ASSESSING ACADEMIC ACHIEVEMENT IN BLACK STUDENT ACADEMIC SUPPORT IN RESEARCH I UNIVERSITIES: A CALIBRATED PRACTICE MODEL

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A Calibrated *Practice* Model

ABSTRACT

Practitioner-scholar management programs for student engagement are necessarily *multifaceted*. They serve multiple *functions* and operate *under decidedly different conditions*. The multiplicity of forms and functions make student academic support practices difficult to submit to a sustained evidence-based inquiry. Nevertheless, in spite of the variability of conditions and contingent purposes of student academic engagement, it is feasible to practice and to provide service research to enhance student academic support. One way to do this is to provide a *calibrated* set of observations that can appraise academic achievements of particular groups or cohorts in a university and still withstand the dynamic shifts of practices of student academic support. The calibration will serve as a management model. The context is the field of student engagement. The practice model is a potential package for consulting and coaching practitioners at other research I institutions where black students, the focus of this particular work, are 10% of the total student population or fewer.

KEY WORDS

Strategy, management, educational leadership, calibrated practice model, student academic support.

A CALIBRATED PRACTICE MODEL

There are six way stations in gauging academic achievement in our calibrated practice model.

(I) In educational leadership and other management models where we want to gain competitive advantage (Porter, 2011), *we chiefly manage to a strategy*. (II) We scan the landscape as we collect *raw data broadly* for our study. (III) We anticipate questions about *comparisons outside the immediate scope of our study* and assess different but proximal cohorts with descriptive statistics. (IV) We anticipate questions about the impact of a previous practice on *the performance of preceding cohorts* and address them with inferential statistics; (V) we independently *assess the internal climate* in which students study. (VI) We observe *external threats* to the learning environment that the University community did not anticipate..

In the present work, we offer the calibration as one practice model of student academic support. The various statistical measures within each component are supporting tools to demonstrate gauges in the calibration. This calibrated practice model is illustrative rather than prescriptive so that each institution can decide what proximal measures would fit their respective strategic imperatives.

Now, within the emerging tradition and context of executive doctoral programs and practices, where does this calibrated practice model fit? Bulger et al. (2018) have produced a comprehensive account of the breadth and impact of executive doctoral programs on management practice. They identified eight activities where executive doctoral programs are having the most practical impact; namely, "1) direct management application, 2) teaching or educational engagement, 3) consulting or coaching, 4) knowledge productivization, 5) engagement in communities of practice, 6) creating communities of practice, 7) public speaking, and 8) influencing policy." The present paper focuses on the first three activities, to wit, 1) direct management application, 2) teaching or educational engagement, and 3) consulting or coaching. In short, this calibrated practice model shows how we lead by managing to a strategy,

how we observe over time the outcomes of our student engagement practices, and how we can package this calibrated model in consulting with other institutions or coaching other practitioners. As a highly ranked research I institution whose Office of African-American Affairs provides multi-dimensional services for black students, we are often asked the following: "What is your secret sauce?" The calibration below is one answer.

PART I

Strategy:

Identity and Differentiation

Drive Academic Achievement and Leadership Successes.

In order to provide a high-impact student academic engagement practice that creates and sustains superior performance, the inaugural stance of this paper is that one has to manage to a strategy (Porter, 1985). In that tradition, we must take *strategy to constitute positioning*. In this regard, positioning is about earning and sustaining an organization's pre-eminent stature in order to gain competitive advantage over its peer institutions. Such an organization is the University of Virginia. In this paper, *our focus is the support services for African-American students at the Office of African-American Affairs (OAAA) and how we calibrate different components of our support system while we meet different challenges within and outside the university.*

What is the strategy? We want to align high graduation rankings with correspondingly high graduation grade-point averages as well as furnish our students with non-cognitive skills and competencies (Apprey, et al., 2014). That work of alignment is done and continues to be updated. In this paper, *the method of calibration of student progress* is proposed. To

that end, six way stations are addressed. Each way station requires and can later benefit from an extensive study.

*A **model of strategic positioning*** is formulated or identified if a model of choice already exists.

Here, an existing model (Porter, 1985) is modified to serve our purpose of foregrounding the strategy. The premise here is that ***in order to provide sustained and pre-eminent leadership, one manages to a strategy.*** Central to our strategic position is the question: what needs are we trying to serve? Specifically, we want our students to complete their undergraduate studies with prospects; namely, admission into graduate and professional schools and competitive work places.

The drivers for this strategy are *differentiation* and *identity*. *Differentiation* speaks to the deployment of a specific ***cluster-mentoring program***. This cluster aggregates three distinct and dovetailed mentoring programs to enable our students to reach their academic and non-cognitive achievement goals so that they could successfully compete in the world (Apprey at al., 2014). *Identity* speaks to the fostering of their identity brand as African-Americans with a relative capacity to give an account of what value-added assets they bring to the academy and to the work place specifically because they are African-American and have implicit access to non-cognitive fund of knowledge about how people of color situate themselves in the world.

Model of Strategic Positioning
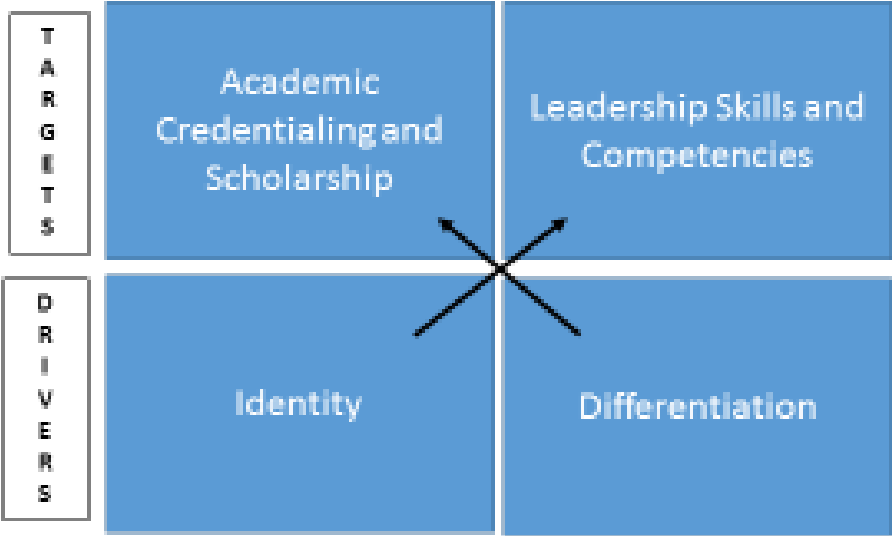## (Appropriating and Modifying Michael E. Porter's *Competitive Strategy*)

	Academic Credentialing and Scholarship	Leadership Skills and Competencies
T A R G E T S		
D R I V E R S	Identity	Differentiation

Table 1

PART II

Scenic Montage:

Trends of Academic Achievement

A collection of *trends of academic achievements* follows. These trends can begin with *raw scores* that enable the practitioner to identify individual students that need or do not require support services. Here *we focus on only our target population of African-Americans in a predominantly white university in the United States.* We begin with raw scores to give us *a scenic montage*, as it were, of how our target students are distributed over multiple performance domains using grade point averages to separate them. By using raw scores, we are looking for directions as well as identification of which particular students need extraordinary support for retention or graduation. Percentages follow to refine the identified trends. An r-square can be plotted to determine how linear a changing trend is. Here, an r-square above 0.5 is an encouraging upward trend. This scenic montage serves as a template and database for sophisticated descriptive and inferential statistics that follow in the remaining way stations.

Academic achievements expressed as performance trends

Six Accounts:

- ➤ Graduating GPA 3.4 – 4.0 (2006 – 2018) Raw Scores (see Table 2a)
- ➤ Graduating GPA 3.0 – 3.399 (2006 – 2018) Raw Scores (see Table 2b)
- ➤ Graduating GPA 3.0 – 4.0 (2006 – 2018) Raw Scores (see Table 2c)
- ➤ Graduating GPA 3.0 – 4.0 (2006 – 2018) Percentages (see Table 2d)
- ➤ Graduating GPA 3.0 – 4.0 (2006 – 2018) R- squared (see Table 2e)
- ➤ 4th year students with GP 0.00 – 1.999 (see Table 2f)

In collecting the data for our scenic montage, we start with Table 2a.

Table 2a tells us how many student are well positioned to matriculate at competitive graduate and professional schools or compete for positions in competitive work places.

Graduating GPA
3.4 - 4.0
2006 – 2018
Raw Scores
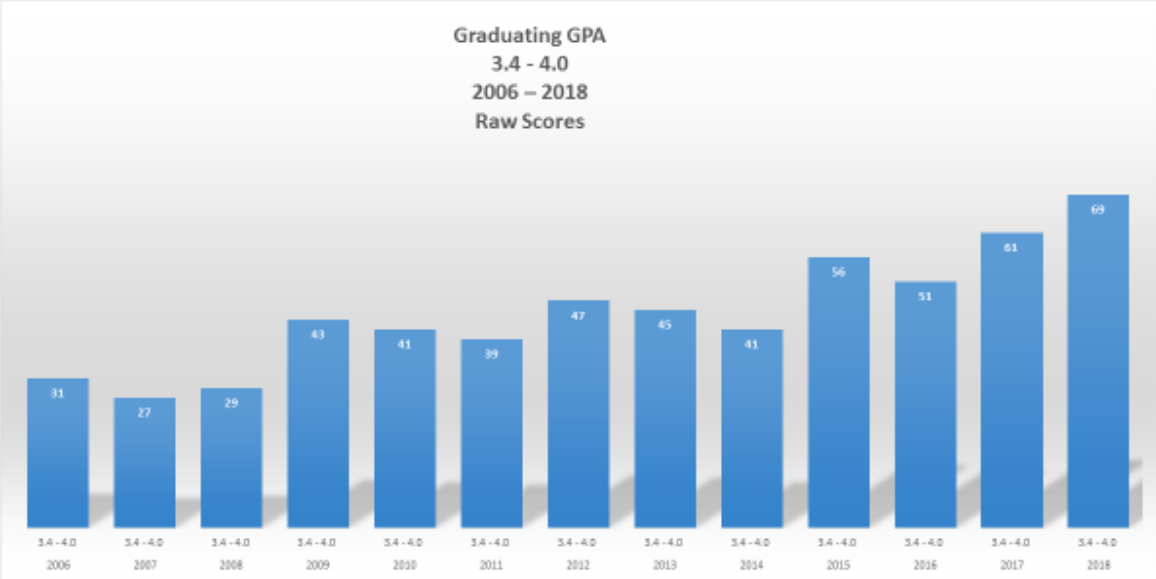
Table 2a

In Table 2b we continue to get a picture of how many we need to follow up in post-baccalaureate, pre-legal and other professional preparations in order to arrive at their career destinations.

Graduating GPA
3.0 - 3.399
2006 – 2018
Raw Scores

82	63	75	76	61	97	104	84	82	91	90	75	117
3.399 - 3.0	3.399 - 3.0	3.399 - 3.0	3.399 - 3.0	3.399 - 3.0	3.399 - 3.0	3.399 - 3.0	3.399 - 3.0	3.399 - 3.0	3.399 - 3.0	3.399 - 3.0	3.399 - 3.0	3.399 - 3.0
2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018

Table 2b

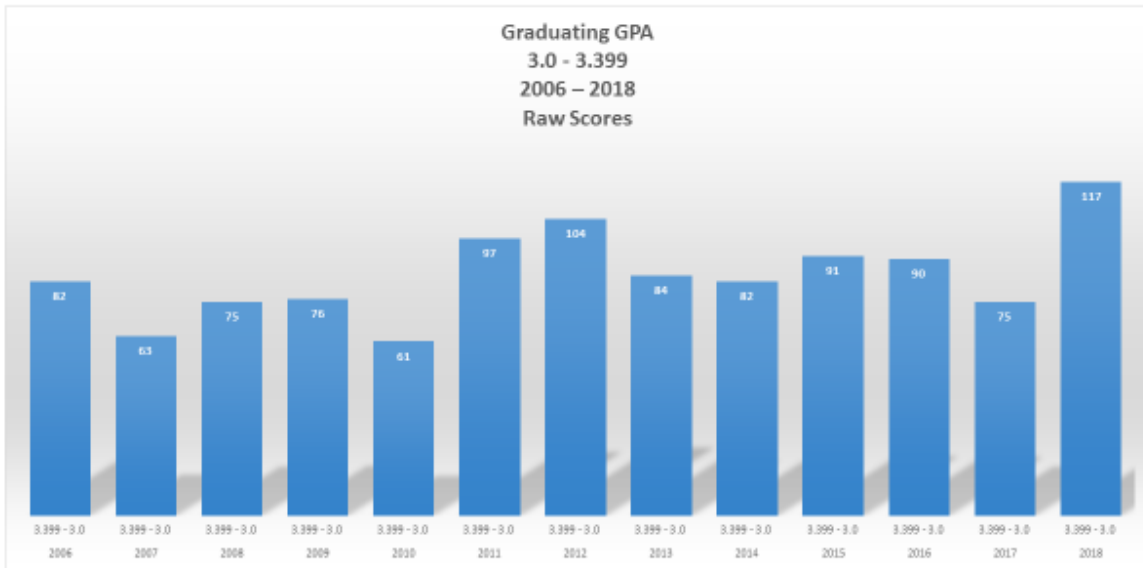In Table 2c we get a big picture of how many students altogether are well on their way to fulfilling their career goals and aspirations.

Graduating GPA
3.0 − 4.0
2006 − 2018
Raw Scores

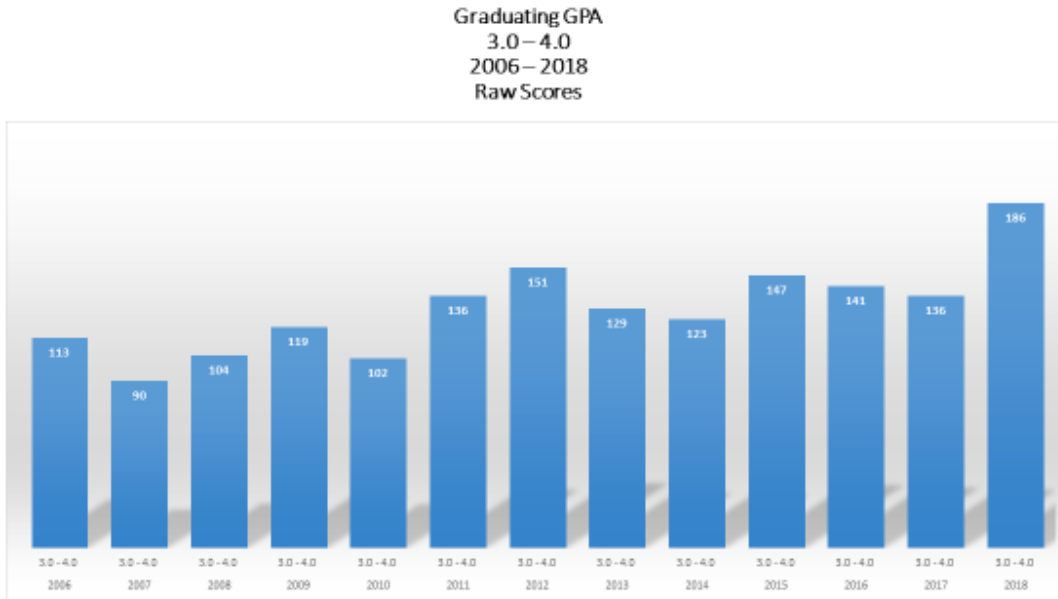| 3.0-4.0 2006	3.0-4.0 2007	3.0-4.0 2008	3.0-4.0 2009	3.0-4.0 2010	3.0-4.0 2011	3.0-4.0 2012	3.0-4.0 2013	3.0-4.0 2014	3.0-4.0 2015	3.0-4.0 2016	3.0-4.0 2017	3.0-4.0 2018
113	90	104	119	102	136	151	129	123	147	141	136	186

Table 2c

Now we can compute percentage to assess if we as practitioners are fulfilling our strategic goals.

Graduating GPA
$3.0 - 4.0$
$2006 - 2018$
Percentages

41.89%	36.14%	37.41%	38.76%	40.36%	34.86%	49.50%	49.80%	49.79%	59.03%	63.80%	58.11%	65.49%
3.0-4.0	3.0-4.0	3.0-4.0	3.0-4.0	3.0-4.0	3.0-4.0	3.0-4.0	3.0-4.0	3.0-4.0	3.0-4.0	3.0-4.0	3.0-4.0	3.0-4.0
2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
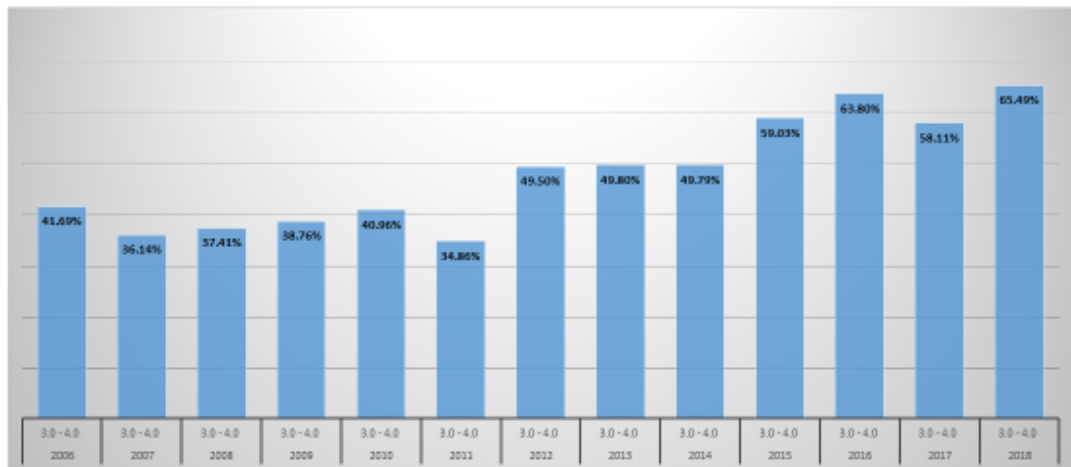
Table 2d

An R-squared tells us if the change from year to year is linear and going in the right direction.

Graphing GPA
3.0 − 4.0
2006 − 2018
R-squared

$y = 5.1374x + 93.038$
$R^2 = 0.6349$

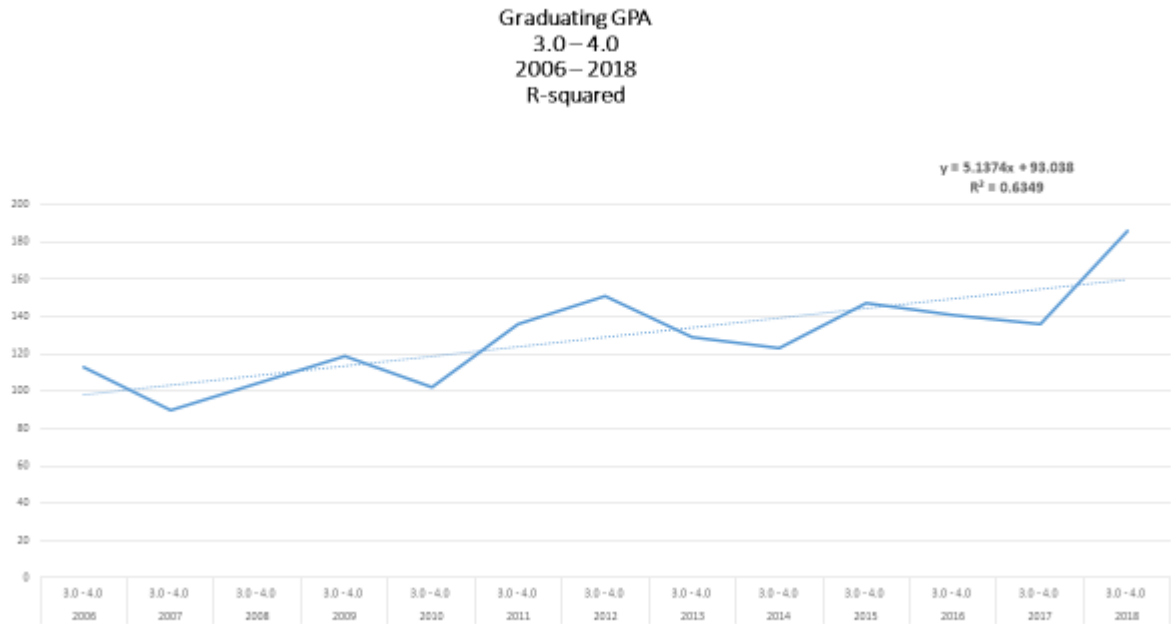|	3.0 - 4.0 2006	3.0 - 4.0 2007	3.0 - 4.0 2008	3.0 - 4.0 2009	3.0 - 4.0 2010	3.0 - 4.0 2011	3.0 - 4.0 2012	3.0 - 4.0 2013	3.0 - 4.0 2014	3.0 - 4.0 2015	3.0 - 4.0 2016	3.0 - 4.0 2017	3.0 - 4.0 2018

Table 2e

Tables 2a-2e tell us that there is a consistent and progressive upward trend in performance at graduation. This trend, then, must logically contrast with the number of potential graduates who need extraordinary support services to graduate. This decline in the number of at risk students follows in Table 2f.

Still using raw scores, Table 2f tells us *how many* students and *which* individual students we need to make extraordinary efforts to assist. This information will also tell us how many students and which ones could graduate with their class or in the following summer.
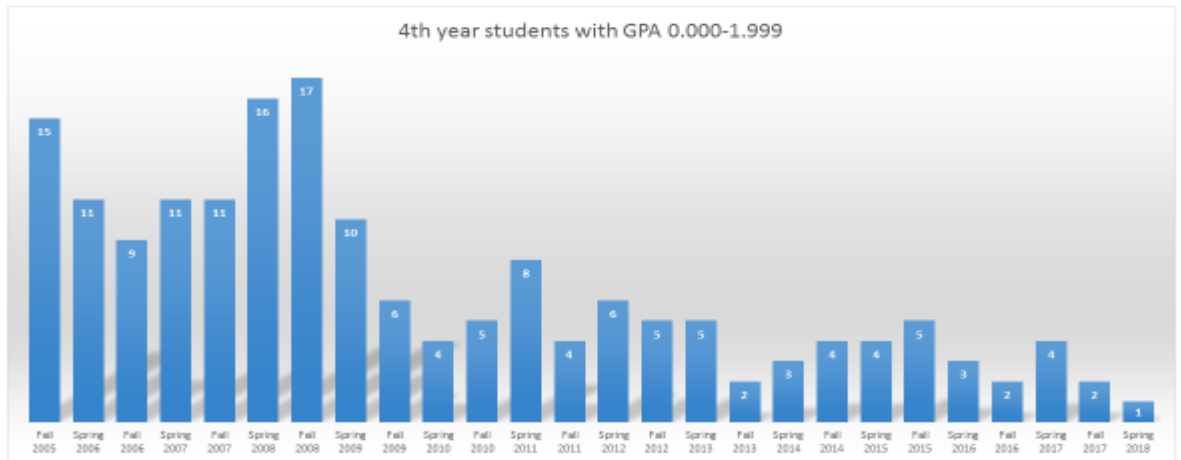

4th year students with GPA 0.000-1.999

Table 2f

PART III

Resolving the Problem of Unequal Sample Sizes

When external observers begin to ask about comparison groups, ***complexity begins to occur in settings where the percentage of African-American students is vastly unequal to that of the majority group.*** This is a particularly difficult issue in Research I institutions such as the University of Virginia or its peer institutions where approximately a tenth of its population is minority. Here, one cannot use a t-test to compare unequal samples and few methods for solving this problem are remotely satisfactory. Consequently, for our model an applied mathematician and stochastics/statistical researcher created an innovative scatterplot in order to address the problem of unequal samples. This scatter plot is sometimes referred to as the Manhattan plot and is typically used in genetics research. Here, instead of using averages to compare two populations, all subjects are included in one sample and we get to observe where each group settles. In this approach, we make judgements according to the density or sparseness of each group in the output charts below.

What happens when two sample sizes are vastly unequal? We use the Manhattan scatter plot to identify each and every student in both samples.

Black students constitute 8-10 percent of the total undergraduate population. The population of White students is ten-fold. In the output charts below, density shows how many are in each group. The vertical layers show the level of performance by each group.

The output charts from three time horizons follow: 2003-2007; 2008-2012; and 2013-2017.

Table 3a represents the level of student achievement before the authors intervened with a synergistic convergent cluster model of mentoring comprising (a) student peer mentoring in the Office of African-American Affairs in the College of Liberal Arts and Sciences, (b) University-wide faculty mentoring and (c) leadership skill building led by the authors.

Degree Recipient GPA Data — Class of 2003

Black Students		White Students	
3.4000 - 4.000	29	3.4000 - 4.000	922
3.000 - 3.399	76	3.000 - 3.399	885
2.000 - 2.999	166	2.000 - 2.999	549
Under 2.000	6	Under 2.000	2

Degree Recipient GPA Data — Class of 2004

Black Students		White Students	
3.4000 - 4.000	24	3.4000 - 4.000	945
3.000 - 3.399	86	3.000 - 3.399	806
2.000 - 2.999	157	2.000 - 2.999	494
Under 2.000	6	Under 2.000	2
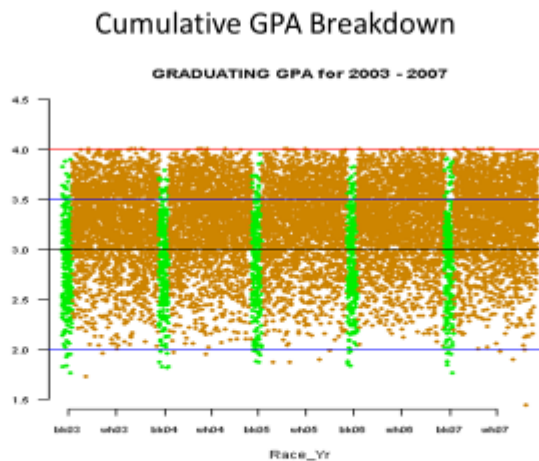
Degree Recipient GPA Data — Class of 2005

Black Students		White Students	
3.4000 - 4.000	38	3.4000 - 4.000	986
3.000 - 3.399	78	3.000 - 3.399	805
2.000 - 2.999	152	2.000 - 2.999	525
Under 2.000	7	Under 2.000	4

Degree Recipient GPA Data — Class of 2006

Black Students		White Students	
3.4000 - 4.000	31	3.4000 - 4.000	1027
3.000 - 3.399	82	3.000 - 3.399	828
2.000 - 2.999	153	2.000 - 2.999	520
Under 2.000	5	Under 2.000	0

Degree Recipient GPA Data — Class of 2007

Black Students		White Students	
3.4000 - 4.000	27	3.4000 - 4.000	1047
3.000 - 3.399	63	3.000 - 3.399	771
2.000 - 2.999	152	2.000 - 2.999	460
Under 2.000	7	Under 2.000	4

Cumulative GPA Breakdown
GRADUATING GPA for 2003 - 2007
Cum GPA
Race_Yr

13

Table 3a

14

Table 3b represents the early formulation and implementation of the cluster program from 2008-2012.

Degree Recipient GPA Data — Class of 2008

Black Students		White Students	
3.4000 - 4.000	29	3.4000 - 4.000	1069
3.000 - 3.399	75	3.000 - 3.399	720
2.000 - 2.999	169	2.000 - 2.999	464
Under 2.000	5	Under 2.000	7

Degree Recipient GPA Data — Class of 2009

Black Students		White Students	
3.4000 - 4.000	43	3.4000 - 4.000	1164
3.000 - 3.399	76	3.000 - 3.399	736
2.000 - 2.999	176	2.000 - 2.999	409
Under 2.000	12	Under 2.000	2

Degree Recipient GPA Data — Class of 2010

Black Students		White Students	
3.4000 - 4.000	40	3.4000 - 4.000	1224
3.000 - 3.399	68	3.000 - 3.399	731
2.000 - 2.999	152	2.000 - 2.999	449
Under 2.000	6	Under 2.000	5

Degree Recipient GPA Data — Class of 2011

Black Students		White Students	
3.4000 - 4.000	42	3.4000 - 4.000	1203
3.000 - 3.399	102	3.000 - 3.399	721
2.000 - 2.999	168	2.000 - 2.999	416
Under 2.000	2	Under 2.000	3

Degree Recipient GPA Data — Class of 2012

Black Students		White Students	
3.4000 - 4.000	56	3.4000 - 4.000	1212
3.000 - 3.399	115	3.000 - 3.399	735
2.000 - 2.999	153	2.000 - 2.999	412
Under 2.000	5	Under 2.000	3

Cumulative GPA Breakdown

GRADUATING GPA for 2008 - 2012

(Scatter plot: Cum.GPA vs Race_Yr — categories bk08, wh08, bk09, wh09, bk10, wh10, bk11, wh11, bk12, wh12)
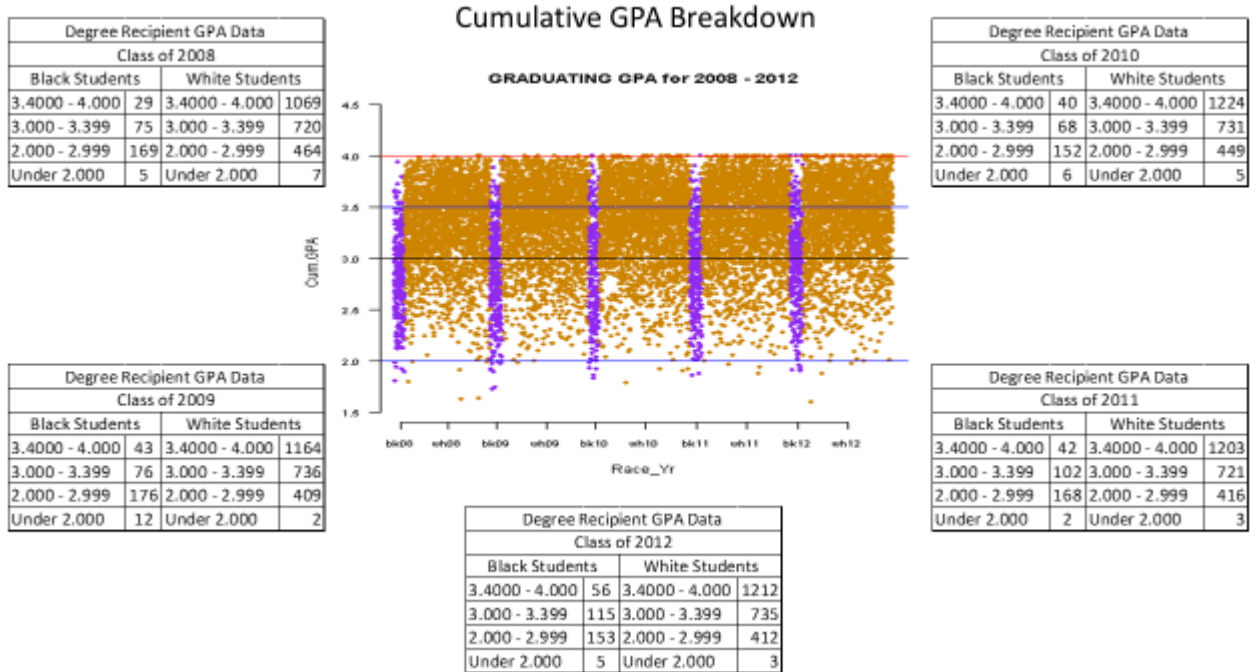
Table 3b

The output in table 3c from 2013-2017 descriptively demonstrates the achievement of the students at the height of the cluster program.

There is demonstrable and emerging thickness at the very top for African-American students in the 3.4-4.0 range in this output and the representation of both groups in the 1.5-2.0 range is sparse, showing that the successful achievement of both groups is robust.

The strategy of the Office of African-Americans at the University of Virginia is the alignment of top graduation rankings among its peer institutions with correspondingly high graduating cumulating grade point averages. The maturation of this strategic alignment can be shown in this output chart where African-American students are richly represented in both the 3.4-4.0 and the 3.0-3.399 spaces.
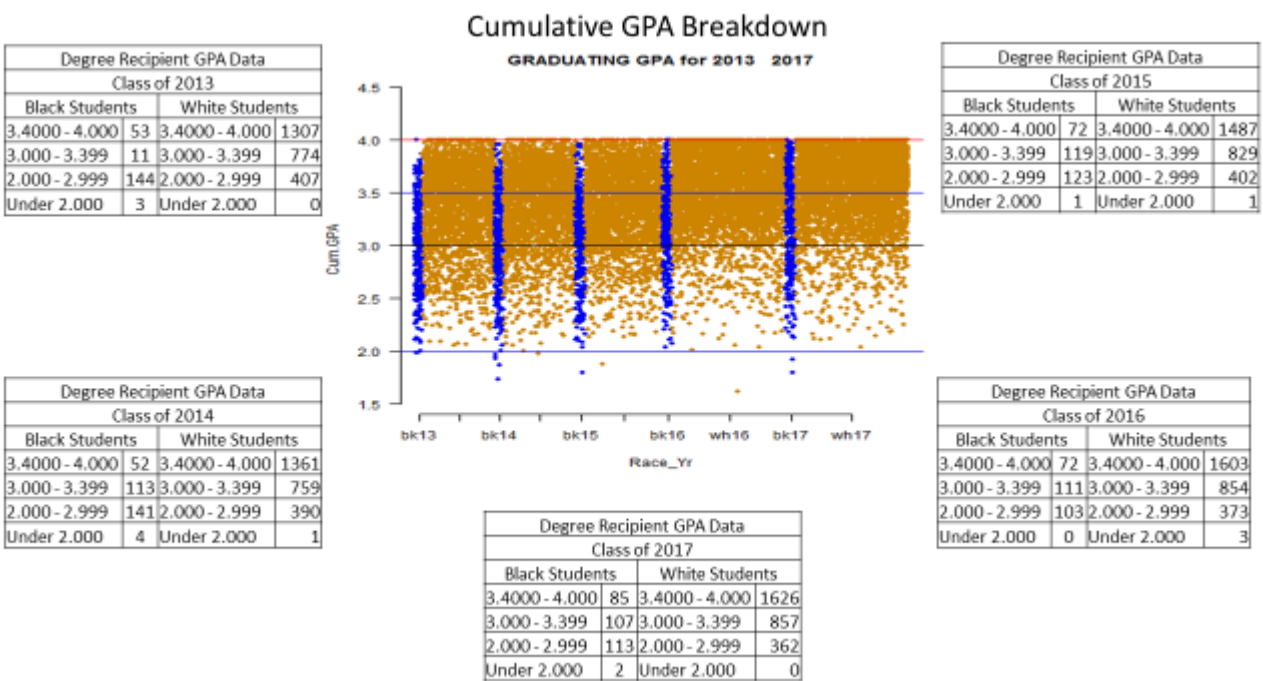

Degree Recipient GPA Data — Class of 2013

Black Students		White Students	
3.4000 - 4.000	53	3.4000 - 4.000	1307
3.000 - 3.399	11	3.000 - 3.399	774
2.000 - 2.999	144	2.000 - 2.999	407
Under 2.000	3	Under 2.000	0

Degree Recipient GPA Data — Class of 2014

Black Students		White Students	
3.4000 - 4.000	52	3.4000 - 4.000	1361
3.000 - 3.399	113	3.000 - 3.399	759
2.000 - 2.999	141	2.000 - 2.999	390
Under 2.000	4	Under 2.000	1

Degree Recipient GPA Data — Class of 2015

Black Students		White Students	
3.4000 - 4.000	72	3.4000 - 4.000	1487
3.000 - 3.399	119	3.000 - 3.399	829
2.000 - 2.999	123	2.000 - 2.999	402
Under 2.000	1	Under 2.000	1

Degree Recipient GPA Data — Class of 2016

Black Students		White Students	
3.4000 - 4.000	72	3.4000 - 4.000	1603
3.000 - 3.399	111	3.000 - 3.399	854
2.000 - 2.999	103	2.000 - 2.999	373
Under 2.000	0	Under 2.000	3

Degree Recipient GPA Data — Class of 2017

Black Students		White Students	
3.4000 - 4.000	85	3.4000 - 4.000	1626
3.000 - 3.399	107	3.000 - 3.399	857
2.000 - 2.999	113	2.000 - 2.999	362
Under 2.000	2	Under 2.000	0

Table 3c

Part IV

Before and after: three comparisons

(i) A Singular Program (2005-2009) compared with a Cluster Program (2010-2017) Here, we compare the same population of Black students in two time periods.
(ii)   Comparison of Black and White students using the odds ratio over two periods (up to 2009 and after 2010.
(iii)   Comparison of Black and White students in the same two periods (up to 2009 and from 2010 using multinomial regression.

In longitudinal studies, *program directors may change over time.* Nuances in approach to the implementation of programs occur even when there is structural continuity in student support services over time. Practitioners come to work at a university with different training emphases and skill sets. Accordingly change in the results of student achievement must be accounted for. In this paper a mentoring program, a *singular* Peer Advisor Program (PA), was in existence over a decade before the lead author introduced *the Cluster program* that created **a programmatic synergy of impact.** Change in the implementation of programs must be accounted for. We do this in different ways: (i*) comparing the relative frequency of African-American student grade point average during the period of the PA program in se* (2005-2009) **with that of the period of the Cluster program** *(*2010-2016); (ii) **comparing the odds ratio** for the two periods **for both African-Americans and White Americans**; and **conducting a multinomial regression of the two groups to determine by what percentage the odds increased as changes in student performance occurred.**

(i)   From a *Singular* Mentoring Program for Black students to a
                Cluster Mentoring Program for Black students

Let us provide a context for the comparison between the singular mentoring program and the cluster program. Between 2005 and 2009 one director ran a ***singular*** student mentoring program as *the privileged* instrument for providing student academic support to Black students in the Office of African-American Affairs until she retired. A ***Cluster*** program created synergy between three convergent programs for advancing the academic achievements of Black students under the premise that synthesis constitutes transformation with yet more powerful outcomes (See Apprey et al. 2014).

 Although the rate of achievement between Black students receiving the singular program and Black students receiving the cluster program improved for all subgroups--0.0-3.0, 3.0-3.5, 3.5-4.25-- the
  3.0-3.5 subset substantially *improved* with *cluster mentoring*.

The descriptive statistics for that comparison is provided below.

Rel.frequency of Black students GPA groups comparing
Old mentoring (PA only) and
New mentoring (Cluster mentoring)

	old_mentoring	new_mentoring
0.0_3.0	0.61	0.47
3.0_3.5	0.31	0.41
3.5_4.25	0.08	0.12
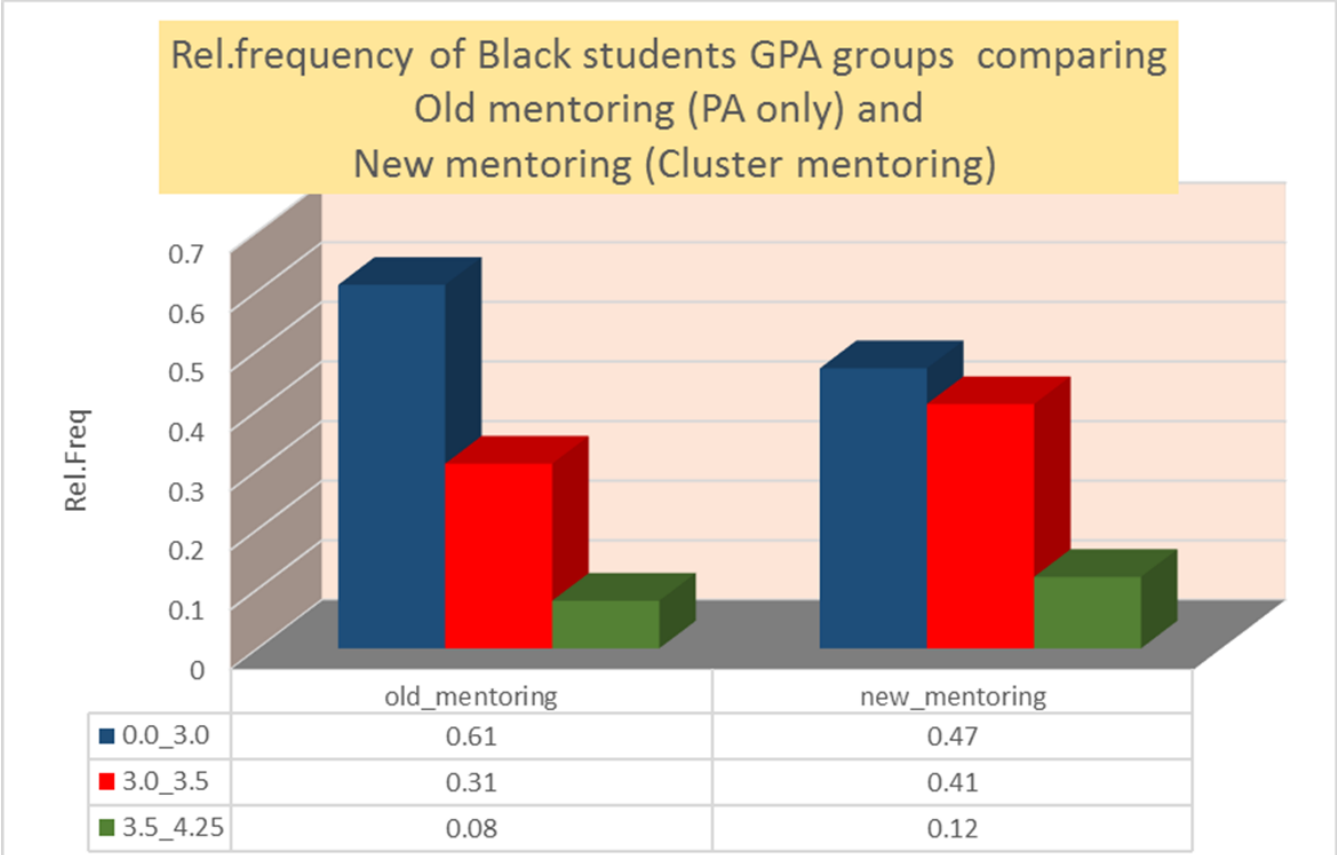
Table 4a

Old mentoring 2005 – 2009 (PA only)
and New mentoring 2010 – 2016 (Cluster mentoring);
progressive shifts in three cohorts of 0.0-3.0, 3.0-3.5, 3.5-4.25 .

The descriptive statistics offers one set of information that tells us that change is occurring. Nevertheless we can deepen our findings with additional and different forms of statistical assessments. Here we offer two inferential statistical assessments: the ***odds ratio***, and ***multinomial logistic regression***.
Odds ratio measure the association between exposure to the mentoring programs and their outcomes. In other words, what are the odds that a more favorable outcome will occur with the exposure to the cluster

program for Black students between the time period 2005 and 2009 on the one hand, and Black students between 2010 and 2017?

Next, we conduct yet another assessment where we use a ***multinomial regression*** to compare the performance of Black students who received the two mentoring programs and White students who received no formal mentoring exposure to mentoring. We can compare the performance between the two groups using these three classifications: 2.5-3.0; 3-0-3.5; 3.5-4.0 between the time horizons of 2005-2009, and 2010-2017.

(ii)   Comparing Black students with White students using *the odds ratio*

Now we can compare Black students and White students in the same two periods: 2005-2009, 2010-2016.

Rate of Achievement between Black and White students
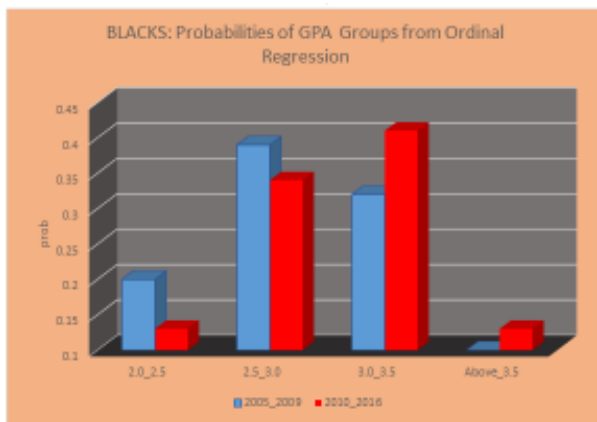
Odds for higher *GPA increases by 70%* comparing Blacks 2010-2016 vs 2005-2009.
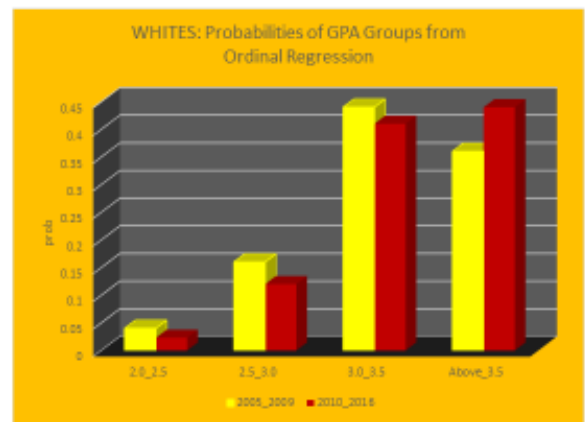
Odds for higher *GPA increases by 38%* comparing Whites 2010-2016 vs 2005-2009

Table 4b

The odds ratio for Black students from 2010 to 2016 is 1.72. Thus students in 2010 to 2016 are 1.72 times more likely than students in 2005-2009 to achieve a higher GPA score. The probability of Black students in 2010-2016 achieving higher GPA is 0.407 for the 3.0-3.5 group while students in 2005-2009 is 0.39 in the 2.5-3.0 group.

The odds ratio for White students in 2010 to 2016 is 1.38. Thus students in 2010 to 2016 are 1.38 times more likely than students in 2005-2009 to achieve a higher GPA score. The probability of White students in 2010-2016 achieving higher GPA is 0.44 for group above 3.5 while students in 2005-2009 is 0.4 in group 3.0-3.5.

Although the increase in odds ratio for Blacks is 70% and the odds ratio for Whites is 38%, the GPA group category for Whites is higher compared to Black students in the same period.

Now that we have used the odds ratio to compare the 2005-2009 group with that of 2010-2016, let us use *another* statistical tool to compare the same groups using multinomial regression.

(iii)   *Multinomial Regression:* a classification method that generalizes logistic regression to multiclass outcomes

The reference baseline for the multinomial regression is the 2.0-2.5 category.

Those in the 2.5-3.0, 3.0-3.5 and 3.5-4.0 categories will be measured against the baseline.

- For Black students in the 2.5-3.0 category the odds increased by *37%.*
- For Black students in the 3.0-3.5 category the odds increased *two-fold.*
- For Blacks students in the 3.5-4.0 category the odds increased *2.4 times.*
- For White students in the 2.5-3.0 category the odds increased by *11%.*
- For White students in the 3.0-3.5 category the odds increased by *41%.*
- For White students in the 3.5-4.0 category the odds increased by *78%.*

Up to this point we have addressed strategy, collected data to get a landscape of areas of academic performance and achievement in order to analyze with descriptive and inferential statistical analyses. We do so in order to show how we calibrate our way stations. Now we must ask questions about the climate under which we provide student academic support. Part V will address a profile of what the internal climate is. Part VI will address the impact on our students of external turbulence in the country. One example is provided.

Under What Internal Climate are Students Achieving?

Given the turbulent histories and racially fraught turmoil of our times, students, parents, alumni and others do ask questions about *the climate under which African-Americans study and accomplish their academic and non-academic goals in predominantly white institutions.* In this paper, student leaders, the Black Presidents Council, independent of the authors conducted a survey. They asked: "What climate supports the academic and non-cognitive achievements of Black students at the University?" We provide a sample of the results of their study.

Climate survey

What climate supports the academic and non-cognitive achievements of Black students?

A. 75% of respondents report having somewhat positive or extremely positive experience at UVA:
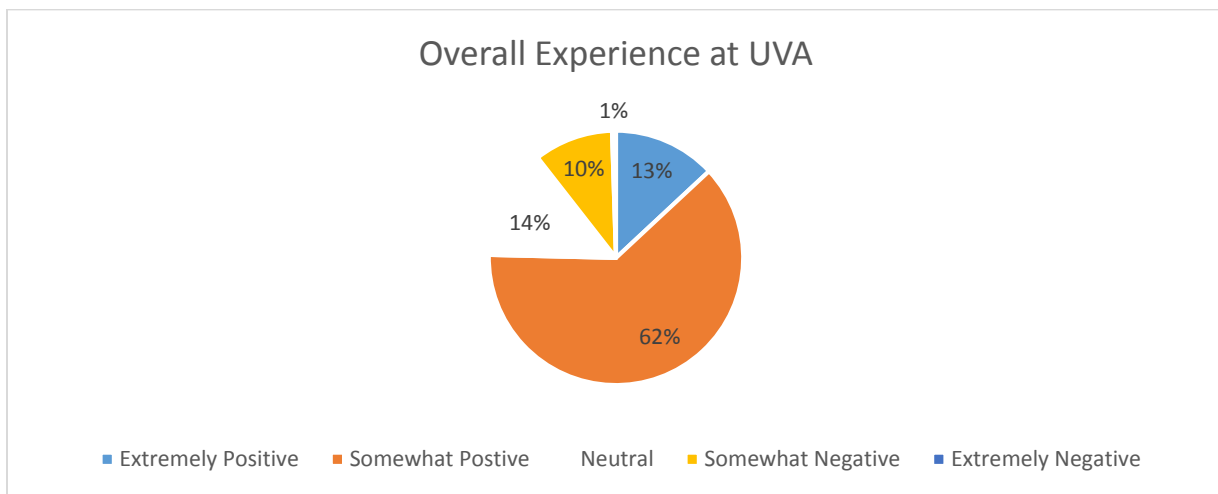
> 62% somewhat positive;

> 13% extremely positive.

Less than 10% of respondents report having a somewhat negative (1%) or extremely negative (9%) experience at UVA:

> ➢ 1% somewhat negative
> ➢ 9% extremely negative

B. 60% of respondents report being slightly satisfied or extremely satisfied with the administration:

Nearly 20% of respondents extremely satisfied;

40% of respondents somewhat satisfied.

Nearly 12% of respondents report being somewhat dissatisfied or extremely dissatisfied:

➢ 10.4% somewhat dissatisfied

➢ 1.81% extremely dissatisfied

1. Overall rating of their experience at UVA:
   - Less than 10% of respondents report having a somewhat negative or extremely negative experience at UVA.
     o 1% somewhat negative
     o 9% extremely negative
   - 75% of respondents report having somewhat positive or extremely positive experience at UVA
     o 62% somewhat positive
     o 13% extremely positive

Overall Experience at UVA

1%

10% 13%

14%

62%

■ Extremely Positive ■ Somewhat Postive ■ Neutral ■ Somewhat Negative ■ Extremely Negative

Table 5a

2. Satisfaction with Administration:
- Nearly 12% of respondents report being somewhat dissatisfied or extremely dissatisfied
    - 10.4% somewhat dissatisfied
    - 1.81% extremely dissatisfied
- 60% of respondents report being slightly satisfied or extremely satisfied
    - Nearly 20% of respondents extremely satisfied
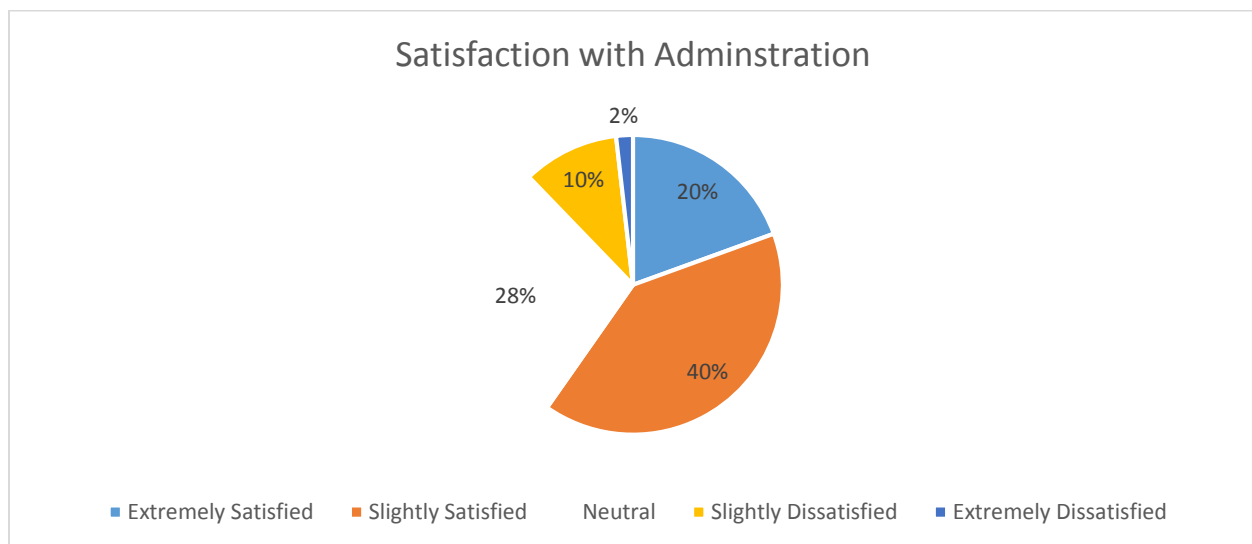   - 40% of respondents somewhat satisfied

Table 5b

Analysis:

Students benefited from seeing a different counter-narrative emerge outside their anticipated expectation regarding their overall experiences of the University and of their satisfaction with administration. Prior to the study, the basic assumption was that Black students were miserable at UVA and angry (dissatisfied) in their relationships to administration. Thus far, the study has helped them better understand the potency of the disgruntled narrative and to begin developing strategies for reaching out to the broader community to learn what is working or not working within

these contexts. This helped students prepare to analyze data without the bias of the angry student lens, as well.

Part VI

External Threats

Events of great consequences occur in the world. Sometimes, they have direct impact on students. When they occur, and when they threaten to potentially derail the ability of students to live and to achieve their academic goals, we must pay attention to the untoward impact of the toxic and externally driven events. Specifically, on August 11th 2017 the Ku Klux Klan and the Alt-right racist groups brought their inflammatory torches and guns to the grounds of the University on the eve of their August 12th protest in Charlottesville to protest the proposed removal of Confederate statues in the city. ***What happens when practitioner-scholars stay focused on their strategic positioning***? We provide a comparison chart of their achievement outcomes with previous years of new entrants. As a result of our sustained focus on the strategic imperatives of our student support services, the starting cumulative grade point average of the matriculating students of August, 2017 who could potentially have been derailed during their first semester of college exceeded all previous students in their first year.

The six way stations of changing scenarios, then are: (i) ***strategy*** as a starting point; (ii) the distribution of ***raw scores and percentages as a scenic montage***; (iii) ***descriptive statistics*** to provide a comparison of our target population with another; (iv) ***inferential statistics*** to compare the impact of previous providers with current practitioner scholars; (v) the ***internal climate*** within the university under which students receive their education; and finally, (vi) the impact or lack thereof of ***external factors*** from outside the University.

The following charts illustrate the six changing scenarios in six parts. They specifically point to how charts can be used as an integral part of the narrative of student success in the face of internal and external challenges.

Because we were focused on strategy and high impact operations, highly charged transgressions such as the August 11, 2017 unwelcome KKK visit to the University and the August 12, 2017 KKK March in Charlottesville, VA did not influence student academic performance. On the contrary, first year matriculants achieved the highest first semester and first year grade point averages ever.

Revised 1.5.18
First Year Comparisons: Cumulative GPAs
From Fall 2005 to Fall 2017
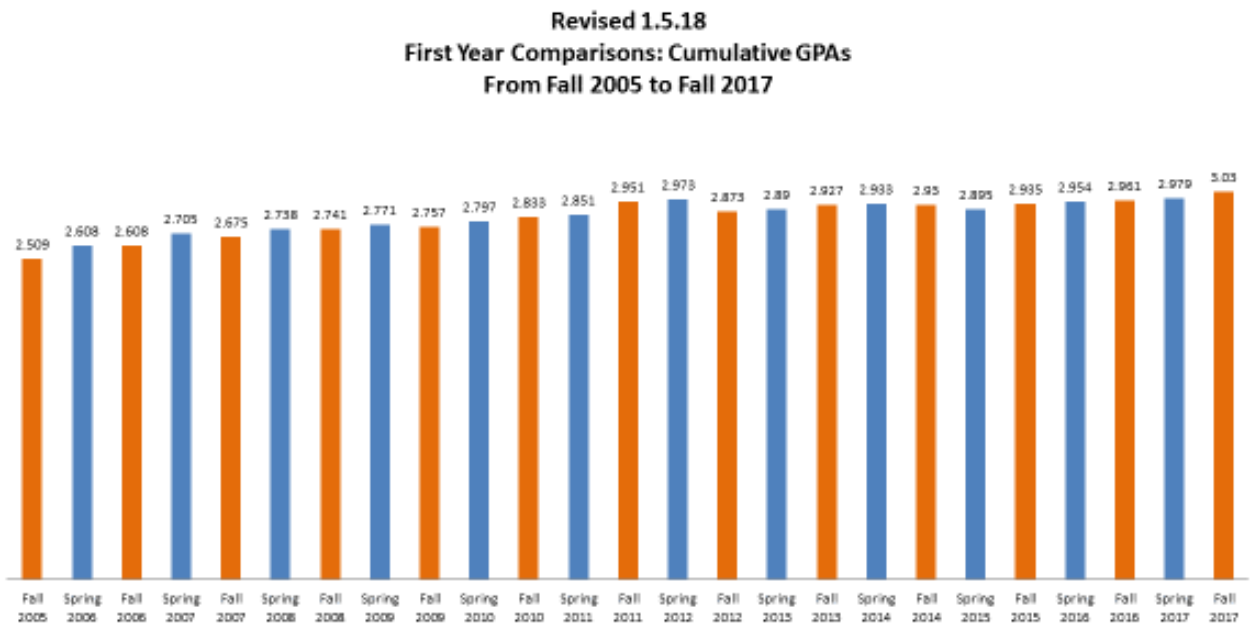
Fall 2017 GPA reflects African-Americans and African-Americans with mixed heritage.

Table 6

DISCUSSION

From the six way stations above, we can begin to make some observations. A calibrated practice model is not some static formulaic model. It is a dynamic model that is open to transfer from one organization to another. Each application has to begin with a pretext; a strategy driven by some set of informed presuppositions, precepts, organizing basic assumptions that can shape a strategy or a specific research question. In short, ***what is the summit that would give the organization a competitive advantage?*** Alternatively, ***what direction would fulfil our strategic imperative?*** We have demonstrated above one such strategic starting point and its drivers.

Secondly, because we are ethically bound to serve all students regardless of our strategic positioning, we have to observe the performance of all students in the service domain we are trying to impact. Accordingly, we have a bifurcation. We want to tract how many we are preparing for graduate and professional schools and competitive workplaces in order to fulfil our strategy that ***high graduation rankings must align with correspondingly high graduating grade point averages.*** At the same time, we want to lift all students who are at risk of not graduating. Therefore, we begin with ***a scenic montage of raw scores*** in order to identify how many people are in danger of not graduating. We even want to know whose door we must knock on because a student has not been seen in class for a week, a fortnight or a month. We can see above that when we are succeeding in raising the numbers and percentages of students with high graduating grade point averages, the number of students that need extraordinary help goes down and there are identifiable back-stories behind the situation of failing students that we can remedy. For our strategy of graduating substantive numbers for graduate or professional schools and competitive work places, an r-square tells us how linear our progress is. To that end, we want an r-square above 0.5.

Thirdly, in conducting studies about our target population of blacks in a Research I institution, other observers usually want a comparison with whites whether such a comparison is within our delimited scope or not. In anticipation, we answer this question by adopting a modification of what is felicitously known as the Manhattan plot, a scatterplot that is often in human genomic studies to observe and describe large sample sizes. In our study, we observe the density of one population size or another to determine performance within a particular GPA category and vertically to observe the progress to a desirable summit. This scatterplot takes away bias that we often see in averages because we see literally, where every student is located in the output.

Fourthly, there are personnel changes over time in an organization. Therefore, we must have a means to assess what changes are occurring over a particular strategic time horizon. So, we want to know what level of performance supersedes a particular time frame. We want to know what is changing within our target domain. Here we examine quantity and change between two time horizons. In addition, we want to know what is changing when we compare our target domain with the dominant population. In our model, we discovered a wicked problem when we try to compare our target population of black students (9.2%) with the dominant population of white students (80%). In order to assess quantity and chance, we used the odds ratio to measure association and outcome first. Then we used multinomial logistic regression to classify cohorts within and across multiple discrete groups.

Our fifth waystation in our calibration model is a statement on internal climate. Given the peculiar history of racial unrest, legal segregation, or derivatives of other forms of sedimentations of history in a University, are there identifiable residual factors that are impeding the academic achievement of our target black population. We ask students leaders in the Black Presidents Council who have conducted an independent climate survey to address this question for us.

The sixth category addresses external stressors that no member of the University Community anticipated. For example in August 2017, the Ku

Klux Klan and other Alt-right racist groups came to visit our University the day before they came to Charlottesville to protest the removal of Confederate statues from the city. Did that external threat affect the performance of matriculating first year students? One index of the resilience and maturity of our strategy and its operational effectiveness is that the first year students had the highest entering grade point cumulative grade point average for a class ever recorded. No cause and effect inference is suggested here. Simply put, the students remained focused on their work and excelled without any observable fear of extraneous influences poisoning the climate wherein they studied.

IN PLACE OF A CONCLUSION

A calibrated practice model for student academic support has to accommodate contingencies. In order to accommodate contingencies we suggest that practitioners strive to be nimble and multiply skilled or assemble a team with multiple skill sets. Accordingly, this paper has a social change practitioner-scholar and a psychoanalyst to provide strategic leadership, an independent and external resource of a systems analyst with stochastic and computational skills, a chemist, an educator and a counseling psychologist to serve as a team to address contingent twists and turns.

The strategy remains the same for a consistent and sustained time horizon of five to seven years at a time and therefore this model of calibrated practice described above covered three periods of roughly five years each.

In this model, annual benchmarks are of limited or no value. They do not allow a particular strategy enough time to arrive at its mature destination. Organizations can be impatient and therefore constant conversation between stakeholders to secure buy-in is required.

In the calibration practice model a practitioner can start a student academic support program and preserve or vary the six calibrated way stations demonstrated above. With one's privileged strategic positioning in mind to manage to, a leader is well positioned to advance the work of an institution and/or preserve its competitive advantage.

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Appendix 1:

Ordinal logistic regression

```
1. Ordinal Logistic regression :BLACKS 2005-2009 vs 2010 to 2016

                        Value Std. Error    t value      p value
factor(yr1)1        0.5396407 0.06705191   8.048103 8.408727e-16
Intercepts
2.0_2.5|2.5_3.0   -1.3733390 0.05993192 -22.914986 3.293983e-116
2.5_3.0|3.0_3.5    0.4032481 0.05327521   7.569151 3.756705e-14
3.0_3.5|above3.5   2.4710164 0.07276358  33.959523 8.824974e-253

confint.default(m1)
               2.5 %  97.5 %
factor(yr1)1 0.4082213 0.67106
exp(coef(m1))
factor(yr1)1
    1.71539

Blacks 2010-2016
 2.0 2.5   2.5 3.0   3.0 3.5  above3.5
0.1286465 0.3373082 0.4074470 0.1265984

Blacks 2005 - 2009
  2.0_2.5    2.5_3.0    3.0_3.5   above3.5
0.20208091 0.39738689 0.32261702 0.07791518

2. Ordinal Logistic regression :Whites 2005-2009 vs 2010 to 2016
                   Value Std. Error   t value      p value
factor(yr1)1    0.3205369 0.02288991  14.00341 1.485615e-44
Intercepts
2.0 2.5|2.5 3.0  -3.2810787 0.03692135 -88.86671  0.000000e+00
2.5_3.0|3.0_3.5  -1.4259987 0.02042831 -69.80504  0.000000e+00
3.0_3.5|above3.5  0.5552615 0.01834195  30.27277 2.617390e-201

confint.default(m1)
               2.5 %    97.5 %
factor(yr1)1 0.2756735 0.3654002
exp(coef(m1))
factor(yr1)1
    1.377867

Whites 2010-2016
  2.0_2.5   2.5_3.0   3.0_3.5  above3.5
0.0265552 0.1219295 0.4099285 0.4415868

Whites 2005-2009
  2.0 2.5    2.5 3.0    3.0 3.5   above3.5
0.03622604 0.15749686 0.44163254 0.36464457
```

Appendix 2:

Multinomial Regression

```
MULTINOMIAL regression

BLACKS
Coefficients:
          (Intercept)  factor(yr1)1
2.5_3.0     0.6629648     0.3151615
3.0_3.5     0.4479292     0.7236685
above3.5   -0.9219125     0.8998738

Std. Errors:
          (Intercept)  factor(yr1)1
2.5_3.0    0.07505454     0.1078987
3.0_3.5    0.07805621     0.1086870
above3.5   0.11429607     0.1479687


WHITES
Coefficients:
          (Intercept)  factor(yr1)1
2.5_3.0      1.43813      0.1180992
3.0_3.5      2.43706      0.3597488
above3.5     2.27215      0.5815060

Std. Errors:
          (Intercept)  factor(yr1)1
2.5_3.0    0.05321197    0.07591803
3.0_3.5    0.04988356    0.07111532
above3.5   0.05024176    0.07130982
```

Appendix 3:

Climate Survey Data

BPC-The Black Undergraduate Student Experience Cross Tabulation(1)

		What school do you attend?							
		Curry School of Education	School of Engineering & Applied Science	Batten School	College of Arts & Science	School of Architecture	School of Nursing	McIntire School of Commerce	Total
My time at the University has been:	Extremely positive	3 / 10.34% / 20.00%	5 / 17.24% / 23.81%	1 / 3.45% / 33.33%	19 / 65.52% / 11.18%	0 / 0.00% / 0.00%	1 / 3.45% / 11.11%	0 / 0.00% / 0.00%	29 / 100.00% / 13.06%
	Somewhat positive	10 / 7.25% / 66.67%	10 / 7.25% / 47.62%	2 / 1.45% / 66.67%	105 / 76.09% / 61.76%	2 / 1.45% / 100.00%	7 / 5.07% / 77.78%	2 / 1.45% / 100.00%	138 / 100.00% / 62.16%
	Neither positive nor negative	2 / 6.25% / 13.33%	5 / 15.63% / 23.81%	0 / 0.00% / 0.00%	24 / 75.00% / 14.12%	0 / 0.00% / 0.00%	1 / 3.13% / 11.11%	0 / 0.00% / 0.00%	32 / 100.00% / 14.41%
	Somewhat negative	0 / 0.00% / 0.00%	1 / 4.55% / 4.76%	0 / 0.00% / 0.00%	21 / 95.45% / 12.35%	0 / 0.00% / 0.00%	0 / 0.00% / 0.00%	0 / 0.00% / 0.00%	22 / 100.00% / 9.91%
	Extremely negative	0 / 0.00% / 0.00%	0 / 0.00% / 0.00%	0 / 0.00% / 0.00%	1 / 100.00% / 0.59%	0 / 0.00% / 0.00%	0 / 0.00% / 0.00%	0 / 0.00% / 0.00%	1 / 100.00% / 0.45%
	Total	15 / 6.76% / 100.00%	21 / 9.46% / 100.00%	3 / 1.35% / 100.00%	170 / 76.58% / 100.00%	2 / 0.90% / 100.00%	9 / 4.05% / 100.00%	2 / 0.90% / 100.00%	222 / 100.00% / 100.00%

BPC-The Black Undergraduate Student Experience Cross Tabulation(1)

		Which parts of University Administration have you engaged with while here at the University? Pick...								
		President's Office	Provost's Office (Academics)	Office of the Vice President and Chief Officer for Diversity and Equity (ODE)	Office of the Vice President and Chief Office of Student Affairs (VPSA)	Office of the Dean of Students	Office of African-American Affairs	Student Financial Services	Academic Departments (Faculty and Deans)	Total
How satisfied are you with those interactions with the University Administration?	Extremely satisfied	2 / 11.11%	3 / 15.79%	3 / 12.50%	3 / 11.54%	23 / 21.70%	37 / 19.22%	25 / 15.82%	25 / 19.84%	43 / 19.46%
	Slightly satisfied	6 / 33.33%	10 / 52.63%	13 / 54.17%	11 / 42.31%	49 / 46.23%	72 / 39.34%	65 / 41.14%	49 / 38.89%	89 / 40.27%
	Neither satisfied nor dissatisfied	7 / 38.89%	5 / 26.32%	6 / 25.00%	8 / 30.77%	22 / 20.75%	53 / 28.96%	45 / 28.48%	34 / 26.98%	58 / 26.05%
	Slightly dissatisfied	3 / 16.67%	1 / 5.26%	2 / 8.33%	4 / 15.38%	12 / 11.32%	18 / 9.84%	19 / 12.03%	16 / 12.70%	23 / 10.41%
	Extremely dissatisfied	0 / 0.00%	0 / 0.00%	0 / 0.00%	0 / 0.00%	0 / 0.00%	3 / 1.64%	4 / 2.53%	2 / 1.59%	4 / 1.81%
	Total	18 / 100.00%	19 / 100.00%	24 / 100.00%	26 / 100.00%	106 / 100.00%	193 / 100.00%	158 / 100.00%	126 / 100.00%	221 / 100.00%
What is your current year at the University?	First	1 / 5.56%	3 / 15.79%	1 / 4.00%	0 / 0.00%	21 / 19.44%	53 / 27.75%	40 / 24.39%	29 / 22.14%	60 / 26.09%
	Second	6 / 33.33%	5 / 26.32%	1 / 4.00%	4 / 14.81%	29 / 26.85%	50 / 26.18%	47 / 28.66%	39 / 29.77%	66 / 28.70%
	Third	4 / 22.22%	3 / 15.79%	13 / 52.00%	13 / 48.15%	28 / 25.93%	46 / 24.08%	39 / 23.78%	30 / 22.90%	55 / 23.91%
	Fourth	7 / 38.89%	8 / 42.11%	10 / 40.00%	10 / 37.04%	30 / 27.78%	42 / 21.99%	38 / 23.17%	33 / 25.19%	49 / 21.30%
	Total	18 / 100.00%	19 / 100.00%	25 / 100.00%	27 / 100.00%	108 / 100.00%	191 / 100.00%	164 / 100.00%	131 / 100.00%	230 / 100.00%

Acknowledgment