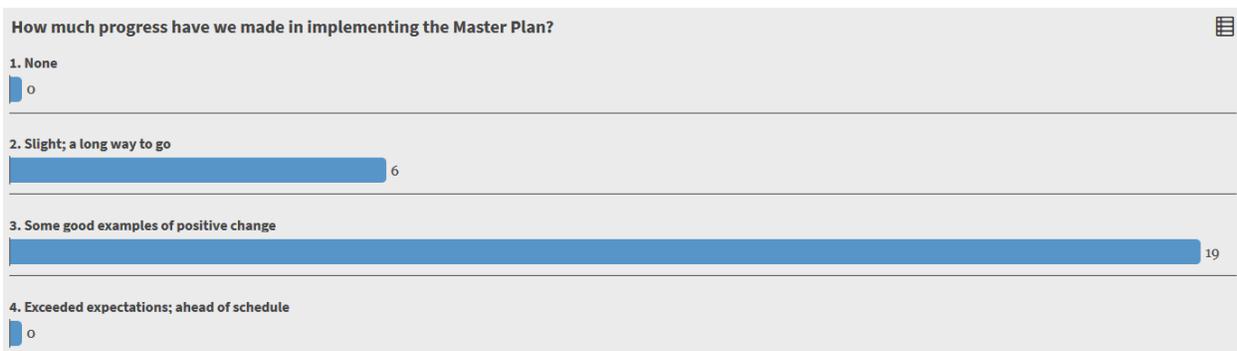
President Assanis' Themes	Examples of alignment in CANR
Enhancing the success of our students	<ul style="list-style-type: none"> <li>• Freshman retention is 90%+, well above national average</li> <li>• 4- and 6-year graduation rates were 74 and 83%, above the UD averages</li> <li>• Freshman yield is consistently ~3% higher than UD average</li> <li>• We place about 250 students per year (1/3 of undergrad enrollment) in high-impact learning experiences including study abroad, internships and undergraduate research</li> </ul>
Investing in our intellectual and physical capital	<ul style="list-style-type: none"> <li>• Strategic hiring in CANR is aligned with unique strengths</li> <li>• Two CANR faculty are placed in leadership development programs annually</li> <li>• CANR provides over \$225,000 per year in internal minigrants to foster excellence in teaching, research and extension</li> <li>• 2013 Master Plan calls for continuous reinvestment in physical infrastructure to minimize deferred maintenance; WorriLOW, Allen, Lasher and Insectary projects are examples of progress</li> </ul>
Strengthening interdisciplinary and global programs	<ul style="list-style-type: none"> <li>• International partnerships with U Lavras, Brazil; La Molina, Peru; Alliance for a Green Revolution in Africa, Kenya (AGRA); Catholic University of Cordoba, Argentina</li> <li>• Interdisciplinary graduate programs include joint PhD between APEC and Economics; Bioinformatics; Water Science &amp; Policy; Microbiology; Biogeochemistry; One Health; Data Sciences</li> <li>• Each academic department and Cooperative Extension has at least one international study abroad program</li> </ul>
Fostering a spirit of innovation and entrepreneurship	<ul style="list-style-type: none"> <li>• UDairy Creamery now has two locations, essentially doubling the number of student opportunities to innovate and learn-by-doing in a \$1 million/yr+ operation</li> <li>• Milk, honey, wool, plant and organically grown vegetables involve students and bring in more than \$500,000 per year</li> <li>• Grain sales from the Adams and Warrington Farms partially fund Carvel Center operations</li> </ul>
Inclusive excellence	<ul style="list-style-type: none"> <li>• The CANR Diversity Initiative funds the <i>Accelerate</i> retention program, the Summer Scholars “pipeline to grad school” program, and the MANRRS club (Minorities in Agriculture Natural resources and Related Sciences); funded at \$50,000/yr</li> <li>• The percentage of Underrepresented Minorities in the student body is up from 10 to 17% for undergraduates, and from 4 to 9% at the graduate level, since 2013</li> <li>• The percentage of female faculty in CANR has risen from 26% in 2010 to 37% in 2017</li> </ul>

Changes in the University budget model proposed by the Assanis administration could have a major impact on College operations. Established in 2010, UD's budget model (termed “RBB” or “Responsibility Based Budgeting”) was abandoned as of 30 June 2017. In FY18, UD is operating on an *ad hoc* basis until a

new budget model is created for FY19 and beyond. Despite shouldering a 2% cut to our state appropriations, CANR fared well in the FY18 budget appropriation process, and has the approximate level of resources that it had in FY17, our best year of the last five. For FY19 and beyond, UD will be moving toward a more centralized budget model, and planning for potential cuts to our centrally allocated budget is underway. Also, it is prudent to assume that state appropriations may be cut at an average rate of ~2% per year moving forward, as the State of Delaware appears to be entering a cycle of shortfalls. Thus increased extramural funding and associated cost recovery will be needed to fill budgetary voids for the programs funded through state appropriations, including the Agricultural Experiment Station, Carvel Research and Education Center, Cooperative Extension, Soil Testing, Delaware Biotechnology Institute and Poultry Disease Research. Philanthropic goals for the College should also be adjusted to address areas potentially vacated by cuts, particularly as we enter the public phase of the Capital Campaign in late 2017.

#### IV. *Master Plan* - Goals Progress Assessment

In August and September 2017, the CANR Administrative Team (unit leaders in the college) and faculty/staff in the college were polled on perceptions of strategic progress in the college and their responses were recorded:



**Figure 1. Poll results from faculty and staff at the September 5, 2017 Town Hall.**

As the data in Figure 1 show, most faculty/staff respondents felt that there have been “some good examples of positive change” during *Master Plan* implementation and cited items like increased fundraising, increased enrollment and progress on Worrilow Hall renovations as specific examples when queried. The data above were collected from faculty & staff during the September 5, 2017 Town Hall. At the August 23, 2017 retreat, the CANR Administrative Team responded to this poll similarly, with 82% selecting “some good examples of positive change”. The general agreement between the two groups is encouraging and suggests that most people feel that positive change has occurred over the past four years.

A. Teaching

Well before the *Master Plan* was written, the college was focused on growing and diversifying enrollment at both the undergraduate and graduate levels. With nearly two jobs for every graduate in agriculture and natural resource disciplines, we can and must do a better job of supplying society with workforce-ready graduates. Currently, the college has embarked on a “20 by 20” campaign – increasing enrollment and teaching activity 20% by 2020 (relative to FY16 levels). Table 2 provides a summary of progress.

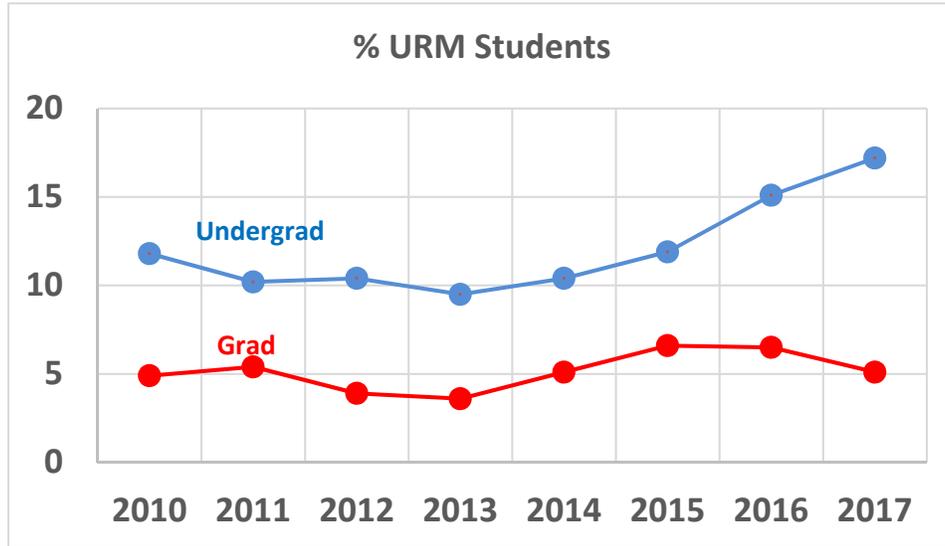
**Table 2. Trends in enrollment metrics (Headcount data are official, unduplicated 10<sup>th</sup>-day enrollments for fall semester; Source = UD Registrar. Incoming class size data are for the first day of class, fall semester).**

CANR enrollment metrics	FY12	FY13	FY14	FY15	FY16	FY17	FY18	% change from FY12
Incoming class size	158	163	189	178	168	175	215	36%
Undergraduate student credit hours taught	17,136	18,478	19,936	20,076	20,962	21,880	---	28%
Undergraduate headcount	702	702	729	777	759	767	829	18%
Graduate headcount	168	178	193	214	214	203	196	17%

Positive trends in enrollment have occurred since FY12. The incoming class size increased substantially, though the increase has been somewhat erratic with most of the gain coming in with the current year. Overall, UD exceeded its enrollment goals for FY18 and thus CANR was part of a campus-wide upward trend. Student Credit Hour production increased by 28%, greater than the rate of increase in undergraduate population, suggesting that students from outside of the college were being attracted to our courses. Graduate enrollment has fluctuated, appearing to have peaked in FY15 and FY16, but nevertheless is 14% higher than it was in FY12. The recent slight decline might be expected as retirements and faculty departures have exceeded new hires, and the number of faculty dropped from a high of 86 in 2012 to 77 in FY18. Overall, the enrollment trajectory is positive, and the total CANR student enrollment now exceeds 1000 for the first time since the 1970s.

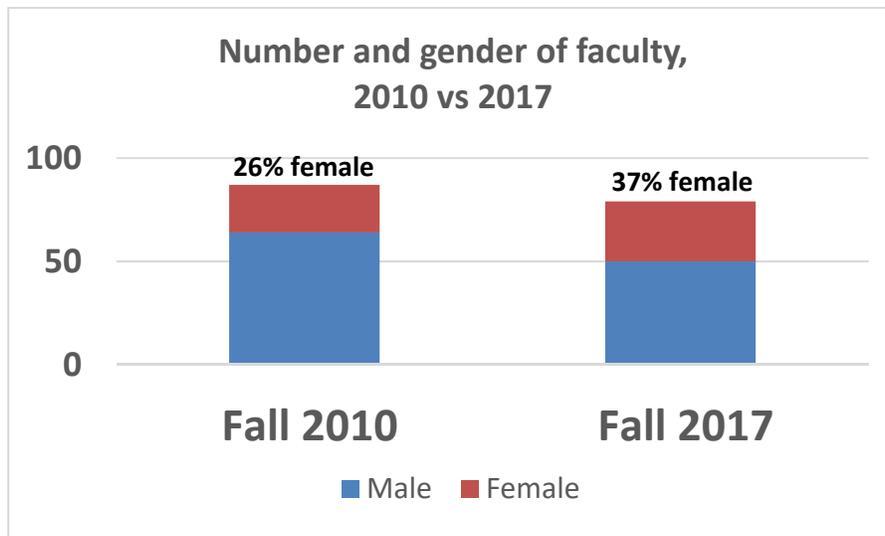
As illustrated in Figure 2, undergraduate and graduate student populations have become more racially diverse in recent years, more so at the undergraduate level than the graduate. This is a very positive trend, and partially reflects an increase in racial diversity in high school graduates in the northeast and mid-Atlantic regions. Our messaging, outreach and programming (e.g., *Accelerate*, Summer Scholars) have likely helped us improve in this area. For the Fall 2016 incoming class, we had the most racially

diverse group of any college at UD, suggesting that the trends are not simply reflective of overall UD trends, but somewhat unique in CANR.



**Figure 2. Historical trend of underrepresented minority student populations in the college. (URM = African American, Hispanic, Pacific Islander and Native American).**

Unfortunately, we have not seen an increase in racial diversity among faculty and staff since 2013. However, the percentage of female faculty members has increased from 26 to 37% over the last seven years, suggesting we are making progress in gender equity (Figure 3). In 2017, CANR began diversity training for all faculty and staff participating on search committees. Also, we instituted mandatory advertisement in outlets such as *Diverse* and *Hispanic Outlook* for open faculty positions in order to reach a more diverse pool of candidates.



**Figure 3. Overall faculty numbers have declined in CANR since 2010, while the percentage of female faculty has increased.**

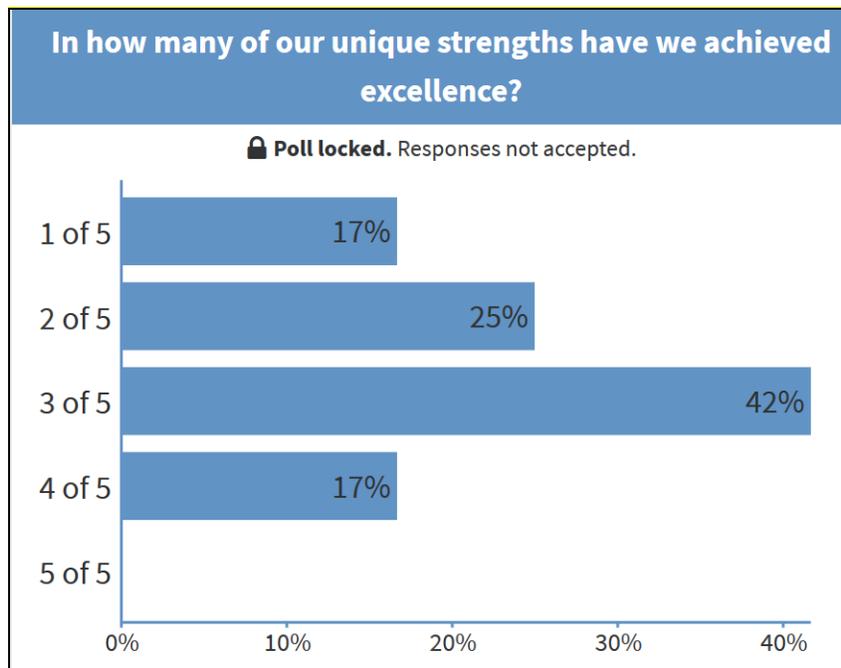
Several other goals related to growing and diversifying enrollment were defined in the *Master Plan* and Appendix II provides a brief overview of the progress in these areas.

## B. Research

Historically, research has been strong in the college and continues to increase in both quantity and quality. Presently, the highest proportion of workload of CANR faculty is dedicated to research - 47% - with 36% in teaching and 15% in Extension/Service. To underscore our commitment to selective excellence in the *Master Plan*, we defined five unique strengths in research, around which we will maintain or build programs:

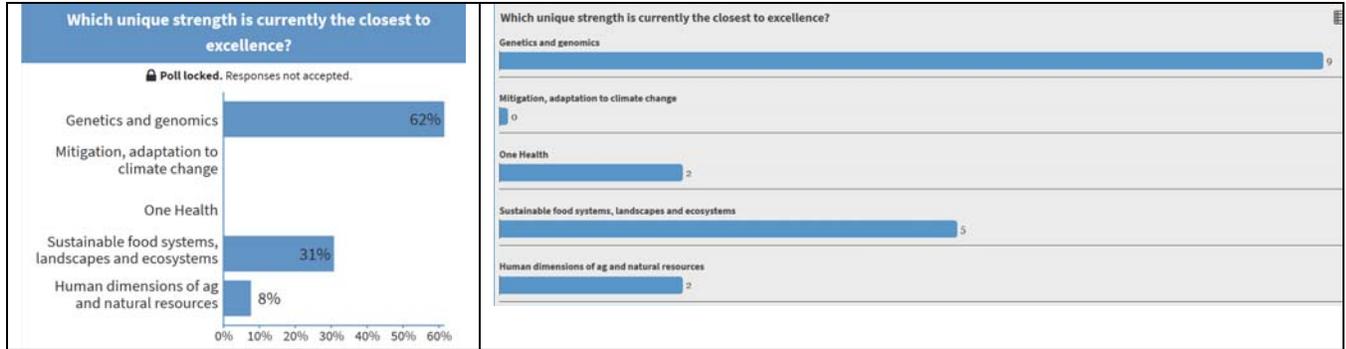
1. Genetics and genomics
2. Mitigation, adaptation to climate change
3. “One Health”, interrelationships in the health of humans, animals, plants and ecosystems
4. Sustainable food systems, landscapes and ecosystems
5. Human dimensions of agriculture and natural resources

To assess progress toward achieving excellence in the five unique strengths, the CANR Administrative Team and the faculty/staff in the college were queried. Forty-two percent of the administrative team felt that we had achieved excellence in three of the five areas (Figure 4), which is down from 75% two years ago. One quarter of the CANR Administrative Team felt that we had achieved excellence in two of five areas, and this was the most common response from the faculty/staff group. Two years ago, the faculty/staff group felt that we had achieved excellence in only one of five areas, indicating an improvement in perception over time.



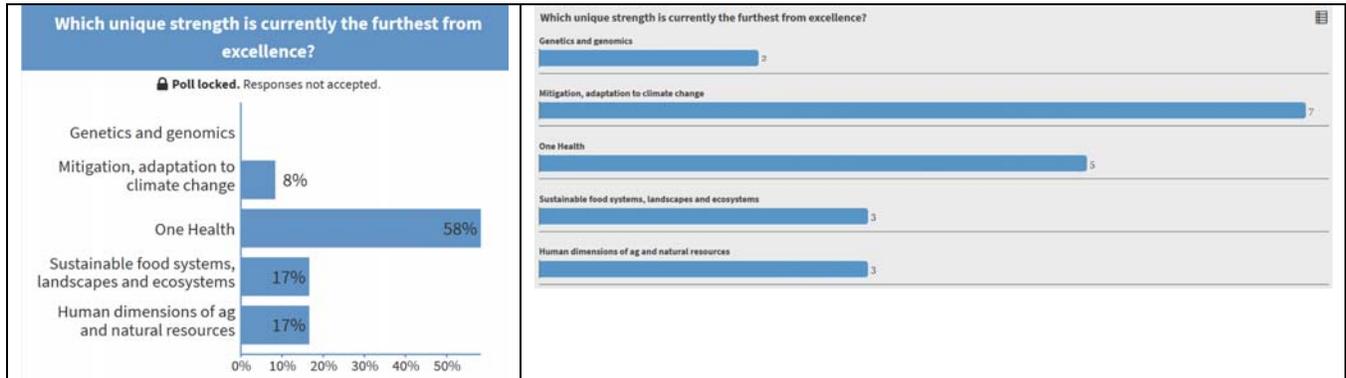
**Figure 4. Responses of CANR Unit Leaders from the August 23, 2017 retreat.**

Further questions revealed that the college’s main research strength was thought to be (1) genetics and genomics, although a considerable number of people polled from both groups indicated excellence in (4) sustainable food systems, landscapes and ecosystems (Figure 5). This reflects the results of polls conducted in 2015, suggesting that our perceptions have not changed over four years.



**Figure 5. Poll results from the CANR Administrative Team (left) and the faculty/staff Town Hall (right) regarding the perception of excellence among CANR unique strengths.**

Asked another way, i.e., which strength was furthest from excellence, reinforced that areas (2) mitigation and adaptation to climate change, and (3) One Health, were not perceived as reaching excellence at this time, although the two groups of respondents differed (Figure 6).



**Figure 6. Poll results from the CANR Administrative Team (left) and the faculty/staff Town Hall (right) regarding the perception of the CANR unique strength that is furthest from excellence.**

Further analysis shed some light on these polling results. In the college’s *2017 USDA Plan of Work Report*, faculty self-identified with one or more of the unique strengths as they reported their annual research activity. In 2017, 35% of the research faculty in the college self-identified into unique strengths of One Health or Climate Change, suggesting that there is no lack of programs in these areas, but rather a lack of recognition of the areas as being focused, unique strengths in the college. Similar to perceptions from the *Milestones 2015* document, the results of polling suggest that new strategies are needed to enhance awareness among faculty and staff regarding the college’s programs and how they align with our unique strengths.

The college has maintained a strong overall position in sponsored programs, which are comprised largely of research grants and contracts. CANR ranks 3<sup>rd</sup> among all colleges at UD in sponsored program expenditures, but has the second smallest number of faculty. Data supporting CANR’s strength in research were revealed in a campus-wide space study completed in FY17, the “Campus Framework” analysis, performed by Jacobs Consulting Group. The data for FY16 are presented in Table 3.

**Table 3. Selected metrics of research productivity for UD overall and the four main STEM colleges on campus, including CANR.**

Unit	Sponsored Expenditures FY16	Research \$/PI	# PIs	Average Group size FTE/PI	Sq Ft/FTE	ROA \$/ Sq Ft
UD	\$204.8M	\$147K	950	1.9	379	\$194
Engineering	\$45.8M	\$310K	134	3.8	417	\$207
Arts & Sciences	\$40.1M	\$ 66K	384	1.4	465	\$112
<b>CANR</b>	<b>\$30.0M</b>	<b>\$272K</b>	<b>68</b>	<b>2.9</b>	<b>373</b>	<b>\$206</b>
Earth, Ocean, Environment	\$16.8M	\$126K	91	1.3	536	\$204

The data show that CANR has the fewest Principal Investigators (PIs, which are faculty with active research appointments), but the second highest research expenditures per PI of the four STEM colleges at UD (Table 3). The average group size of a CANR PI is about three people, which is 50% higher than the UD average. The space allotted per FTE in research is the lowest of the four STEM colleges at 373 Sq ft/FTE. Importantly, the Return on Asset (ROA) is roughly equivalent to that of the College of Engineering, which is the number one research college on campus. Collectively, the data suggest that CANR research faculty are as, or nearly as productive and efficient in their work as College of Engineering faculty. In other words, we make the most of each person, dollar and square foot allocated to research.

Sustaining and growing the research enterprise of the College is a top priority. However, given tightening budgets, it is clear that our ability to hire and retain the best and brightest faculty will

increasingly rely on recovering a greater proportion of the full cost of maintaining the CANR research enterprise. It is these recovered costs that, in large part, enable the College to offset operating expenses and thus fund competitive packages for faculty recruitment and retention.

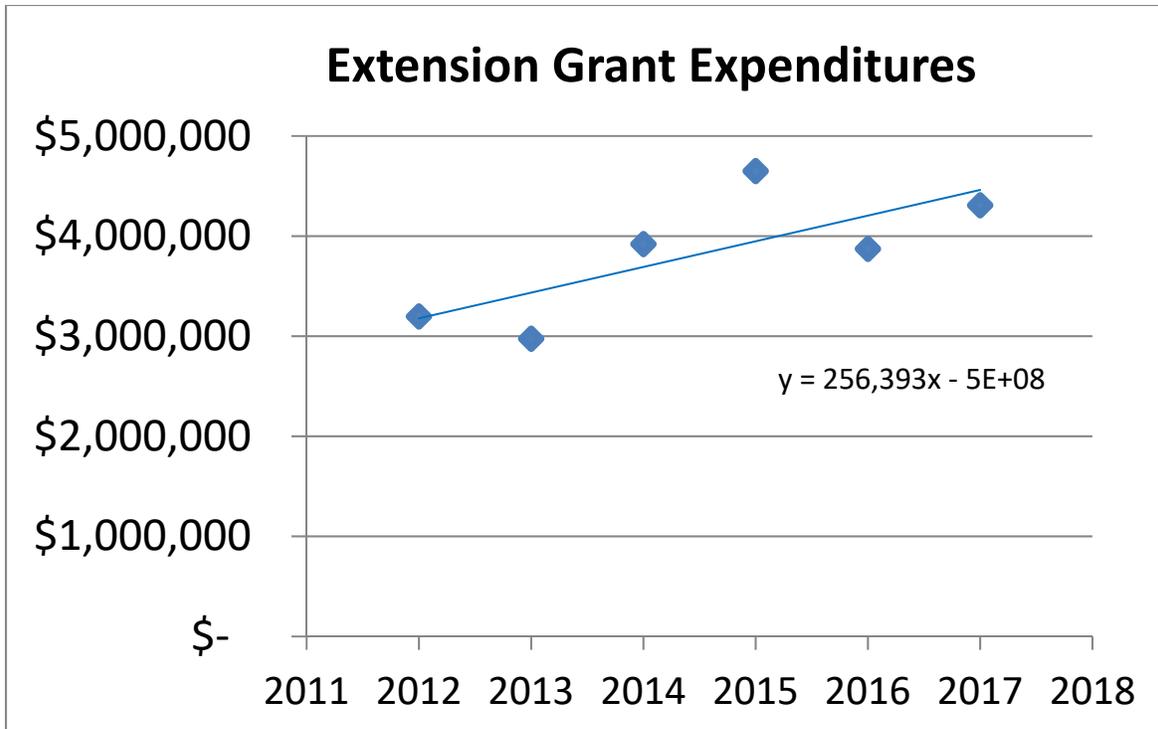
A recent analysis of FY16 data showed that the annual cost of sustaining the CANR research enterprise was \$10.6M exclusive of faculty salaries. Thus, the annual cost of sustaining CANR research infrastructure amounts to 1/3 of the entire annual sponsored program expenditures of the College (~\$30M). Typically, though indirect cost charges on sponsored program expenditures, the College receives ~\$2.5M annually in reimbursement for Facilities & Administrative (F&A) costs of sponsored programs. These F&A reimbursements cover only 25% of the annual costs of sustaining the CANR research enterprise. As a first step towards addressing this shortfall, in 2015 the College implemented a policy of waiving 85% of graduate tuition for students supported through a graduate research assistantship. The remaining 15% proportion of graduate tuition must be covered through some other means, largely through budget requests on grant proposals to external sponsors. Later, in 2016 a similar policy was adopted University-wide.

While the graduate student tuition policy has been successful, providing nearly \$400,000 of budget relief in FY17, clearly, a priority for the College will be to have our research sponsors cover a greater proportion of the costs required to sustain the research enterprise. Looking forward, the College will be investigating and then implementing new policies aimed at doubling the recovery of costs necessary to sustaining a world-class research enterprise. By doing so, the College will improve its ability to recruit and retain top-tier faculty and thus grow its prominence as a leader in life sciences, agricultural and natural resources research.

### C. Extension

Cooperative Extension is strong and the most visible aspect of CANR from the viewpoint of external stakeholders. Stakeholders are actively engaged in program advisory committees, faculty and staff interviews and in program feedback on process and impact. The *Master Plan* defines a number of goals for Extension (Appendix II). One major goal is a **statewide focus and structure**. Success thus far includes a statewide Master Gardener training and management program, Family and Consumer Sciences programs with program marketing materials focused statewide, 4-H county contests and programs unified, and the initial steps for an online, one-stop registration and calendar marketing process for all Extension programs are underway.

**Creating and implementing a sustainable funding model** is another major goal as our costs have increased while state and federal appropriates have remained largely flat. To that end, Figure 7 shows a strong increase in grant funding to support cooperative extension programs in the last five years. A cost recovery plan has also been developed, which identifies items allowable for cost recovery and those with potential for enhanced cost recovery.



**Figure 7. The trend in grant funding for Cooperative Extension shows an average increase of about \$250,000 per year since FY12.**

**Programmatic impact through evaluation and enhanced scholarship** has been documented via implementation of the Logic Model Planning and Reporting System (LMPRS) throughout Cooperative Extension. The LMPRS enables data collection on extension activities that align with the five unique strengths of the college, enabling us to quantify effort and impact across our strategic themes. Additionally, using LMPRS, we have developed one-page infographic and stakeholder stories that have resulted in external press coverage of extension achievements, most recently in the National Institute of Food and Agriculture newsletter. The LMPRS system and data have been valuable in evaluating programmatic impact and justifying effort in extension programs.

**Integration of Cooperative Extension across UD colleges and within CANR departments** is occurring. Since UD has achieved its distinguished Carnegie Engaged University status, Extension has been very involved in the Community Engagement Initiative and the Extension Director serves as co-chair of the Council of Community Engagement and Public Service Centers, bringing together 28+ outreach units from across the University. The Initiative focuses on organizational and program effectiveness and efficiencies with Delawareans. Stronger integration of extension into academic departments is also occurring through strategic hiring in the college. One new Extension faculty position is being piloted with an academic home in Health Sciences focused on Healthy Neighborhood initiatives. This is the first faculty appointment in Extension outside of CANR. Another step towards integration was the transition of an Extension Specialist position to a Continuing-track faculty position in Plant and Soil Sciences; this new faculty member began on September 1, 2017.

**Enhancing programmatic leadership** has included the establishment of a full FTE program leader in the Agriculture program. Additionally, professional development in leadership is being extended to extension agents and faculty through LEAD 21 and LEADelaware, which are cohort-based programs for future agricultural leaders. Specifically, LEADelaware is a partnership with Delaware Department of Agriculture to develop emerging agricultural leaders in the state, which includes an international study program.

**Technology in educational delivery** is a constant need. An Endowment focused on innovative programming is fostering the first innovation grants in Extension. In 2017, eleven teams vied for the endowment funds to support technology incorporation into their programs. Our current focus also includes enhancing our web presence, including YouTube and online courses (two presently available).

The goal of **meeting the population needs in Wilmington** has included a broader look at urban populations across the state. An assessment of current outreach efforts in these communities has been compiled. A specific plan is under development, including the Healthy Neighborhood initiative and co-locating the EFNEP/SNAP programs in health clinics in Wilmington.

An additional goal has been added since the writing of the Master Plan and includes **a renewed focus on diversity and civil rights**. The Civil Rights and Diversity Plan for Cooperative Extension has been updated and includes four key areas: program advisory boards and committees, program outreach, professional development, marketing and communication. A process for documenting the efforts in each area was initiated in 2017. The naming of a civil rights officer through the office of diversity is being explored.

#### D. Space

Physical infrastructure is a major focus of the *Master Plan* because of the indirect effects it has on the quality and capacity of work that we do, and on the ability to attract and retain the most talented students, faculty and staff. We have made significant progress in planning for a Worrilow Hall renovation, and in making minor upgrades to other spaces Townsend Hall (Appendix II).

In early 2017, President Assanis approved a \$30 million Worrilow Hall renovation and upgrade on the condition of the college raising \$10 million toward the project. As of August, 2017, we have raised \$7 million toward Worrilow and will begin the project by mid-2018. This addresses one of the major goals of the *Master Plan*, and also aligns with the President's goal of investing in our physical and intellectual capital. Also in 2017, we learned that the Delaware Biotechnology Institute (DBI) will be co-located in a new 200,000 ft<sup>2</sup> building on STAR campus. CANR has seven of the ~12 resident faculty in DBI, and relocating them closer to Townsend Hall in state-of-the-art space is an exciting development for the college.

## E. Budget

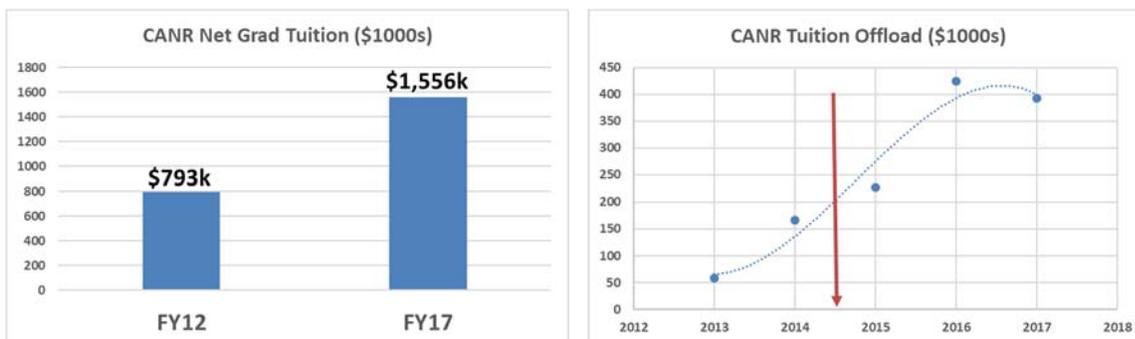
Our budget must align with our goals in order to have the resources available to make progress. A section of the *Master Plan* outlined goals and principles for budgeting, as several changes were being considered simultaneously to improve the college's financial position. Significant progress has been made on improving the college's budget in four years (Appendix II). As stated above in section III, the CANR budget will change for FY19 and beyond, and like other colleges at UD, we will need to generate more of our resources through cost recovery, grants, philanthropy, and entrepreneurial activity.

We enter into a new era in budgeting at UD in good position. Our College reserve balance trend reflects our progress since the *Master Plan* was initiated.

Year ending June 30 <sup>th</sup>	College Reserve Balance
2013	\$9,610
2014	-\$1,054,501
2015	\$917,650
2016	\$3,160,400
2017	\$4,331,156

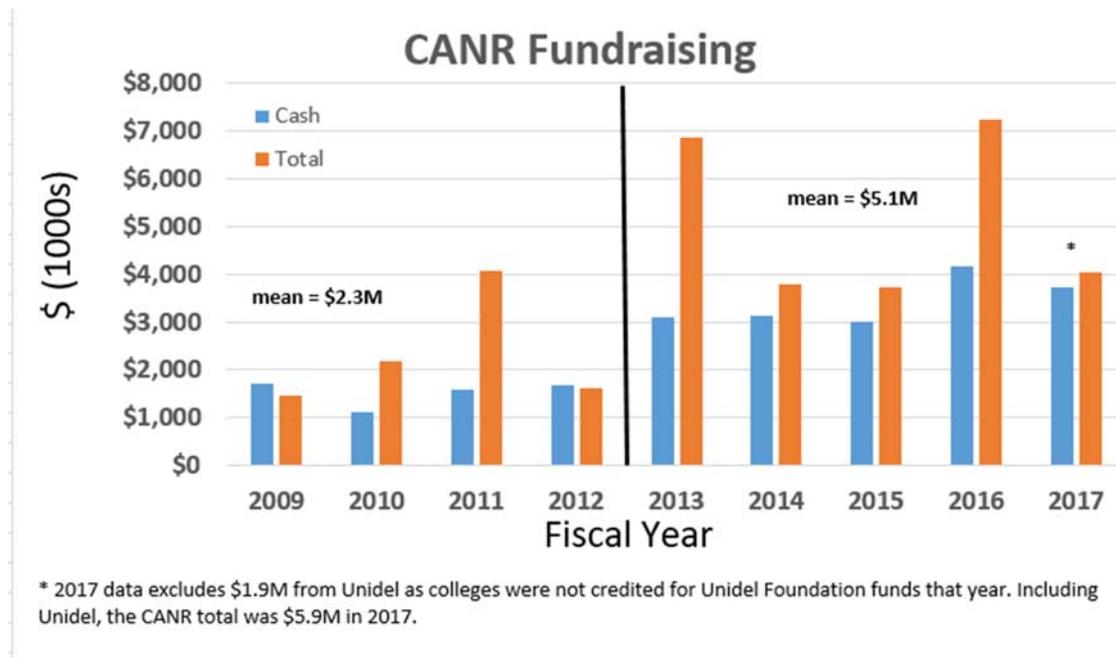
Base budget revenue to the College grew by over \$3 million since FY14, or about 15%, largely through growth in credit hour generation and undergraduate enrollment. At the same time, total college expenses increased by only 1.7%, as we reduced personnel and increased efficiency of operation.

Another positive trend that has helped the overall budget and shows even more promise for the future is net graduate tuition (Figure 8). Currently, colleges are allowed to keep the differential between tuition billed and tuition waived as an incentive to grow enrollment of tuition-paying students and/or collecting partial tuition from research sponsors. The CANR policy on graduate tuition, which went into place in July, 2014, has allowed significantly more budget relief by collecting 15% of graduate tuition from sponsors. At the same time, the MS in Statistics has recruited more self-paying students, raising real tuition dollar inflow to the College.



**Figure 8. The trend in CANR net graduate tuition revenue since FY12 (left panel). The CANR Graduate Tuition policy has reduced waivers by ~\$400,000 as of FY17, more than double the amount of relief we were capturing prior to policy implementation (right panel).**

Philanthropy allows us to pursue strategic goals that we could not attain otherwise. Our base budget supports compensation for our employees, expendable supplies, central services and utilities, but gifts allow for special programs that differentiate us from other universities and enhance the student experience significantly (e.g., equine program, UDairy Creamery, UD Botanical Gardens). Philanthropy has doubled since 2012, supporting student success and the college’s unique programs (Figure 8).



**Figure 8. CANR fundraising trend for the periods prior to, and following the launch of the 2013 Master Plan.**

#### IV. Conclusions and Next Steps

While Wildly Important Goals (Appendix I) are *de facto* action items in strategic plan implementation, additional goals that address stakeholder input and strategic alignment with the Assanis Administration need to be considered in light of new leadership at UD. The CANR Advisory Board provided feedback on specific areas when queried at the June, 2017 meeting (Appendix III). The major categories can be summarized as:

- **Enhance communication and marketing** – in all possible dimensions, focusing on the Assanis Administration in the short-term, and building partnerships with alumni, industry and agency in the long-term.
- **Business model** – be open to new ideas and collaboration with external groups regarding new funding streams, new programs and partnerships; don’t be afraid to let go of existing programs to invest in new possibilities.
- **Infrastructure** – The southern end of the campus is the growth area for the next decade; complete the WorriLOW project quickly and leverage the planned growth on the STAR campus.

- **Programming** – across research, teaching and outreach missions, develop contemporary programs that are attractive, relevant and interdisciplinary, and importantly, address new audiences.

Clearly, we've begun to address many of the goals set forth in the 2013 CANR *Master Plan*. Given its 25-year timeline, it is reassuring that measurable progress has begun, but also not surprising that we have much more work to do. Importantly, several units completed their Wildly Important Goals by the time *Milestones 2015* was written, and moved on to completing new goals, suggesting that the implementation plan is working. In the coming years, we must continue with the same tenacity as we have seen during the first four years, pausing periodically to assess our progress. The next *Milestones* document will be produced in late 2020.

We are thankful for the efforts and support of all of the faculty, staff, students, Advisory Board members, UD administrators and stakeholders that worked to help implement the *Master Plan*.

**Appendix I. 2017 Wildly Important Goals (WIGs) for programmatic and support units in the college**

Unit	Wildly Important Goal (WIG)
Dean	Worrilow Hall: solicit gifts sufficient to close the \$10 million fundraising goal by June 30, 2018, and break ground on the renovation and upgrade in early FY19.
Cooperative Extension	Invest \$10,000 in professional development and incentivizing innovation. Conduct a one-year follow up on innovation investments and document lessons learned, innovations completed, and return on investment.
Development	Utilize Dean/CANR leaders to identify and qualify 50 new major gift prospects for CANR campaign priorities by June 30, 2018.
Research & Graduate Programs	Work with the newly revived CANR Cost Recovery committee to formulate policies and procedures surrounding the reimbursement rates and distribution formulas for Facilities & Administrative costs; set the expectations for effective F&A reimbursement rates; and provide guidance for various cost recovery options when sponsors restrict F&A budget requests.
Animal and Food Sciences	Work with department to determine the type of new post-baccalaureate degree program (e.g. non-thesis MS or certificate program) in Animal Science or One Health, develop curriculum, submit program for approval via CANR and UDEL Courses and Curriculum in time for the 2017/2018 academic year review cycle.
Applied Economics and Statistics	Complete a needs assessment and obtain input from stakeholders on FABM revision by June 30 <sup>th</sup> , which will drive a formal curriculum revision proposal to be submitted by the end of fall semester, 2018.
Entomology and Wildlife Ecology	During 2017, approach faculty to identify two courses to develop online sections, work with the faculty member to develop a timeline for implementation of courses by June 30, 2018.
Plant and Soil Sciences	TBD
Carvel Research & Education Center	Enhance marketing, recruitment, and work based learning (internships) opportunities for high school, undergraduate, and graduate students working out of the Carvel Research and Education Center. This includes enhancement of the Carvel web site to reflect the diversity of research, teaching, and extension programs delivered from this campus location. This WIG has the goal of adding three internship opportunities based out of Carvel, along with an updated Web page by June 30, 2018.
Business Operations	Create a position responsibilities binder, containing the current (most recently updated and HR approved) position description for all CANR administrative staff (Dean's Office, all academic departments, Newark Farm, Extension and Carvel REC), by December 2017.

Communications	Get each Department & Coop. Extension externally placed in a large regional or national publication.
Facilities	Prioritize the WorriLOW renovation, prepare researchers and instructors to move out by June 2018, and support the architectural design, swing-space transition, decommissioning of labs, and ground breaking to be completed by August 2018.
Grants and Contracts	Assist faculty with budgeting to increase cost recovery, develop standardized Master Service Agreements, and foster positive relationships, we expect an increase in industry partnerships and sponsorship by 10%, with a deadline of June 30, 2018.
Information Technology	Evaluate current IT services offered by CANR IT and determine what services will be in demand from the college in the next few years. By June 2018, develop a strategic plan of where to invest college resources to meet an increasing demand for our services.
Undergraduate Student Services	By September 2018, utilize BHSC outreach advising templates to message CANR undergraduates on various academic topics to support academic success.

**Appendix II. Master Plan goals and selected examples of progress**

Teaching Goals	Examples of progress
Grow Professional Master's degree programs	Greater enrollment in the Masters of Statistics program, Bioinformatics MS program.
Create a PhD program in Applied Economics	<i>Postponed</i> by APEC department to focus on development of an online MS program in Applied Statistics.
Create a teaching program in genomic sciences	Postponed by the PLSC department until the new department chair arrives in 2018. A \$500,000 Unidel grant was awarded to develop the program.
Create a series of "4+1" programs	The Agricultural Education Master's program has been modified to allow/encourage 5-year completion through deep tuition discounting.
Reach students in other colleges through service courses, minors, internships, and extracurricular activities	Student Credit Hour production has increased 28% since 2013; new minors in Equine Science, Statistical Data Analytics and Beverage Management are reaching students outside the college, as are individual courses such as Fermentation Science, Sustainable and Organic Farming, Wildlife Conservation, Statistics, and Food for Thought; Extension and the UDairy Creamery provide internships for students from CANR and other colleges.
Create streamlined, flexible curricula	Revisions to the ANR major underway; two low-enrollment majors eliminated; Landscape Architecture major launched in Fall 2016 with 24 students enrolled as of August 2017.
Online and hybrid delivery	An online MS degree in Applied Statistics will be launched in spring, 2018; online courses in food science, soil science and statistics are currently offered.
Greater collaboration across and outside of the college.	A new minor in Beverage Management with Hospitality Management will begin Fall 2017; UDairy Creamery opened 2 <sup>nd</sup> location in Wilmington in May, 2017 in collaboration with UD's AA program; increased enrollment in the Water Science and Policy graduate program.
Research Goal	Examples of progress
Support research with excellent facilities and core support units	Worrilow renovation and upgrade underway as of March 2017, Architects contracted in August 2017; increased space utilization from Insectary and OA Newton Building; farm building and equipment upgrades in FY16 and FY17;

Promote interdisciplinary approaches to research and collaborate with partners outside of the college	Delmarva Land Grant Collaborative program in 3 <sup>rd</sup> cycle of funding; Interdisciplinary Microbiology and Biogeochemistry programs in development.
<b>Extension Goal</b>	<b>Examples of progress</b>
Create a statewide focus and structure to Extension programming	Statewide initiatives in Master Gardener, Beginning Farmer, and 4-H programs launched.
Stress programmatic impact through evaluation; enhance scholarship	Planning and reporting system implemented (Extension WIG); grant funding increased.
Enhance program leadership	Two agents and one faculty completed LEAD-21; Extension Director completing the Food Systems Leadership Institute program.
Utilize technology in educational delivery	Student team designed <i>Pocket Farmer</i> , won regional <i>App Challenge</i> award; monthly Extension meetings conducted by Adobe/Zoom; videoconferencing capabilities enhanced at Carvel and Townsend.
Integration of Extension across UD colleges, within CANR departments	Working with College of Health Sciences to place an agent for health and nutrition issues; developing strategic hiring plans in all departments to be inclusive of Extension needs.
Develop a strategy for meeting the population needs of Wilmington	Urban Ag Extension position; strengthening the Delaware Urban Farming Coalition, and building partnerships; assessment of current educational efforts in Wilmington.
<b>Space Goal</b>	<b>Examples of progress</b>
Replace or completely renovate Worrihow Hall	President approved \$30M plan in spring, 2017; Reached 70% of fundraising goal for Worrihow as of August, 2017; Creamery expansion & Food Pilot Plant renovation in Worrihow Garage area underway Fall, 2017
Improve the quality of our classrooms	Unidel 2013 allowed upgrades to 006, 007 Townsend; Worrihow Anatomy Lab upgraded in 2016; OA Newton and Fischer classrooms upgraded in 2016-17.
Create attractive, welcoming, functional common spaces	Townsend Commons and lobby renovated with 2013 Unidel grant.
Create a fair, transparent space allocation system	Space committee created in 2013, policy revised in 2014 and 2015.
<b>Budget Goal</b>	<b>Examples of progress</b>
Maximize transparency and predictability	A unit-level budget is updated and shared with Unit Leaders monthly; departmental teaching budgets are buffered +/- 10% annually to enhance predictability
Reduce long-term costs by enhanced efficiency	Greenhouse and growth chamber LED lighting for reduced energy consumption; increased staff utilization by turning over the genome

	sequencing facility to VP for Research; new autoclave for Townsend Hall; reduced leakage and energy use by renovating farm buildings.
Create a surplus for unforeseen circumstances and reinvestment	Budget contingency/surplus (all funds): <ul style="list-style-type: none"> <li>– FY13: 0.12% (still had debt)</li> <li>– FY14: 0.87% (still had debt)</li> <li>– FY15: 1.36% (out of debt)</li> <li>– FY16: &gt;2%</li> <li>– FY17: &gt;5%</li> </ul>
Continually reinvest in facilities and avoid deferred maintenance	[see above under Space]
Centralize salaries and space, create clear priorities for allocation	Done in 2013; strategic hiring plan for FY17 to FY19 developed and approved by provost in 2016; strategic hiring plan for FY20-24 in progress, Fall 2017;
Achieve greater cost recovery from grants, contracts, fees and gifts	Cost Recovery Committee put in place FY13, approved initial fees; F&A recovery increased 10% in FY15; Graduate tuition policy produces over \$400,000 of budget relief annually; annual fundraising doubled, exceeds \$5 million/year on average.

### **Appendix III. Feedback on strategic initiatives from the CANR Advisory Board's June 2017 meeting.**

The CANR Advisory Board was engaged in a strategic planning exercise during their semi-annual meeting at the Carvel Center in June 2017. At the meeting, the following questions were posed and members provided feedback:

- 1. To meet the Agriculture and Natural Resources needs of the future, Worriow Hall must focus on:**
- 2. To raise undergraduate enrollment 20% by 2020, focus on:**
- 3. To enhance the research and graduate education mission, focus on:**
- 4. To enhance relevance and impact in Extension, focus on:**
- 5. To enhance the mission and impact of the Carvel Center, focus on:**

Later, the feedback was categorized and converged into themes that emerged from specific ideas. Data were broken down two ways: by the question posed and by overall themes that emerged.

#### **Summary by QUESTION**

##### **To meet the Agriculture and Natural Resources needs of the future, Worriow Hall must focus on:**

- **Communication & Marketing Efforts**
  - Communicate need for renovations: have industry meet with UD Board re Ag needs; bring President/UD administrators into the field to increase awareness of the college's impact; promote urban agriculture
- **Business Model**
  - Be collaborative with industry for initial and continuing funding; be flexible in lab specialty areas to attract and keep top research staff
- **Infrastructure & Space Utilization**
  - Complete the project soon; include teaching space (not just research); build the bridge over S. College Ave to the STAR campus; go for state-of-the-art facilities

##### **To raise undergraduate enrollment 20% by 2020, focus on:**

- **Communication & Marketing Efforts**
  - Strengthen the value proposition of the college; link conservation focus with college's programs; showcase job opportunities; put CANR success out to High School guidance counselors
- **Infrastructure & Space Utilization**
  - Complete Worriow renovations
- **Programming**
  - Enhance course offerings: Farm-to-table, organic farming, antibiotic-free rearing, Vet tech program; develop a standing internship in poultry company; enhance the Associate in Arts degree in Sussex County with Carvel infrastructure and personnel
- **Increase value proposition**
  - Find or create scholarships and/or methods to reduce the financial burden of the student

### To enhance the research and graduate education mission, focus on:

- **Communication & Marketing efforts**
  - Novel advertising; continue to emphasize undergraduate research via honors program; development of a differentiator (Not a “me too” focus); challenge private industry to pay for advanced degrees in Ag; strengthen recruiting of non-Ag MS grads for Ag-related PhD opportunities
- **Environment**
  - Natural infrastructure is a new, large and fast growing area; climate change, water quality, wetlands; wetlands water science center of excellence for waterfowl, development of disease resistant, low maintenance plants; train people to start businesses selling ecological goods and services; shortage of waterfowl science/biologists to capitalize on
- **Programming**
  - Waters science, wetlands engineering and science degrees; technical data interpretation; programs focusing on climate change & associated impacts on water quality, Ag, Land degradation; interdisciplinary PhD; Ag profitability; create business partnership with animal hospital

### To enhance relevance and impact in Extension, focus on:

- **Communication and Marketing Efforts**
  - Address stakeholder needs; increase cooperation with producers (reduced cost; enhanced outcomes; relevant issues); participant buy-in; education of “consumers” in easily maintained plants (lawn chemicals, lawn-land, water consumption)
- **Business Model**
  - Don’t be afraid to make a business decision about a program; funding through check-off program; nonprofit collaboration with groups beyond 4-H (e.g., Ducks Unlimited, DELTA Waterfowl)
- **Programming**
  - Program to tie consumers to production Ag; City of Wilmington for 4-H and nutrition programming; Farm Management Extension Specialist Program

### To enhance the mission and impact of the Carvel Center, focus on:

- **Communication Efforts & Marketing (with a focus on the value of Carvel)**
  - Bring President/UD administrators to Carvel – essential; let the world know what great things are done there; alumni outreach; marketing Carvel as a UD campus for students
- **Infrastructure**
  - Do something with the old office across the road; live chicken house contract production for teaching
- **Programming**
  - AA Degree utilizing UD program at DelTech and Carvel; water science research; climate change impact on crops and poultry; industry funded research; onsite MS for grads w/5+ years work experience; create laboratory research that enhances poultry production (not just prevent the spread of disease)

## Appendix III. (continued)

### Summary of categories: (info from above, grouped by categories)

- **Communication & Marketing Efforts/Increase value proposition**
  - Communicate need for renovations: have industry meet with UD Board re Ag needs;
  - Alumni outreach
  - Bring President/UD administrators out in the field, raise awareness of Ag & Nat Res
  - Promote urban agriculture
  - Strengthen the value proposition of college: link conservation focus with college's programs; showcase job opportunities; put CANR success out to HS guidance counselors
  - Novel advertising: continue to emphasize undergraduate research via honors program; development of a differentiator (Not a "me too" focus)
  - Challenge private industry to pay for advanced degrees in Ag
  - Strengthen recruiting of non-Ag MS grads for Ag-related PhD' create
  - Address stakeholder needs; increase cooperation with producers (reduced cost; enhanced outcomes; relevant issues); participant buy-in
  - Education of "consumers" in easily maintained plants (lawn chemicals, water consumption)
  - better marketing Carvel as a UD campus for students
- **Business Model**
  - Be collaborative with industry for initial and continuing funding
  - Be flexible in lab specialty areas to attract and keep top research staff
  - Ag profitability; there is a business opportunity establishing companies selling ecological goods and services
  - Shortage of waterfowl science/biologists to capitalize on
  - Create business partnership with animal hospital
  - Don't be afraid to make a business decision about program
  - Funding through check-off program
  - Nonprofit collaboration with groups beyond 4H (e.g., Ducks Unlimited, DELTA Waterfowl)
  - Find or create scholarships and/or methods to reduce the financial burden of the student
- **Infrastructure & Space Utilization**
  - Complete Worrilow renovations soon
  - Include good teaching space in Worrilow (not just research)
  - Build the bridge over S. College Ave to STAR campus
  - Do something with the old office across the road (Carvel)
  - Live chicken house contract production for teaching
- **Programming**
  - Enhance course offerings: Farm to table; organic farming; antibiotic-free rearing
  - Vet tech program
  - Create a standing internship in poultry company
  - Associate in Arts degree in Sussex with Carvel at Del Tech, Georgetown.
  - Waters science, wetlands engineering and science degrees; technical data interpretation

- Programs focusing on climate change & associated impacts on water quality, Ag, Land degradation
- Interdisciplinary PhDs
- Program to tie consumers & production Ag
- City of Wilmington for 4-H and nutrition programs
- Farm Management Extension Specialist Program
- AA Degree utilizing UD program at DelTech and Carvel
- Water science research
- Climate change impact on crops and poultry
- Industry funded research
- Onsite MS for grads w/5+ years work experience
- Create laboratory research that enhances poultry production (not just prevent the spread of disease)