FSLI Leadership Project

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**Purdue Plant Sciences: Growing Undergraduate Enrollment in the College of Agriculture and the Department of Agronomy**

1. Introduction
   1. Statement of problem
      1. The agronomy department enrollment for undergraduate students has ranged from 169 to 154 from 2008 to 2014 as measured each fall semester. The college enrollment has increased from 2535 to 2704. The new beginner enrollment (freshman) in Agronomy during that time has been fairly steady with a range of 20-29 and an average of 25. Prior to 2014 the Agronomy enrollment showed a very modest increase from 153 in 2009 to 164 in 2013. The number of applications and the percent admitted did not change much over this period for Agronomy and the college. At the college the yield rate had a slight increase which was enough to account for the rise in College enrollment – this positive trend was not common across the University as all but three colleges showed decreases in enrollment over this time period. This was deliberate as the university instituted a more selective admissions policy to reduce the size of the university and have a higher caliber student body. The College of Ag was under an enrollment cap of approximately 2500 students during this time yet increased the yield of admitted students and consequently increased enrollment to 2704.
      2. The placement of our students irrespective of the major with Agronomy is 98-100% and in the college about 88%. The demand for our students has been and continues to be very high, salaries have increased about 10% yearly, the job placement rates are exceptional high, the college and agronomy department graduation time is 4.1 years, we have high student satisfaction and excellent career paths for our students. In spite of these very positive trends we have not increased our enrollment in Agronomy to any substantial degree until the upcoming Fall 2015 class in which the enrolled students increased from 29 in 2014 to 49.
   2. Significance of project for the department and college
      1. The change in administration in 2012 have placed significant emphasis on affordability and access. This resulted in a tuition freeze for the past three years and the enrollment cap for the university and the College of Ag especially in the plant science has been removed. The University is expecting us to increase our enrollment in the College of Ag to approximately 3,000; an increase of 300 undergraduates. A significant part of these are expected to be in Agronomy and in departments within the College of Ag that have plant science related majors. The Agronomy department also has a new strategic plan and one of the goals is to increase undergraduate enrollment by approximately 25% - ~ 200 students.
      2. The budget model for the university will be changing in the near future (1-2 years) from a historical budget to a resource centered management budget. At this time it is not known if the RCM will be at the College or department level or if it will extend to fees for some or all services. In either case this part of the university budget i.e. the general fund (tuition and state allocation) is driven by student numbers: specifically enrollments in departments/majors and credit hours taught. The student to faculty ratio in Agronomy and the College of Agriculture (CoA) compared to other colleges and departments in the University is low which is a concern when looking at the RCM budget approach. It is clear that increasing our enrollment is necessary to bring additional revenue into the university as a consequence of the tuition freeze, and to ensure that Agronomy and the College of Ag continues to be resourced appropriately to fulfill our teaching research and extension missions. It is worth noting that the general funds do not reflect the funds used to fulfill our research and extension missions with the exception of faculty salaries.
      3. The state and university have emphasized the need to improve our time to graduation. The state legislature in 2013 has set 120 credit hours as the amount need to complete the degree as one method to have students graduate in 4 years or less. This change in credit hours to graduate did require a significant change in our plans of study as this was a reduction of 10-12 credits for most majors in the Agronomy Department and the CoA. The result of this change has been a significant increase in students graduating one to two semesters early which does affect our total enrollment figures and potentially the credit hours we teach. The College of Ag and certainly the Agronomy department already had a very high percent of our students graduating in 4.1 years and were well above the average for the University.

1. Review of Admissions Data
   1. application and enrollment information
      1. The application and enrollment figures for the university from 2009-2015 are shown in Table 1. What is clear from this data is the very large increase in applications for those students entering in fall 2014. This is when the university began accepting the common application. The second change began with how applications were reviewed for students entering in fall 2015. Prior to fall 2015 admissions all students with any C grades were automatically wait-listed and they did not have a positive or negative admissions response until sometime in February-March or later. From what I understand this has been changed to reflect the emphasis on accessibility to a Purdue education. All application review and admissions is done at the university level. The college and departments aid in recruiting those students that have been admitted. The university admissions office does little to no recruitment for departments.

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| Table 1. University ADMISSIONS DATA | | | | | | | |
|  | **Fall 2009** | **Fall 2010** | **Fall 2011** | **Fall 2012** | **Fall 2013** | **Fall 2014** | **Fall 2015\*** |
| # Applied | 27,212 | 30,706 | 29,513 | 30,902 | 30,995 | 39,706 | 44,385 |
| Sum of Admitted # | 19,905 | 19,993 | 20,163 | 18,951 | 18,684 | 23,506 | 22,420 |
| % Admit | 73.15% | 65.11% | 68.32% | 61.33% | 60.28% | 59.20% | 50.51% |
| Sum of Enrolled | 6,171 | 6,347 | 6.659 | 6,291 | 6,283 | 6,373 | ND |
| Sum of Yield Rate % | 31.00% | 31.75% | 33.03% | 33.20% | 33.63% | 27.11% | ND |
| *\* ND - Not determined* | | | | | | |  |

* + 1. The applications and enrollment figures for the College of Agriculture are shown in Table 2. These trends for the College are similar in some cases to the University data in Table 1. The same trend in increased applications at the University 43% was also observed at the College - 23% but without the concomitant decrease in percent of students admitted and enrolled. This suggests that the CoA is not admitting a lower caliber of students and that we do not see the very large increase in non-resident/international student applications observed in Engineering and other colleges.

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| Table 2. COLLEGE OF AGRICULTURE NEW BEGINNER ADMISSIONS DATA | | | | | | | |
|  | **Fall 2009** | **Fall 2010** | **Fall 2011** | **Fall 2012** | **Fall 2013** | **Fall 2014** | **Fall 2015** |
| # Applied | 1,453 | 1,448 | 1,257 | 1,328 | 1,280 | 1,459 | 1,575 |
| Sum of Admitted # | 1,098 | 1,140 | 987 | 1,005 | 979 | 1,116 | 1,213 |
| % Admit | 75.57% | 78.73% | 78.52% | 75.68% | 76.48% | 76.49% | 77.02% |
| Sum of Enrolled | 461 | 572 | 483 | 499 | 504 | 539 | 550 |
| Sum of Yield Rate % | 41.99% | 50.18% | 48.94% | 49.65% | 51.48% | 48.30% | 45.34% |
| *\*Fall 2015 Yield Rate % is based on the current # of Admits who have accepted their admission thru 5/3/15* | | | | | | |  |

* + 1. The application and enrollment figures for the Agronomy Department are shown in Table 3. These data show that Agronomy has averaged an admittance rate of 75% and yield rate of 53%. Fall 2015 there was very significant increase in applications and a concomitant increase in admitted students albeit at the same admitted and yield percentage rate. The percent of non-resident US applications averages 32% from 2008-2015 and 12.2% accepted the admissions offer for Fall 2015 as did 4% of the international students. The applications and subsequent yield rates of resident, non-resident and international students has remained fairly consistent over the past nine years.

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| Table 3. Agronomy Department NEW BEGINNER ADMISSIONS DATA | | | | | | | |
|  | **Fall 2009** | **Fall 2010** | **Fall 2011** | **Fall 2012** | **Fall 2013** | **Fall 2014** | **Fall 2015** |
| # Applied | 73 | 65 | 58 | 65 | 63 | 64 | 115 |
| Sum of Admitted # | 51 | 51 | 39 | 53 | 47 | 50 | 84 |
| % Admit | 69.86% | 78.46% | 67.24% | 81.54% | 74.60% | 78.13% | 73.04% |
| Sum of Enrolled | 26 | 26 | 23 | 29 | 20 | 29 | 49 |
| Sum of Yield Rate % | 50.98% | 50.98% | 58.97% | 54.72% | 42.55% | 58.00% | 58.33% |
| *\*Fall 2015 Yield Rate % is based on the current # of Admits who have accepted their admission thru 5/3/15* | | | | | | |  |

1. Decision basis for applying to universities and programs
   1. Purdue partnered with Eduventures in 2012 and 2014 for a survey that examines where students have obtained information that influences their application, their decisions for areas of study and their decisions for enrolling at Purdue. Web based resources were the top three highest sources for information of 75% of the students regardless of whether they enrolled or not. For both enrolling/non-enrolling campus-hosted visits, communication with admissions, college fairs and college guides were additional key sources. In the 2012 survey parents, friends and students enrolled at Purdue were the key influencers. In both surveys nearly 30% of non-enrolling students were very close to choosing Purdue and waited until just before May 1st to make a decision. The reduced availability of scholarship/financial aid at Purdue compared to other institutions were negative factors.

1. Enrollment Management Recruitment and Admissions Process
   1. The Office of Enrollment Management (EM) oversees for the University student recruitment and admissions. This entails setting the admissions standards for each college, determining the enrollment for each college according to the direction the university is choosing such as caliber of student body, out of state proportion etc. The colleges do have some input into what enrollment they can handle but that is received only as recommendations. EM also sends recruitment materials both printed and electronic to an array of prospective students which they write and design in-house and also send recruiters to locations across the country. There are two offices on the east and west coast to facilitate recruitment from those areas. The contact with students is done through Hobsons which from my understanding is a portal to set up queries to get prospective student lists and their contact information, track who is contacting students as a means of having a coordinated process across the university. EM does relatively little done to recruit students to a particular major. That is left up to the College or department but EM is certainly willing to help when they can. I have meet with the VP for admissions and one of the admissions leads as part of this project and had a very interesting conversation. They have viewed the College of Ag (CoA) as being passive when it comes to student recruitment and they have in the past, prior to the CoA new 2013 “Experience Purdue” recruitment material, viewed our recruitment material as poorly done and messaged via print, social media and e-mail. They said that these need to change for us to be successful in recruiting more students and a higher caliber student. The recruitment staff from CoA and within the department are able to request prospective student lists and to contact these students via e-mail, social media and by phone primarily via Hobsons. My analysis of this information is that the CoA and the Department of Agronomy needs to be much more proactive in student recruitment than what we have done in the past. EM will help when asked but is not and will not be focused on Plant Sciences at Purdue.

1. Methods for increasing enrollment in the Plant Sciences
   1. Increase applications
      1. In recognizing the need for us to do our own recruitment the CoA hired last year a Plant Science recruiter and coordinator who works out of the CoA Office of Academic Programs. This position is the point person for the plant science related departments to receive calls from prospective students and pass them to the appropriate department, help generating lists of prospective students through Hobsons, e-mail recruitment through Hobsons and travel to various venues such as the FFA, 4H, the Indiana Science Teacher annual conference for recruitment purposes. This position while important in recruiting from our traditional base of students is also expected to reach out to alternative audiences in urban areas such as Indianapolis and Fort Wayne to identify students that typically would not consider an Ag education yet want to make a difference in the world. Defining the venues and approaches for these “new” audiences will continue to be a work in progress. In seeing how the recruitment process works the plant science departments must take on more responsibility for recruitment.
         1. The first step in increasing enrollment is to increase the number of applications. The University by using the common application since 2014 and its very public focus on affordability (freezing tuition) and increased access has helped in increasing our Plant Science application numbers for Fall 2014 & especially 2015 (Table 4) 64% from 2013, a 80% increase in admitted students and a 48% increase in enrolled students. What is not shown in Table 4 is that all of the increase in enrolled students only occurred in the Agronomy Department.

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| Table 4. PLANT SCIENCE NEW BEGINNER ADMISSIONS DATA | | | | | | | |
|  | **Fall 2009** | **Fall 2010** | **Fall 2011** | **Fall 2012** | **Fall 2013** | **Fall 2014** | **Fall 2015** |
| # Applied | 223 | 200 | 174 | 166 | 149 | 173 | 244 |
| Sum of Admitted # | 151 | 142 | 118 | 123 | 100 | 125 | 180 |
| % Admit | 67.71% | 71.00% | 67.82% | 74.10% | 67.11% | 72.25% | 73.77% |
| Sum of Enrolled | 65 | 69 | 62 | 52 | 52 | 58 | 77 |
| Sum of Yield Rate % | 43.05% | 48.59% | 52.54% | 42.28% | 52.00% | 46.40% | 42.78% |
| *\*Fall 2015 Yield Rate % is based on the current # of Admits who have accepted their admission thru 5/3/15* | | | | | | |  |

* 1. Increase acceptance rate: The yield rate of enrolled students in CoA Plant Science Departments (Agronomy, Botany/Plant Pathology, Forestry and Natural resources, Entomology and Hort/Landscape Architecture) averages 47% over the past nine years. However in the past two years 2014 and 2015 Agronomy has increased from 50% to 58% while the other departments have had significantly lower yield rates of 23%. There are several ways to increase the acceptance rates which are listed below
     1. Marketing of department and college
        1. Call nights at the correct times in the decision process as defined by the Eduventure surveys. The Agronomy Department does call nights with Agronomy Ambassadors. This seems to be very well received and needs to be done again in the 3rd week in April as that is when 30% of the students that do not enroll are making their choice.
        2. Experience Purdue – continue to utilize this marketing campaign as it appears to resonate with students. There are marketing material already generated as well as useful web site.
        3. Plant Science Recruiter/Coordinator - Increase communication and coordination with Amy Jones
        4. PreCollege Molecular Agriculture Summer Institute Program - Work with Amy to increase participation of high achieving students as another method of student recruitment through this week long camp.
        5. Branding Agronomy – The department is developing a brand with common talking points for student recruitment based on specific departmental attributes with help from the Purdue Media and Marketing Department. This is also being done for several other departments on campus and will be useful to assess their success. It is quite possible that this approach will work for the other Plant Science departments.
        6. Web site – Agronomy’s web site needs a significant change. Purdue Media and Marketing is helping to identify look and feel as well as general content and what we should have on web site depending upon time of year and audience we are attracting at those times. The department will need to implement changes and potentially change from SharePoint to a different web software that is much more user friendly.
        7. Advertisement - Digital advertisements at three different months of the year that have been identified as key times for student recruitment were extremely effective for the Women in Engineering program. They increased their enrolled students by 100 within one year. Learn from their success!
           1. Are billboards or radio ads useful?
        8. Hobsons – This recruitment management tool has many useful tools to generate student lists using a variety of keywords, send hard copy as well as digital messages. Training is required to take full advantage of this system and thus far only staff in the CoA Office of Academic Programs (OAP) are knowledgeable yet I am not sure if they are fully trained. Full use of this system is critical to increasing application numbers and yield rate.
     2. Send letters/cards/info directly to parents that specifies the majors and career potential of an Agronomy and Plant Science degree: We have a great story: 100% placement, research opportunities, ready access to internships, excellent salaries – in many cases equal to engineering and ability to be a leader in their field. Parents are the most influential in students choices
     3. Literature/letter specifically addressing their interests based upon the information obtained from Hobsons – Have the Agronomy brand on the front of the envelope so they get message even before opening the letter
     4. Personal touch – engage faculty and staff in some of the call nights. Best are student peers and the Agronomy Ambassadors are very effective
     5. Use correct language for audience - see marketing information we obtained from the marketing information developed by the Dow AgroSciences marketing firm. Parents are pragmatic while the students are very interested in making a difference - feeding the world and environmental challenges.
     6. Borlaug World Food Prize Youth Institute – This program of high school students preparing a research paper on food security issues in developing countries has substantially increased over the past several years from 15 students to 51 students and their teachers in 17 different high schools that come to Purdue for 2 days this April 2015. Because the research paper is also part of a class activity over 300 students are part of this program. This is a group of students we need to be more intentional for recruiting to Purdue CoA.
     7. Exploratory Studies – This group of students is the second largest group of incoming students the past two years. This is a group that have chosen Purdue and are looking for a college and department in which to find a major. Thus far getting useful information of these students has been a significant challenge – which ones are interested in science, life sciences, interested in making a difference in people’s lives, international experiences etc. This is essentially the CODO dilemma – How do you persuade students that are looking for something different that Agronomy or Plant Science is the place for them.