COVER PAGE

PROJECT TITLE:

Progress Towards a Degree: Comparison of Academic Degree Seeking Students from 90/94 and 96/01 BPS

GRANTING ORGANIZATION:

Association for Institutional Research

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and 1996/2001 Beginning Postsecondary Student Longitudinal Study

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PROJECT SUMMARY

This study uses longitudinal data from two Beginning Postsecondary Surveys (BPS:90/94 and BPS: 96/01) on individuals who were actively seeking an academic postsecondary education to examine if and how progress towards a degree has changed between these two time periods. Of particular concern is whether there have been changes in the composition of the college going population and how these changes have influenced progress towards a degree. Human capital theory suggests that an increase in the net benefit of a college degree will act to increase enrollment, but may have a negative impact on progress towards a degree. Those individuals who would have enrolled anyhow without an increase in net benefits, have a greater incentive to complete their degree and to do so more quickly when the net benefit increases. Those individuals newly attracted by the increased return, however, are more likely to be marginal students as well as nontraditional students. Such individuals may be less likely to get a degree and if successful, may take longer to graduate.

The empirical analysis will proceed in several steps. The first step will be to determine whether underlying factors that affect the rewards and/or costs of college attendance have altered the socioeconomic distribution of initial entrants over the time of the two surveys. The second step will be to evaluate progress towards a degree for the two cohorts. Progress towards a degree is often measured by distinguishing between those who are no longer enrolled, those who are still enrolled, and those who have completed a degree as of a certain date. In this analysis, special effort will be made to distinguish stopout behavior from dropout behavior, part-time enrollment from full-time enrollment, and to identify transfer students. Progress towards a degree will be related to the enrollment choices made. Third, multivariate analysis will be used to determine

the factors associated with each enrollment pattern over the time period of the two surveys. A number of alternative specifications will be employed to distinguish between different educational outcomes (dropout, continuing, and completed) and different enrollment choices (continuous/discontinuous, part-time/full-time, and transfer).

This multivariate analysis will identify how individual and family characteristics as well as economic circumstances and institutional factors affect both progress towards a degree and the enrollment path followed. In the end, this study will provide information regarding the extent to which observed changes in attendance patterns over this time frame are due to changes in the composition of the population attending college as opposed to changes in the underlying behavior of a given population. This research should be of substantial interest to policy makers and institutional researchers since it will substantially advance knowledge and insight regarding the opportunity costs associated with enrollment as well as the determinants of attrition, time-to-graduation, and graduation rates. An innovative aspect of this proposal is the consideration of how changes in the net benefits associated with a degree affect not only the quantity but also the background of those enrolling. A second innovation involves evaluating how these changes impact the enrollment path, and hence time-to-graduation of those enrolled.

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PROJECT DESCRIPTION

STATEMENT OF THE PROBLEM

Both attrition from college and time-to-graduation are of critical importance when evaluating education policy. While there is some evidence that time-to-graduation has increased in the last several decades, relatively little is really known as to why. A key problem is that enrollment rates are up, possibly because the returns to a college education have risen. These rising returns have likely attracted individuals who would not previously have enrolled in college. Attrition and enrollment patterns are known to vary across different subsets of the population. Thus, observed trends in attrition and time–to-graduation may be due to changes in the population attending college and/or they may be due to fundamental changes in the underlying factors affecting attrition and time-to-graduation for a fixed college-going population. We propose to examine how progress towards a degree has changed over time and to distinguish between these two competing explanations of change.

It is important in such an analysis to use longitudinal data that are nationally representative and student-based rather than institution-based. Longitudinal data are necessary to measure progress towards a degree over time, preferably from the date of first matriculation. Nationally representative data are necessary to provide a clear picture of what is happening overall and to inform national policy. Several data sets provide information on age-restricted samples, but such samples will fail to capture the substantial and growing population of older, non-traditional students. Student rather than institution-focused data are necessary to follow individuals as they transfer between institutions. To this end we will utilize the 1990/94 Beginning Postsecondary Survey (BPS:90/94) and the 1996/2001 Beginning Postsecondary Survey (BPS:96/01). Each follows a cohort of nationally representative students from date of first enrollment for a period of five or more years.

We start by considering whether students in the later cohort do take longer to graduate than those in the earlier cohort, and then consider to what extent the observed changes in attendance patterns are due to changes in the composition of the population attending college and to what extent they reflect changes in how particular characteristics are related to enrollment behavior. This study will proceed in several

stages, elaborated on in the "Work Proposal" section. *First*, we will see if changes in the benefits and costs of college attendance have altered the socioeconomic distribution of initial entrants over time. *Second*, we will compare progress towards a degree for the two cohorts. Progress towards a degree will be measured by distinguishing between those who have dropped out of college, those who are continuing to make progress towards a degree, and those who have completed a degree as of a certain date. Each survey provides comparable data for five years. The BPS:96/01 follows survey respondents for a sixth year and so will provide valuable information regarding the progress of all those who have not completed their degree within five years. Of particular concern here is the progress of college students who follow a non-traditional path and enroll part-time, stop out, or transfer. *Third*, we will use multivariate analysis to identify the factors associated with each enrollment outcome and to explain the changes over time.

The wealth of background information available in the BPS surveys coupled with the economic data we will append, will allow us to determine if and how changes in the enrolling population have affected enrollment outcomes over the time period of the two surveys. The alternative is that college students who are "statistically the same" now take longer to graduate. Policy makers concerned with educational attainment currently often rely on six-year, institution-specific graduation rates for students who initially enroll on a full-time basis, in order to assess educational outcomes. By focusing on unadjusted overall retention and time-to-graduation measures, policy makers may be operating with incomplete and hence potentially misleading information. The analysis proposed here will provide a more general and controlled measure of progress towards a degree and how it has changed over time, that takes into account the diverse population of undergraduates in this country and the diverse set of enrollment options available nationwide.

WORK PROPOSAL

Theoretical Framework

Economic models based on human capital theory, such as those presented in Becker (1964), Altonji (1993). Stratton, O'Toole, and Wetzel (2004b), and Turner (2004), indicate that individuals make

the decision to attend and persist in college by weighing the expected benefits of doing so against the expected costs of doing so. Benefits are both financial and nonfinancial in nature. College graduates generally obtain both higher paying jobs and jobs with more pleasant work environments than non-graduates. Costs include the direct financial costs as well as the opportunity cost of time. Those individuals for whom the benefits outweigh the costs will persist in college; those individuals for whom the costs outweigh the benefits will not do so. As the expected benefits and costs of a college degree change, so will the size and the characteristics of the population choosing to attend college. While graduation and time-to-graduation are fixed in the simplest of human capital models, it is clear from observation that these factors are variable. In a more complex model, as the expected benefits and costs of a college degree change, so will the probability of graduating and the time-to-graduation.

We know that the financial rewards to a college degree have increased over time. Even over the relatively short time frame considered in this analysis (1989-1995), the earnings for college graduates rose on average seven percent relative to the earnings for high school graduates.[1] Higher post-graduation earnings should encourage those who would have attended had the rewards not increased to complete their degree in a more timely fashion, so that they can obtain the rewards sooner. Higher post-graduation earnings will also, however, lead to increased enrollment by individuals who previously did not find it beneficial to attend college. The 'new' college students may be older, less academically prepared, and/or more financially constrained than the 'previous' college students. They may need more time to complete a degree because of additional remedial work or because they need to work to support themselves. They may be more likely to drop out, to stop out, and to enroll part-time and hence make slower progress toward graduation. Aggregate measures of attrition and time-to-graduation will rise or fall depending upon which of these populations ('new' or 'previous') has the greater impact on aggregate behavior.

We also know that the direct costs (tuition and fees) associated with college have been rising. Between 1994 and 2004, average real tuition and fees at four-year colleges rose 36% at private schools

[1] The earnings figures are constructed using hourly earnings from the May Current Population Surveys. Those currently enrolled in school or in the military have been excluded from the sample.

and 51% at public schools. Ten to twenty percent of that change occurred in just the last year (*Trends in College Pricing 2004*, College Board). These rising costs will, in part, counteract the rising benefits discussed above. They may also explain why college students are increasingly likely to be employed. Students who are financially constrained may find it imperative to work while enrolled in order to defray direct college expenses. The time and energy constraints imposed by employment may also increase time-to-graduation for these students.

It is well recognized by economists, however, that direct costs generally constitute significantly less than half the real cost of an education. The real killer is the time cost. Time spent in classes and on academic work, is time not available for employment or alternative activities. Evaluated at the average market wage for a teenage high school graduate, a year of foregone employment would garner about $18,000 in income. By contrast, the average charge for 2003-4 tuition and fees was $1,909 at a public 2-year institution, $4,645 at a public 4-year institution, and $18,950 at a private 4-year institution. Only at a private institution do the direct costs approach the indirect costs associated with college attendance.[2]

Both the per unit value of time and the time-to-degree influence these important indirect costs. In real terms, the hourly earnings of teenage high school graduates fell six percent between 1989 and 1995, suggesting that the cost of a year spent enrolled in college has declined.[3] Perhaps even more importantly, earnings for high school graduates of all ages have fallen some two percent. This is quite significant since the higher financial rewards to a college degree may attract more older students who, though earning more than younger and less experienced high school graduates, are discovering that their relative earnings profile has shifted downward over time. For both recent high school graduates as well as for

[2] The tuition measures were taken from Table 1 in *Trends in College Pricing 2004.* The opportunity cost measure was constructed assuming a 40 hour work week for 50 weeks a year at the average wage received by employed teenage high school graduates in the May 2004 Current Population Survey who were not enrolled in school, were not employed by the military, and reported an hourly wage between $4 and $100. This average hourly wage was $8.97. The high rate of unemployment experienced by teenagers has not been taken into account.

[3] Alternatively, the decreased earnings of teenage high school graduates could also be attributed to selection. If the most able high school graduates are more likely to enroll in college and the benefits associated with college have increased, then those teenagers who do not proceed to college in 1996 would be on average less able than those teenagers who do not proceed to college in 1990 and so likely to receive lower wages. We can explore this likelihood when we look at changes in the enrolled population. Note, however, that such a simple story can not explain the growing gap between the earnings of high school and college graduates.

"older" high school graduates, falling earnings potential would, given no change in time-to-degree, lead to an increase in college enrollments. How this increase in enrollment would affect attrition rates and time-to-degree is uncertain. The overall net effect is further complicated by the disincentive effect that declining high school earnings have on employment while enrolled.

That aside, the critical information we lack in evaluating how the costs and benefits of a college education have changed over time is information on time-to-graduation. That this information is unavailable is largely due to the lack of appropriate data. Ideally we would like to know if it now takes more or less time for an individual with a given set of characteristics to complete his/her studies. Indeed this is the question on which we focus in this paper. If time-to-degree has increased even by as much as one quarter term over the 1990-96 time period, the resulting increase in time would swamp the observed decline in the value of time and boost the total opportunity cost of time associated with college.[4] In an effort to provide students with further information on retention and graduation rates, Congress passed the Student Right to Know Act of 1990. This Act requires colleges to provide information to prospective students regarding first year retention rates and six-year graduation rates for full-time students. However these data fail to distinguish between stopout and dropout, exclude part-time students altogether, and provide no information on transfer students. These enrollment options are used by about half of the student population (O'Toole, Stratton, and Wetzel 2003) and clearly influence time-to-graduation. Nor can these statistics control for heterogeneity across institutions or over time in the characteristics of the student population. The BPS:90/94 and the more recent BPS:96/01 open the door to research opportunities previously not available by providing nationally representative, student-focused, longitudinal data that follow individuals no matter their enrollment pattern or entering characteristics.

Even using these data to compare progress toward graduation over time, however, we must be concerned with changes over time in the characteristics of the enrolling population. Evidence suggests

[4] If one assumes that it took 5 years or 15 quarters to complete college for those entering in 1990 and 16 quarters to complete college for those entering in 1996, then the time it takes to complete college would have increased by more than 6%. Assuming it took less time for those entering in 1990 would only increase the magnitude of a one quarter increase. The decline in real earnings per time period was only 2%, far less than the 6% increase in the length of time.

(Turner 2004) that the fraction of high school graduates enrolling in college has increased. Theory predicts this will happen if the total benefits associated with college, both financial and non-financial, rise faster than the explicit tuition and implicit opportunity costs. It is of substantial interest to note that the students newly attracted by the changing market conditions will not be identical to the individuals who previously chose to attend college. If, as discussed above, these new entrants are more likely to be marginal students in terms of academic ability or non-traditional students who follow different enrollment patterns, then they will take longer to graduate. Thus, while increases in the rewards to a college degree will lead to increases in overall enrollment, the increased rewards may actually lead to decreased retention, increased time-to-graduation, as well as decreased graduation rates – at least for some parts of the population. It is critical that we determine whether observed changes in the time-to-graduation are caused by changes in the population attending college or by changes in the underlying behavior of students that affects their ability to complete a degree in a timely fashion.

Empirical Literature

There is substantial evidence that retention and graduation rates are a function of individual and household characteristics. Obvious references to this literature include the pioneering theoretical work on attrition by Tinto (1975) and Bean (1980), as well as the literature integrating these models (Cabrera, Castañeda, Nora, and Hengstler 1992) and extending it to non-traditional students (Bean and Metzner 1985).

The empirical literature in this field is substantial and includes rather standard logistic models (as in Wetzel, O'Toole, and Peterson 1999 and St. John, Hu, and Weber 2001), more complex logistic estimation (Kahn and Neuta 2001), survival analysis (as in Ishitani 2003 and Desjardins, Ahlburg, and McCall 1999), and even some time-to-graduation studies (DesJardin, Ahlburg, and McCall 2002; Knight 2004). However, most of these studies (all of those listed above) rely on data from a single institution and typically restrict analysis to the 'traditional' college population of recent high school graduates enrolled full-time. Since about forty percent of all undergraduates enroll in multiple institutions (Adelman 1999),

single institution measures of attrition overstate dropout rates from higher education. Attrition studies that use national data, at least in part to adjust for this oversight include Light (1996); Horn (1998); DesJardin, McCall, Ahlburg, and Moye (2002); Bradburn (2003); and Stratton, O'Toole, and Wetzel (2004a&c). Amongst these Horn (1998) and Stratton, O'Toole, and Wetzel (2004c) are unusual in distinguishing between stopout and dropout behavior. The latter paper suggests this distinction is important. Studies of or including non-traditional populations (Metzner and Bean 1987; Weiler and Piero 1988; O'Toole, Stratton, and Wetzel 2003; and Stratton, OToole, and Wetzel 2004b) are particularly rare, but suggest that these populations do behave differently relative to the more traditional populations, with different individual and household characteristics associated with their attrition. There is also evidence that attendance and persistence are a function of economic factors like wage rates and unemployment rates that influence the perceived costs associated with pursuing a degree (Stratton, O'Toole, and Wetzel 2004b, Light 1996).

Most of the empirical literature focuses on a single cohort of students; cross-time comparisons of time-to-degree are quite rare. Turner (2004) uses national data from the Current Population Survey to document that college enrollment rates have risen dramatically over the last three decades. She calculates that in 1970, 51% of 23 year old high school graduates reported having enrolled in college, while in 1999 this fraction had risen to 67%. At the same time, however, the fraction completing a BA degree rose only slightly, suggesting either an increase in time-to-degree or an increase in the dropout rate. Turner hypothesizes that enrollment and completion rates have changed in part because the collegiate options available to the general population have changed and in part because the population actually enrolling in college has changed. She concludes with a suggestion that data on collegiate enrollment patterns be used to study this important question.

Sources of such data include the Beginning Postsecondary Surveys conducted by the National Center for Educational Statistics of the Department of Education. The BPS:90/94 follows a national sample of students entering college in 1989-90. The BPS:96/01 follows a similar cohort entering in 1995-96. Horn and Berger (2004) provide a univariate comparison of these cohorts. They find that there is

some evidence that persistence – which could reflect time-to-degree – has increased, but not degree completion within a five year period following initial matriculation. While no multivariate analysis is conducted, the univariate analysis suggests that demographic factors, family background, financial aid, and economic circumstances may be important. The fact that more black, Hispanic, and low-income persons entered in the latter cohort could have acted to lengthen time-to-degree. The fact that fewer students were first generation college students may have increased persistence. The fact that more students relied on loans may have encouraged persistence to help pay off the loans. And finally, the poorer employment opportunities in the 2001 period may have reduced the opportunity costs associated with enrollment. Our analysis will substantially advance the work of Horn and Berger (2004) by using multivariate analysis to control for all these characteristics simultaneously.

Database & Data Construction

Our proposed research will utilize both the BPS:90/94 and the BPS:96/01. We propose to conduct substantive analysis with these data sets, but in order to do so we must create appropriate data extracts. We produced an extract from the BPS:90/94 database as part of an AIR Research Grant we received jointly with Dennis O'Toole in 2000. Our first step under the 2005 grant will be to construct a comparable extract from the BPS:96/01. These data extracts will differ from the raw data sets in several important ways.

First, we will restrict the sample to exclude individuals who are not actively seeking an academic post-secondary education. At this stage, we will include only those individuals seeking more than a certificate degree or, if this information is unavailable, to include only those individuals who report expecting to receive more than a trade school education both in the initial survey and in at least one of the follow-up surveys. This restriction was suggested by the NCES staff and was implemented to address concerns voiced by a referee during the 2000 grant review process.

Second, we will exclude enrollment data from institutions offering less than a two year program of instruction and from all other non-academic institutions. For example, even for those individuals who

report they are seeking an academic degree, attendance at trade schools and culinary institutes will not constitute academic enrollment for the purposes of our study. Our focus is on academic degree seekers.

Third, we will use the raw term-by-term enrollment data from the BPS to construct a term-by-term (semester or quarter, as appropriate) enrollment history for the six years encompassed by the 1996-2001 survey. Such a history will allow us to more accurately identify individuals who stop out for a term. To be included in the final data set, individuals will have to be enrolled for at least one non-summer term during the 1995-96 academic year. These term-by-term enrollment data will be used to construct the dependent variable for our analysis.

Our fourth step will be to extract and construct measures to serve as explanatory variables for the multivariate analysis. To this end we will use the rich demographic, household, and institutional data available within the survey. Variables such as gender and race are invariant over time, however, family characteristics such as marital status and family size do change over time. Some institutional factors, such as tuition, also change over time. For transfer students, institution specific data, such as attendance at a private versus a public, a 2-year versus a 4-year institution may change. Such changes require the construction of term-by-term measures. In addition, we will supplement the BPS data with information on economic factors likely to influence enrollment behaviors. Information on the unemployment rate in each respondent's home state by year and respondent's age will be collected from the Bureau of Labor Statistics and information on the average annual earnings of a full-time, full-year worker by education level, age, gender, race, and ethnicity will be collected from the 2000 Census. These data will be merged with the BPS data in order to construct measures of opportunity cost and earnings potential.

Our prior experience with the BPS:90/94 indicates that this data set construction process will consume a substantial block of time. It took us over three months to construct the 1990/94 extract. We expect to be able to replicate this effort with the BPS:96/01 in six weeks time with the assistance of a full-time programmer and the advantage of previous experience. The initial BPS:90/94 sample covered 7253 individuals. Our restrictions reduced this sample to approximately 5000 individuals. About seventy-five percent of those dropped from the analysis were not seeking an academic degree. The BPS:96/01 follows

a somewhat larger sample of over 8000 individuals. Once this data set has been modified to match our BPS:90/94 sample, we can use the data set not only for the research proposed here, but also for future research projects.

Statistical Analysis

We will begin our statistical analysis by determining if we observe differences across time in the characteristics of the academically-oriented cohorts of our samples. Since we lack information on those who chose not to begin college, it is not possible to look at selection into college for these two cohorts. However, we can use multivariate analysis to determine if there are variables that distinguish between the populations that enroll in 1989/90 and those that enroll in 1995/96. Our analysis will reveal if the socioeconomic distribution of those initial entrants pursuing an academic degree has changed over time.

Second, we will compare the enrollment patterns of the 1989/90 and 1995/96 cohorts over the remaining years of each survey. The data can be analyzed to determine if there have been any changes in progress towards a degree for the academically-oriented, college going population as a whole or, more importantly for our purposes, for particular subpopulations, such as older students. We will also replicate some of our own work using the BPS:90/94 (O'Toole, Stratton, and Wetzel 2003) which focuses on non-traditional enrollment patterns to see if these patterns have changed for the more recent cohort. Descriptive statistics will help reveal if the two cohorts exhibit substantially different enrollment patterns. Given our findings (2004a) using the BPS:90/94 data that stopout and transfer behavior may be linked, we will extend the analysis to take into account transfer behavior. Neither the Horn and Berger (2004) nor the O'Toole, Stratton, and Wetzel (2003) studies considered transfer behavior in any great detail.

Third, the BPS:96/01 follows survey respondents for a sixth year. This additional year of data is certain to provide valuable information, especially regarding the progress of 'non-traditional' college students. Individuals who interrupt their enrollment or who enroll part-time will necessarily take longer to complete a degree than individuals who are enrolled continuously on a full-time basis (the so-called

'traditional' college student). Having an extra year of data will help indicate the extent to which those engaged in a non-traditional path are actually continuing to make progress towards a degree.

Finally, multivariate analysis will allow us to examine how individual and family characteristics as well as economic circumstances affect both progress towards a degree and the enrollment path taken. This analysis could take one of several forms. We could estimate a nested model where individuals first decide whether or not to continue to pursue a degree and then decide how quickly to do so. In this case, there would be two discrete valued dependent variables, one taking a value of 0 if the individual decides to dropout and 1 if the individual decides to persist, and a second taking a value of 0 if the individual is still persisting after 5/6 years and 1 if the individual has completed a degree. Alternatively, the pattern could be modeled as a multinomial logit or even an ordered logit where the dependent variable takes a value of 1 for those dropping out, 2 for those still persisting, and 3 for those who have completed a degree. Another alternative would be to use a hazard model with competing risks where two possible outcomes are dropout and stopout, and the time to each is modeled in a continuous fashion. In theory, a continuous time hazard model could also be adapted to distinguish between continuous and discontinuous periods of enrollment. We will explore each of these alternatives to see which best explains the final observed outcomes, further modifying the specification to address transfer behavior and part-time enrollment where appropriate. Statistical tests will allow us to distinguish between the fit of at least some of the discrete valued alternatives (as opposed to the continuous time hazard models).

For the multivariate analysis we will employ measures of individual level demographic characteristics (race, gender, ethnicity, and age) and ability (first year GPA, self-reported ability), family background (parental education, family income), family composition (marital and parental status), institutional characteristics (type of school, distance from home, tuition), financial aid receipt (by type), and economic circumstances (local unemployment rates and wage rates) as explanatory variables, taking into account (where feasible) changes in family composition and institutional characteristics over time.

Most importantly this analysis will reveal whether or how the change in the distribution of new entrants has affected subsequent enrollment patterns over the time period of the two surveys. We will

conduct a Oaxaca-Blinder style decomposition that allows us to distinguish the separate effects of changes in behavior and changes in the population on the dependent variable. Thus, we will use the coefficient estimates from both our BPS:90/94 and BPS:96/01 based multivariate analyses to predict the outcomes for both the BPS:90/94 and the BPS:96/01 data. Theoretically, if the net benefits associated with a college degree have increased over the 1990-1996 time period, there is an incentive to complete school more quickly. Thus, the BPS:96/01 model should predict that the traditional college-going population is more likely to graduate and to do so in a shorter period of time than the BPS:90/94 model predicts. Conversely, the BPS:96/01 cohort will include more marginal students who would be less likely to persist or to graduate relative to conditions that existed for 1989/90 enrollees. Hence the BPS:90/94 model should predict more retention and faster time-to graduation than the BPS:96/01 model for the overall college-going population. Conversely the BPS:96/01model should predict more attrition, more stop-out behavior and longer time-to-graduation than the model based on 1989/90 data especially for these larger numbers of marginal and nontraditional students.

DISSEMINATION PLAN

We plan to utilize several approaches to disseminate our results. First, will be a report to be delivered at the AIR forum in 2006. Second, we will submit several papers to both higher education and economics journals for publication. We expect to get at least two publications from the research supported by this grant. Third, we will submit papers for presentation at several different economics associations' meetings such as the Allied Social Science Association meetings, as well as meetings of groups such as the Southern Economics Association. Fourth, we plan to present the results at a meeting of state groups such as VAMAP (Virginia Association of Management Analysis and Planning).

POLICY RELEVANCE AND INTENDED AUDIENCE

The results of this analysis should be of substantial interest to policy makers at both the national and state level. Policy makers (particularly at the state level where funding issues are of particular

interest) have responded to the public concern about graduation rates and time-to-degree by placing increasing emphasis on measures of degree completion in evaluating and funding higher education. It was in an effort to encourage potential students to better weigh the costs and benefits associated with college attendance, that Congress passed the Student Right to Know Act of 1990, forcing colleges to provide information to prospective students regarding graduation rates and first year retention rates. Yet there are substantial concerns with the graduation and retention rate measures reported under that act.

First, both rates are institution specific. Such measures fail to identify transfer students – although institutions are encouraged to provide information on transfer behavior where it is available. As a result, these measures necessarily fail to provide a clear picture regarding the overall level of educational attainment. Individuals who do not complete their degree at one institution may well do so at another. Second, retention rates are calculated by looking at fall term to fall term enrollment. Such measures will fail to distinguish between stop out and drop out, even at the same institution. There is evidence (Stratton, O'Toole, Wetzel 2004c) that many students who withdraw actually return to continue their studies. Thus, term-specific retention rates will understate persistence. Third, if these measures were to be used by applicants to compare institutions, they should control for heterogeneity in the student population across institutions. Even amongst students initially enrolling full-time in a fall semester, however, there are substantial differences across colleges in the fraction of older and of employed students. Age and employment status are likely correlated with later enrollment paths and so with time-to-graduation. All of the heterogeneity is not removed. Similarly, by excluding all those who enter in mid-year and initially enroll on a part-time basis, one can not compare even the unadjusted time-to-graduation across institutions. Partial controls for heterogeneity may be in some ways less desirable than no controls.

Federal guidelines attempt to control for cross-institutional heterogeneity by requiring that graduation rates be calculated only for those initially enrolled full-time. This provides no information on how well institutions serve part-time students who are more likely to be non-traditional students, a population that now constitutes a substantial share of the college going population. Nor does this

restriction remove all the heterogeneity even amongst full-time students across institutions. The probability with which those initially enrolling full-time will later enroll part-time clearly varies across institutions. Publication of first year retention and six year graduation rates provides potential students with some information regarding time-to-graduation, but there is room for improvement. The study proposed here will help inform policy makers as to whether there actually has been a significant change in progress towards a degree for equivalent students over the time period spanned by these two surveys and, by extension, since then or whether the observed change reflects a difference in the student population tilted toward non-traditional students who take longer to graduate. The current study may suggest some assessment measures that better control for such heterogeneity.

Better controls are particularly important since state level policy makers often design funding formulas based on measures such as enrollment and retention rates. Hence, both better data as well as data analysis that provides a consistent pattern of information across time is crucial. With the shift in the distribution of students toward non-traditional and part-time students attending urban institutions, there is a need to better understand how enrollment characteristics affect persistence and time-to-graduation. Funding all state institutions in the same manner without controlling for intrastate heterogeneity in the attending populations could have adverse consequences on within state educational attainment.

Institutional administrators and institutional researchers will also find this analysis of interest. Our approach is one that individual institutional researchers can utilize to evaluate their specific student population. Our analysis of national data will provide better overall measures of attrition and graduation.. These measures will provide a more accurate yardstick against which particular institutions can compare and contrast their performance while competing for limited state funds. This type of analysis may be of particular interest to institutions that enroll disproportionate numbers of non-traditional students and have seen substantial increases in enrollment over time as such institutions may report particularly poor or deteriorating progress towards degree for reasons that can be attributed not to their degree programs but rather to the changing population of students they are attracting.

INNOVATIVE ASPECTS OF THE PROJECT

Over the last several decades a substantial literature on initial college enrollment and persistence has emerged. The focus of much of this literature is on the role of direct costs and financial aid. Our research will utilize an alternative perspective based on the economic theory of human capital formation to examine college enrollment behavior. Our research will analyze persistence and time-to-graduation with a focus on the role of changing opportunity costs and benefits in changing attendance patterns. With an increase in the benefit/cost ratio of college attendance, economic theory suggests more academically marginal as well as more non-traditional students will enroll. Changes in the characteristics of the enrolling population may then lead to changes in attrition and enrollment paths, potentially especially to an increase in stopout behavior and/or part-time enrollment. Such enrollment choices will naturally increase time-to-graduation. We are not aware of any multivariate, in-depth statistical analysis that seeks to address these issues in the rigorous fashion we propose. More specifically, a multivariate approach enables us to account for a variety of factors that influence college enrollment and attendance patterns so that we can explore the more basic underlying factors that ultimately contribute to increased time-to-graduation.

References

Adelman, C. (1999). *Answers in the Tool Box: Academic Intensity, Attendance Patterns, and Bachelor's Degree Attainment*. Washington, DC: U.S. Department of Education.

Altonji, J. (1993). The Demand for and the Return to Education when Education Outcomes are Uncertain. *Journal of Labor Economics* 11(1): 48-83.

Bean, J. P. (1980). Dropouts and Turnover. The Synthesis and Test of a Causal Model of Student Attrition. *Research in Higher Education* 12(2): 155-87.

Bean, J. P. and Metzner, B. S. (1985). A Conceptual Model of Nontraditional Student Attrition. *Review of Educational Research* 55(4): 485-540.

Becker, G. (1964). *Human Capital*. New York: National Bureau of Economic Research.

Cabrera, A., Castañeda, M., Nora, A., and Hengstler, D. (1992). The Convergence Between Two Theories of College Persistence. *Journal of Higher Education* 63(2): 143-164.

DesJardins, S., Ahlburg, D., and McCall, B. (2002). A Temporal Investigation of Factors Related to Timely Degree Completion. *Journal of Higher Education* 73(5): 555-582.

DesJardins, S., Ahlburg, D., and McCall, B. (1999). An Event History Model of Student Departure. *Economics of Education Review* 18(3): 375-390.

Desjardins, S., McCall, B. Ahlburg, D. and Moye, M. (2002). Adding a Timing Light to the Toolbox. *Research in Higher Education* 43(1): 83-114.

Horn, L. (1998*). Stopouts or Stayouts? Undergraduates Who Leave College in Their First Year*. Washington DC: U.S. Department of Education (NCES 1999-087).

Horn, L. and Berger, R. (2004). *College Persistence on the Rise? Changes in 5 Year Degree Completion and Postsecondary Persistence Rates Between 1994 and 2000*. Washington DC: U.S. Department of Education (NCES 2005-156).

Ishitani, T.T. (2001). A Longitudinal Approach to Assessing Attrition Behavior Among First Generation Students. *Research in Higher Education* 44(4): 433-49.

Kahn, J.H. and Neuta, M.M. (2001). Social-cognitive predictors of first year college persistence: the importance of proximal assessment. *Research in Higher Education,* 42(6): 633-652.

Knight, W. E. (2004). Time to Bachelor's Degree Attainment: An Application of Descriptive, Bivariate, and Multiple Regression Techniques. *IR Applications* 2.

Light, A. (1996). Hazard model estimates of the decision to reenroll in school. *Labour Economics* 2: 381-406.

Metzner, B. S. and Bean J. P. (1987). The Estimation of a Conceptual Model of Nontraditional Undergraduate Student Attrition. *Research in Higher Education* 27(1): 15-37.

O'Toole, D., Stratton, L.S., and Wetzel, J. (2003). A Longitudinal Analysis of the Frequency of Part-time Enrollment and the Persistence of Students who Enroll Part-Time. *Research in Higher Education* 44(5): 519-37.

St. John, E. P., Hu, S., and Weber, J. (2001). State policy on the affordability of public higher education: the influence of state grants on persistence in Indiana. *Research in Higher Education* 42(4): 401-428.

Stratton, L.S., O'Toole, D.M., and Wetzel, J.N. (2004a). Comparing First Term and First Year College Attrition. Working Paper. Virginia Commonwealth University.

_____. (2004b). Factors Affecting Initial Enrollment Intensity: Part-Time versus Full-Time Enrollment. *Economics of Education Review* 23(2): 167-75.

_____. (2004c). A Multinomial Logit Model of College Attrition that Distinguishes Between Stopout and Dropout Behavior. Working Paper. Virginia Commonwealth University.

Tinto, Vincent. (1975). "Dropout from Higher Education: A Theoretical Synthesis of Recent Research", *Review of Educational Research* 45(1): 89-125.

Turner, S. (2004). "Going to college and finishing college: Explaining different educational outcomes." in C. Hoxby, ed. *College Choices: The Economics of Where to Go, When to Go, and How to Pay for It.* University of Chicago Press for NBER.

Wetzel, J. N., O'Toole, D. M., and Peterson, S.P. (1999). Factors Affecting Student Retention. *Journal of Economics and Finance* 23(1): 45-55.

Weiler, W. and Pierro, D. (1988). Selection Bias and the Analysis of Persistence of Part-Time Undergraduate Students. *Research in Higher Education* 29(3): 261-272.

J. WETZEL - NARRATIVE

Due to my research and publication record in economic education, I was selected as a Pew Research Fellow at Princeton in the summer of 1988. That served to substantially upgrade my statistical skills involving panel data and limited dependant variable data. Although Dr. Stratton is substantially more of an expert on these topics and teaches a graduate level course on the statistical use of panel data, this background provides a good working synergy on the research we propose.

As the result of a three-year FIPSE grant pertaining to tuition differentials in the early 1990s, my research interest has substantially moved toward enrollment and retention issues in the economics of higher education. We are at one of the three research institutions in the state, an urban commuter-based institution with large numbers of non-traditional students who move in and out of the system. Thus, a particular research focus is on the price sensitivity of different subsets of the student population as well as on the variation of enrollment patterns of non-traditional students. These research interests lead to issues involving student behavior and the initial decisions to enroll, as well as later decisions to remain in school or withdraw from formal education.. Furthermore, having non-traditional friends who attend in a cyclical pattern due to work, has raised the interesting question of how individuals like that are reported or treated in terms of statistical research. Knowing students who attend full-time one semester, such as the fall, and never attend in the spring semester, it seems strange to consider them as dropouts each spring and to treat them the same as students who “really” do dropout never to return

As a result, the issue of withdrawals, dropouts and stepouts is of substantial interest.. One obvious issue is how many people fall into these categories. Another issue concerns what factors influence these student behavior patterns. In terms of my professional growth, there has been a

long interest in higher education first from the standpoint of economic education and more recently on the economics of higher issues. These are all issues that have substantial public policy implications and it is interesting to work on research projects which are both intellectually stimulating and where there are some useful policy implications. My long term goal is to continue research on college enrollment patterns and futher advance knowledge in this area.

JAMES NORMAN WETZEL

Professor
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EDUCATION

Ph.D., University of North Carolina, 1974.
B.S., University of Wisconsin, 1967.

ACADEMIC APPOINTMENTS

Virginia Commonwealth University, 1974 – present.
(On leave to Boston University 1979-1980).
Acting Center Director, VCU Center of the Virginia Council for Economic Education, 1981-1982.

Boston University Overseas Program, Assistant Professor, 1979-1980.

University of North Carolina at Greensboro, Visiting Instructor,1972 -1974,
Public Finance, Macroeconomic Theory, Money and Banking, Principles.

Virginia Military Institute, Visiting Instructor, 1969-1971,
Introductory Mathematical Economics, Statistics, Principles.

SPECIAL AWARDS, FELLOWSHIPS AND OTHER HONORS

Association for Institutional Research, Improving Institutional Research in Postsecondary Educational Institutions Grant Program, with Leslie Stratton and Dennis O'Toole, Summer 2003.
Co-Recipient of 2001 Charles F. Elton Best Paper Award for paper presented at AIR Forum in June 2001, with Leslie Stratton and Dennis O'Toole of VCU.
Spencer Foundation with Dennis O'Toole and Leslie Stratton, Summer 2001.
Association for Institutional Research Improving Institutional Research in Postsecondary Educational Institutions Grant Program, with Dennis O'Toole and Leslie Stratton, Summer 2000.
Fund for the Improvement of Post-Secondary Education, U.S. Department of Education, with Dennis O'Toole. Three Year Grant 1992-1995
Pew Trust Visiting Research Fellow - Princeton University Summer 1988.
Teacher of the Year Award, Economics Department 1983-1984 (First Year Awarded).
Southern Business Administration Association Research Grant with Amy Dalton and Eleanor

Snellings, 1981-82.
Joint Council on Economic Education Research Grant with Dennis O'Toole (VCU) and James Charkins (San Bernardino State) 1981-82.
Real Estate and Urban Land Development Faculty Research Grant, Winter, 1980-1981.
National Science Foundation Short Course on Risk-Benefit Analysis, 1978-1979.
National Science Foundation Short Course on Alternative Energy Sources, 1977-1978.
Virginia Commonwealth University Faculty Grant-in-Aid Research Support, Summer, 1975.
National Science Foundation Summer Institute on Environmental Economics, Summer, 1973.

PUBLICATIONS

JOURNALS

"*Factors Affecting Initial Enrollment Intensity: Part-Time versus Full-Time Enrollment*". (with Leslie Stratton and Dennis M. O'Toole) Economics of Education Review, 23, No. 2 (April 2004), pp. 167-175.

"*A Longitudinal Analysis of the Frequency of Part-Time Enrollment and the Persistence of Students Who Enroll Part-Time*". (with L. Stratton and D. O'Toole) Research in Higher Education, 44, No. 5 (October 2003), pp. 519-537.

"*Is the Textbook a Waste of Time and Money for Undergraduate Education in the Business School? Some Evidence,"* (with M. Spinelli and D. O'Toole), Virginia Social Sciences Journal, Volume 38, March, 2003.

"The Important Learning Dimensions in a School of Business: A Survey of Students and Faculty" (with D. O'Toole and M. Spinelli), Journal of Education for Business, vol. 75 #6, 2000, pp. 338-342

"*Marketing Technology Fees in a Public Urban University to Non-Traditional Students,*" (with M. Little and D. O'Toole), Journal of Marketing for Higher Education vol. 10 #1, 2000, pp. 1-12.

"*Factors Affecting Student Retention Probabilities: A Case Study,"* (with D. O'Toole and S. .Peterson), Journal of Economics and Finance vol. 23, 1999, pp. 45-55.

"*An Analysis of Student Enrollment Demand*" (with D. O'Toole and S. Peterson), Economics of Education Review, 1998, pp. 47-54.

"*The Price Differential's Impact on Retention, Recruitment, and Quality in a Public University*" (with D. O'Toole and M. Little), Journal of Marketing for Higher Education, 1997, pp. 37-51.

"*A Qualitative Response Model of Student Performance on a Standardized Test*"(with D. O'Toole and E. Millner), Atlantic Economic Journal, 1992, pp.18-25.

"The Welfare Effects of Omitting Substitute Prices and Qualities from Travel Cost Models: Comment", Land Economics, Feb. 1991, pp. 130-31.

"*Economic Issues Involving Property Rights to School Attendance*", Economics of Education Review, 1989, pp. 255-62.

"Educational Property Rights: Transactions for the Improvement of Education", The Educational Forum, Fall, 1987, pp. 33-41

"*Linking Teacher and Student-Learning Styles with Student Achievement and Attitudes*", (with D. M. O'Toole and J. Charkins), Journal of Economic Education, Spring 1985, pp. 111-120.

"*Transferable Property Rights to Education*," Land Economics, May, 1985, pp. 213-216.

"*Schools and Housing Values: Comment*," Land Economics, February, 1983, pp. 131-134.

"*The Consumer Demand for Automobiles: A Disaggregated Market Approach*", (with G. Hoffer), Journal of Consumer Research, September, 1982, pp. 195-199.

"*The Influence of Student Learning Styles and Instructor Teaching Styles on Student Output in Economics Principles: A Case Study*", (with D. O'Toole and J. Potter), Journal of Economic Education, Winter 1982, pp. 33-39.

"*Scholastic Effort: An Empirical Test of Student Choice Models*", (with P. Kips, R. Prince and H. Wilhelm), Journal of Economic Education, Summer 1981, pp. 15-25.

"*Congestion and Economic Valuation: A Reconsideration*", The Journal of Environmental Economics and Management, June, 1981, pp. 192-195.

"*Measuring Student Scholastic Effort: An Economic Theory of Learning Approach,"* Journal of Economic Education, Fall, 1977, pp. 34-41.

"*Estimating the Benefits of Recreation Under Conditions of Congestion,"* Journal of Environmental Economics and Management, September, 1977, pp. 239-246.

"*The Federal Role in the Economy*," Current History, November, 1975, pp. 179-182.

"*Evaluation of Recreation Benefits Accruing to Recreators on Federal Water Projects -- A Review Article: A Comment*", American Economist, Fall, 1974, p. 129.

MONOGRAPHS OR PAPERS IN PROCEEDINGS

"*An Appraisal of the Importance of the Textbook for Undergraduate Learning in the School of Business: A Survey of Students and Faculty*" (with D. O'Toole and M. Spinelli), Proceedings of the 5th International Conference of the Decision Sciences Institute July 4-7, 1999.

Access to Solar Energy: Who Owns the Sun, Research Monograph Number 7, Real Estate and Urban Land Development Program, V.C.U., Richmond, Va.

"*Solar Heating and Cooling: Legal Access to the Sun*", Selected Papers of American Business Law Association Regional Proceedings, 1978, pp. 165-175.

L. STRATTON – NARRATIVE

I am a labor economist with substantial research expertise in the handling of large data sets as well as panel and nonlinear econometric analysis. In the course of my research I have used a variety of large, national, panel data sets. These include the National Longitudinal Survey of Young Women, the Panel Study of Income Dynamics, and the National Survey of Families and Households. More to the point for this proposal, my colleagues (James Wetzel and Dennis O'Toole) and I used a 2000 AIR research grant to construct a sample from the 1990/94 Beginning Postsecondary Longitudinal Student Survey (BPS). This is one of the data sets that will be used for the proposed analysis. As regards econometrics, I studied under Daniel McFadden and Jerry Hausman at M.I.T. and have kept these skills up-to-date by applying the techniques in my own research and by teaching specialized graduate level econometrics courses in these topics at both the University of Arizona and Virginia Commonwealth University. I am familiar with a number of different statistical packages including SAS, STATA, and LIMDEP. I am also familiar with weighted analysis and complex sample design. STATA is readily able to handle such analysis even with nonlinear specifications.

My research focus has been upon how individuals allocate their time and how that allocation influences labor market outcomes. I have explored the decision to work part-time and the decision to interrupt employment (or stop-out). I have and am continuing to examine the role household production has upon the employment decision and the employment outcome. Following my move to Virginia Commonwealth University in the summer of 1997, I began looking at enrollment in postsecondary institutions as another use of time. This interest was stimulated by discussions with colleagues here at VCU and by the synergies I observed between my work analyzing employment decisions and the field of post-secondary enrollment studies. In

June of 1999, I attended the AIR Summer Institute on the Databases of the National Center for Education Statistics (NCES). Here I was introduced to the rich national data sets available on the same topic. During the summer of 1999, my colleagues and I obtained a license to access several restricted access NCES data sets including the BPS90/94.

With the help of our 2000 and 2003 AIR Research Grants, my colleagues at VCU (James Wetzel and Dennis O'Toole) and I have made a number of contributions to the education field. We have documented the prevalence of part-time and stopout behavior using the longitudinal data from the 1990-94 BPS (Research in Higher Education, 2003). We have extended the standard human capital model of college enrollment to distinguish between full-time and part-time enrollment and then tested some of the predictions of this model using the same data. Here we found clear evidence that employment opportunities are significant determinants of part-time enrollment (Economics of Education Review, 2004). We have also documented the sensitivity of attrition models to the term of analysis (paper submitted to Research in Higher Education) and in perhaps our best work found tested for and found significant differences between those who stop out and those who drop out of college (under revision for Economics of Education Review). In work for the Spencer Foundation, we have further exploited the human capital model to look at the first to second term enrollment decision using a multinomial logit model conditional upon first term enrollment status. This model distinguishes between part-time, stopout, and dropout status for second term enrollment and looks for differences between those initially enrolled part-time and those initially enrolled full-time. We are currently revising this paper to control for sample selection bias based on the decision to initially enroll on a full-time as opposed to a part-time basis. My long-term goal is to integrate these studies of enrollment patterns with the labor economics literature on education and labor market outcomes.

LESLIE S. STRATTON

Associate Professor
Department of Economics
Virginia Commonwealth University
P.O. Box 844000
Richmond, VA 23284-4000
lsstratt@vcu.edu
(804) 828-7141

EDUCATION

Massachusetts Institute of Technology: Ph.D. in Economics, May 1989.
Dissertation: Two Essays on Women in the Labor Market:
The Effects of Time Spent Not Employed and
The Determinants of Part-time and Full-time Work.
Main Advisors: Henry S. Farber and Daniel McFadden.

Wesleyan University, Middletown, CT; B.A., 1981.
Mathematical-Economics (Departmental Honors) and Government.

ACADEMIC POSITIONS

2001-date: *Associate Professor*, Department of Economics, VCU.
2004-date: *Research Fellow*, IZA, Bonn, Germany.
2003-2004: *Visiting Professor*, Århus School of Business, Århus, Denmark.
1997-2001: *Assistant Professor*, Department of Economics, VCU.
1989-1997: *Assistant Professor*, Department of Economics, University of Arizona.
1988-1989: *Instructor*, Department of Economics, University of Arizona.

RECENT & RELATED FELLOWSHIPS, AWARDS, AND GRANTS

The Danish Research Agency. "Parents' allocation of time: Mothers' careers and children's educational attainment." PI: Professor Nina Smith at the Aarhus School of Business, Aarhus, Denmark. August 2004-July 2007. 2.3 Million Danish Kroner. Provides 1 month salary for each of 3 years plus some travel expenses.

Research support from the Center for Research in Social Integration and Marginalization. Aarhus School of Business, Aarhus, Denmark. 2003-2004.

Association for Institutional Research, Improving Institutional Research in Postsecondary Educational Institutions Grant Program, with J. Wetzel and D. O'Toole, Summer 2003, $27,642.

Faculty Excellence Award for Research, VCU, Summer 2002.

Lifetime member Beta Gamma Sigma, 2001+.

Recipient of 2001-2002 VCU School of Business Distinguished Scholar Award.

RECENT & RELATED FELLOWSHIPS, AWARDS, AND GRANTS (cont.)

Recipient of 2001 Charles F. Elton Best Paper Award for paper presented at AIR Forum in June 2001, with James Wetzel and Dennis O'Toole of VCU.

Faculty Excellence Award for Research, VCU, Summer 2001.

Coauthor of paper identified as one of the top 20 articles published in 2000 on Work-Family Research by Rosabeth Moss Kanter Award committee.

Spencer Foundation, Small Research Grants Program, with J. Wetzel and D. O'Toole, Summer 2001, $30,000.

Association for Institutional Research, Improving Institutional Research in Postsecondary Educational Institutions Grant Program, with J. Wetzel and D. O'Toole, Summer 2000, $29,997.

Summer Institute on the Databases of the National Center for Education Statistics, 1999 Fellowship.

Faculty Excellence Award for Research, VCU, Summer 1999.

Faculty Grant-in-Aid Award, VCU, Summer 1998.

RECENT & RELATED PUBLICATIONS

"*Parental Child Care in Single Parent, Cohabiting, and Married Couple Families: Time Diary Evidence from the United Kingdom*". (with Charlene Kalenkoski at Ohio University and David Ribar at George Washington University) American Economic Review, forthcoming.

"*Factors Affecting Initial Enrollment Intensity: Part-Time versus Full-Time Enrollment*". (with Dennis M. O'Toole and James N. Wetzel, Virginia Commonwealth University) Economics of Education Review, 23, No. 2 (April 2004), pp. 167-175.

"*A Longitudinal Analysis of the Frequency of Part-Time Enrollment and the Persistence of Students Who Enroll Part-Time*". (with D. M. O'Toole and J. N. Wetzel) Research in Higher Education, 44, No. 5 (October 2003), pp. 519-537.

"*Gains from Trade and Specialization: The Division of Work in Married Couple Households*". In Women, Family, and Work, edited by Karine S. Moe, pp. 65-84. Oxford: Blackwell Publishers, 2003.

"*Examining the Wage Differential for Married and Cohabiting Men*". Economic Inquiry, 40, No. 2 (April 2002), pp. 199-212.

"*Housework and Wages*". (with Joni Hersch, Lecturer on Law, Harvard Law School) Journal of Human Resources, 37, No. 1 (Winter 2002), pp.217-229.

"*Why Does More Housework Lower Women's Wages?: Testing Hypotheses Involving Job Effort and Hours Flexibility*". Social Science Quarterly, 82, No. 1 (March 2001), pp. 67-76.

"*Household Specialization and the Male Marital Wage Premium*". (with Joni Hersch) Industrial and Labor Relations Review, 54, No. 1 (October 2000), pp. 78-94.

"*Housework, Fixed Effects, and Wages of Married Workers*". (with Joni Hersch) Journal of Human Resources, 32, No. 2 (Spring 1997), pp. 285-307.

"*Are 'Involuntary' Part-Time Workers Indeed Involuntary?*". Industrial and Labor Relations Review, 49, No. 3 (April 1996), pp. 522-536.

WORKING PAPERS

"*A Multinomial Logit Model of College Attrition that Distinguishes Between Stopout and Dropout Behavior*". With D. O'Toole and J. Wetzel. Under revision for Economics of Education Review.

"*Comparing First Term and First Year College Attrition*". With D. O'Toole and J. Wetzel. Submitted to Research in Higher Education. November 2004.

"*Are the Factors Affecting Dropout Behavior Related to Initial Enrollment Intensity for College Undergraduates?*". With D. O'Toole and J. Wetzel. June 2003.

"*Specialization in Household Activities within Cohabiting versus Married Households* ". May 2004.

"*The Male Marital Wage Differential: Race, Ability, and Training*". With William M. Rodgers, III, Rutgers University. March 2004.

PROFESSIONAL AFFILIATIONS

American Economic Association.
Association for Institutional Research.
Committee on the Status of Women in the Economics Profession.
Society of Labor Economists.
Population Association of America.
Western Economic Association.

RECENT RELATED SCHOLARLY PRESENTATIONS

"*The Importance of Distinguishing Between Stopouts and Dropouts: How Institutional Researchers Can More Effectively Address At-Risk Students*". (summary of work with D. O'Toole and J. Wetzel) presented at the Virginia Association of Management Analysis and Planning in Virginia Beach, VA, November 2004.

"*A Multinomial Logit Model of College Attrition that Distinguishes Between Stopout and Dropout Behavior*". (with D. O'Toole and J. Wetzel) presented at the Århus School of Business in Århus, Denmark in September 2003 and at Rørvig, Denmark in April 2004.

"*Analyzing the Decision to Enroll in College on a Part-Time versus a Full-Time Basis*" (with D. O'Toole and J. Wetzel) presented at VCU, March 2002, and at the June/July 2002 meeting of the Western Economic Association.

"*Factors Affecting Part-Time College Enrollment Within the First Year*" (with D. O'Toole and J. Wetzel) presented at the AIR Forum in Long Beach, CA, June 2001.

BUDGET PAGE

RESEARCH GRANT PROJECT TITLE:

Progress Towards a Degree: A Comparison of Academic Degree Seeking Students from the 1990-94 and 1996-2001 Beginning Postsecondary Surveys

Personnel		
Principal Investigator: Dr. Wetzel		
1-FTE summer months @ $8,500/month	$8,500	
Investigator: Dr. Stratton		
1-FTE summer months @ $8,500/month	$8,500	
Technical Assistant		
6 weeks, 40 hours per week @ $30/hour	$7,200	
Total Salaries and Wages		$24,200
Fringe Benefits @ 8.3%	$2,009	
Travel to AIR Forum in New Orleans 2006	$3,000	
Total Benefits and Travel		$5,009
TOTAL AMOUNT OF AWARD		**$ 29,209**

Current and Pending Support

Principal Investigator: James N. Wetzel

None.

Investigator: Leslie S. Stratton

Current: Leslie S. Stratton is party to a grant from the Danish Research Agency entitled, "Parents' allocation of time: Mothers' careers and children's educational attainment." The principal investigator on this grant is Professor Nina Smith of the Aarhus School of Business, Aarhus, Denmark. Leslie Stratton will be allocating 1 month a year to this research for the following three years (2005, 2006, and 2007) and receiving commensurate pay.

Pending: Leslie S. Stratton will be applying for a Virginia Commonwealth University, School of Business, Summer Research Grant for the Summer of 2005, to provide 1 month of support. The title of this application is, "The Danish Marital Wage Differential". In the event that she receives an AIR Grant, she will remove herself from consideration for this grant.

FACILITIES, EQUIPMENT AND OTHER RESOURCES

We have the facilities, equipment, and resources needed to complete the proposed research. Virginia Commonwealth University is a Carnegie DR Ext Research University. We are all equipped with state-of-the-art personal computers and up-to-date software.