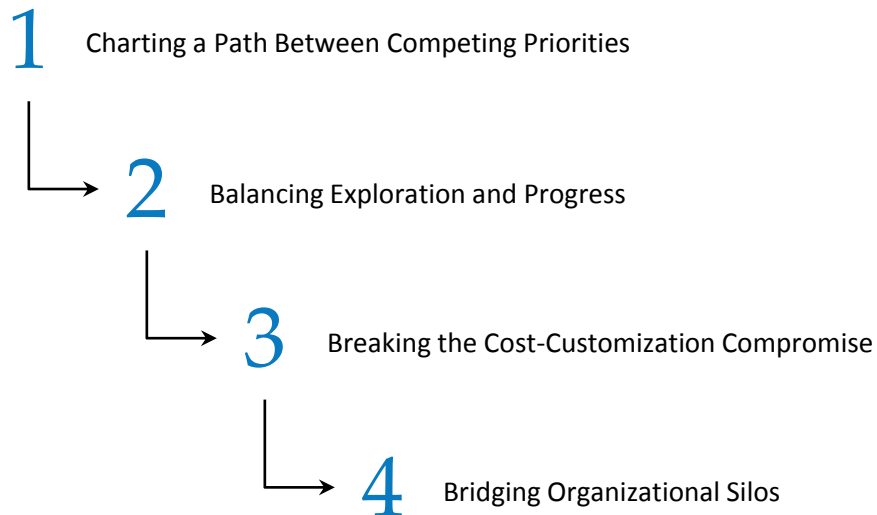




Next-Generation Advising

Elevating Practice for Degree Completion and Career Success

Road Map for Discussion



Not Just Access, But Completion

Completion Agenda Increases Focus on “Degree Productivity”



“By 2020, America will once again have the highest proportion of college graduates in the world.”

“The performance-based models in Ohio, Indiana, and Tennessee depart from the traditional philosophy that institutional funding be apportioned according to enrollment.”

*2011 Policy Brief
New England Board of Higher Education*

Tennessee's New Outcomes-Based Funding Formula

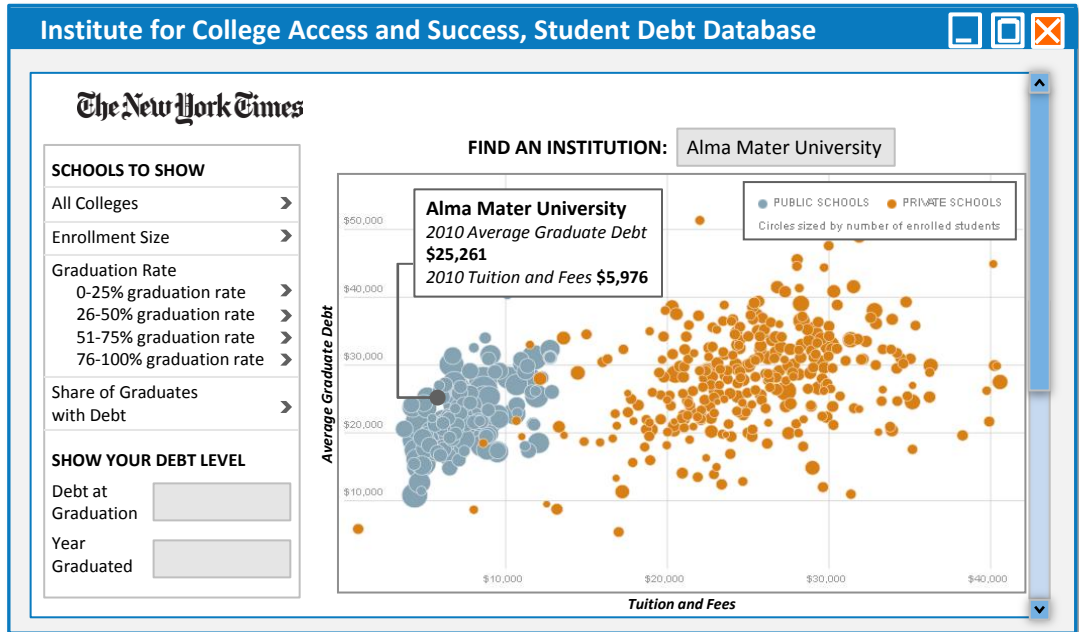
<i>Institutional Outcome</i>	<i>Formula Weight</i>
Student Progression	15%
Total Degrees Produced (Bachelors)	30%
Total Degrees Produced (Masters)	15%
Degrees per 100 FTE	15%
Graduation Rate	5%
Total	80%

Source: Barack Obama, July 14, 2009, <http://www.whitehouse.gov/>; Crellin, Aaron, et al., “Catalyst for Completion: Performance Based Funding in Higher Education.” New England Board of Higher Education (2011); Education Advisory Board interviews and analysis.

Not Just Price, But Debt

Newest Navigators Highlight Borrowing and Completion Rates

**Highlights
Completion
and
Borrowing
Rates**



**Helping Families
Assess Risk**



How much debt am I likely to incur?



How likely am I to graduate?



Are some schools with higher tuition better long-term bargains than less expensive schools?

Competing on Completion

More Schools Justifying High Tuition with High Success Rates

Getting Past “Sticker Shock”



- 2 of 3 students complete an internship
- 60% of graduates pursue advanced degree within 5 years
- 84% graduate in 4 years

“We know that you have many choices right now...among the most important factors for you to consider will be price, but also value; not just how much it costs to attend, but what you get out of attending.”

*Brian Rosenberg
President, Macalester College*

New Uptake on Four-Year Graduation Contracts



Four-Year Graduation Contract

Student will:

- ✓ Meet every semester with academic advisor
- ✓ Remain in good academic standing
- ✓ Follow all general education and program requirements

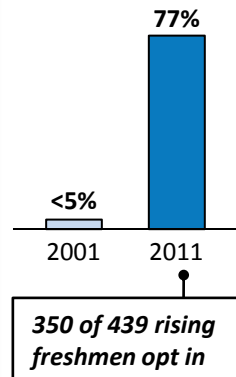
Institution will:

- ✓ Assure availability of required courses
- ✓ Provide ready access to academic advisors

The Pledge:

Student will graduate in four years or will be able to take necessary classes **for free**

Student Participation Rates

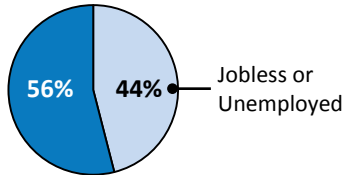


Not Just a Diploma, But a Career

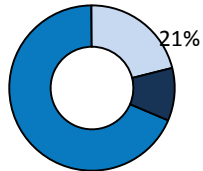
"Funemployment" Not So Funny

Today's Job Market Still Chilly
for Recent Grads

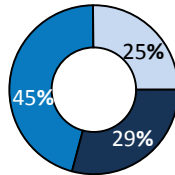
Bachelor's Degree-Holders Under 25



Computer Science Majors



Humanities Majors



■ Working in jobs that **require** a college degree
■ Working in jobs that **do not** require a college degree
■ Not working

Lasting Consequences to
Not Landing Good First Job



Professor Lisa Kahn
Yale University

1% Unemployment

For every percentage point in national unemployment...

- 7% Starting Income

...starting income drops seven percent and rarely catches up across a career.

- \$100,000 Present Value of Lost Income

"When you add up earnings losses over the years, it's as if lucky graduates had been given a gift of \$100,000, or unlucky ones saddled with a debt of the same size."

Presidents and Provosts on the Spot

“When prospective students and their parents visit, they ask about job placement rates, internships and alumni involvement in placement, often before they ask about the classroom on campus. These are questions I never heard 10 years ago.”

*President
Small Liberal Arts College*

“Lost Generation” of Alumni

“Our students are leaving with a lot of debt and many can’t find the job they want. In a decade, I really worry about their ability and willingness to give. They’re starting to tell us, ‘we gave already, when we wrote the tuition check.’ And you know what—they’re right.”

*Chief Development Officer
Flagship Public University*

Why Focus on Advising?

Better Advising Critical for Near-Term Improvement on Success Metrics

What We Heard from Our Members...



Most institutions believe current advising system sub-optimal, leaves substantial room for improvement



Improvements to advising maximize impact of all existing student services

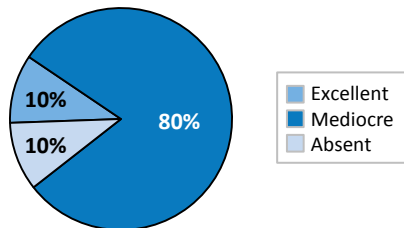


Provosts have more direct control over advising than other factors that impact student success

Faculty Are Critical, But Just Part of Solution

Incentive System at Odds with Consistent Faculty Advisor Quality

Quality of Faculty Advising
(Illustrative)



Wide-Ranging Quality

“My faculty do from a horrendous job to a fantastic job advising students, with most doing just a mediocre job.”

*Provost
Midsized Private University*

More Than One Kind of Advising Problem

Advising Challenges Manifest Differently Across Institutional Types



Institutional Type	Curricular Complexity	Student Preparedness	Typical Advising Challenges
Access-Focused Public Institutions			<ul style="list-style-type: none"> Assisting students in selecting courses and majors for which they have both interest and aptitude Identifying students who are off-track and intervening accordingly
Smaller Liberal Arts Colleges			<ul style="list-style-type: none"> Ensuring students take advantage of co-curricular experiences and alumni resources Providing students with a broad liberal arts education while also ensuring their career readiness
Elite Research Universities			<ul style="list-style-type: none"> Supporting sub-populations of students facing success challenges Encouraging students to take advantage of co-curricular opportunities early on
Tuition-Dependent Private Institutions			<ul style="list-style-type: none"> Providing students with high-touch advising commensurate with their expectations and tuition Supporting students who fail to meet upper-division requirements for their major

No “One-Size-Fits-All” Model...

Differences in Scale, Curriculum, and Budgets Call for Range of Approaches

Faculty-Only



- All students advised by faculty advisor for entirety of academic experience
- Common at small liberal arts institutions and within colleges with more prescribed curriculum (e.g. engineering)

Hand-Off



- All students assigned to professional advisor until declaring major; then assigned to a faculty advisor
- Most common advising model across institutions and individual colleges

Total Intake



- All incoming students assigned to professional advisor; after first year, eligible to declare major and receive faculty advisor assignment (in addition to professional advisor)
- Highest touch and most expensive approach

... But Common Underlying Problems

Fundamental Challenges to Advising and Student Success

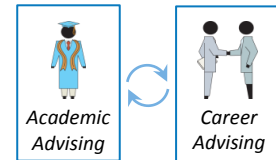
***Too Much Curricular
Choice and Complexity***



***High Cost of Providing
Personalized Advice***



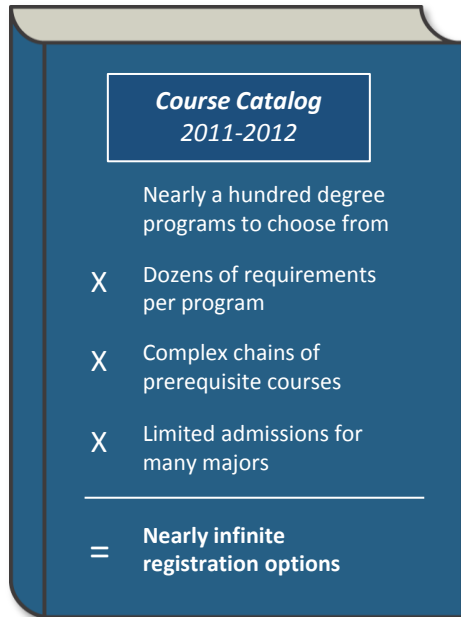
***Silos Between Academic
and Career Advising***



The Dark Side of Choice

Limitless Options Not Always a Good Thing

Curriculum Choices Defined by Complexity

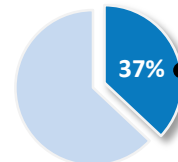


Even the Experts are Confounded

“Course patterns for majors can appear extremely complex, and even experienced academic advisors have difficulty guiding students through them.”

Capaldi, Lombardi, and Yellen
“Improving Graduation Rates,” *Change Magazine*

What Would You have Done Differently About Your College Experience?



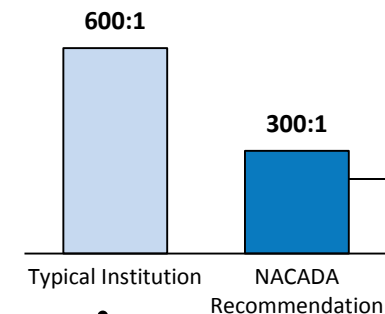
More carefully selected my major or chosen a different major

Source: Carl Van Horn, Charley Stone, and Cliff Zukin, “Chasing the American Dream: Recent College Graduates and the Great Recession,” *John J. Heldrich Center for Workforce Development* (2012); Education Advisory Board interviews and analysis.

The High Cost of Personalization

Double the Recommended Ratio a
Common Occurrence...

Estimated Advisor to Student Ratios



“Check the Box” Appointments

- First-year orientation: 5-30 minutes
- Ongoing: typically ≤ 30 minutes each semester

... But Meeting Recommended
Ratios an Expensive Proposition

Estimated Cost of Additional Advisors

Large Institution: $\approx 30,000$ Students

Additional advisors needed 35
Cost per year \$1.75 M

Mid-Sized Institution: $\approx 15,000$ Students

Additional advisors needed 20
Cost per year \$1 M

Smaller Institution: $\approx 3,000$ Students

Additional advisors needed 10
Cost per year \$0.5 M

Students Don't See Silos

Career Advising Becoming an Institution-wide Priority



Academic Affairs

Academic Advising



Course scheduling
Registration
Academic intervention
Major declaration
Transfer advising



Student Affairs

Career Services



Campus career fairs
Interest inventories
On-campus recruiting
Workshops
Individual counseling

It Belongs to Student Affairs...

“Career advising is certainly important, but it’s not an area where I really have control; our career services office is located within the Student Affairs division.”

*Provost
Mid-Sized Public Institution*

...But Students Don't Differentiate

“When prospective students and their parents visit, they ask about internships and job placement. They don’t care where career services is housed; they care if they get a good job after graduation.”

*Director of Admissions
Smaller Private Institution*

Charting a New Path Between Competing Priorities

Structuring Choice

Balancing Exploration and Progress



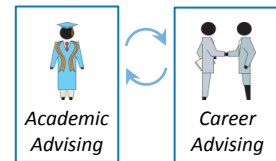
Changing Behavior

Breaking the Cost-Customization Compromise



Bridging Silos

Realizing Opportunities to Incorporate Career



Key Member Challenge:

“How do I encourage students to explore their curricular interests while ensuring they make steady progress toward degree?”

Key Member Challenge:

“How do I provide personalized advice to students without breaking the bank?”

Key Member Challenge:

“How do I provide students with a liberal arts foundation while also ensuring their career readiness?”

Next-Generation Advising

Elevating Practice for Degree Completion and Success

Structuring Choice

*Balancing Exploration
and Progress*

I

Promoting Completion Efficiency

1. Pre-major
Exploratory
Clusters

II

Leveraging Success- Prediction Analytics

2. Data-Based
Degree Milestones
3. Performance-Based
Major Pathing

Changing Behavior

*Breaking the Cost-
Customization Compromise*

III

Personalizing Advice

4. Student Success
Coaching Fellows
5. Transition
Specialists
6. Customized Peer
Success Pushes

Bridging Silos

*Realizing Opportunities
to Incorporate Career*

IV

Integrating Career Advising

7. Discipline-Specific
Cocurricular Maps
8. Hybrid Advisor
Positions
9. For-Credit Career
Development Courses
10. Alumni-in-Residence
Mentors

Next-Generation Advising

Elevating Practice for Degree Completion and Success

Structuring Choice

*Balancing Exploration
and Progress*

I

Promoting Completion Efficiency

1. Pre-major Exploratory Clusters

II

Leveraging Success- Prediction Analytics

2. Data-Based Degree Milestones
3. Performance-Based Major Pathing

III

Personalizing Advice

4. Student Success Coaching Fellows
5. Transition Specialists
6. Customized Peer Success Pushes

Bridging Silos

*Realizing Opportunities
to Incorporate Career*

IV

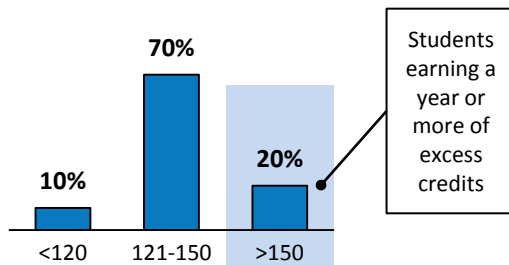
Integrating Career Advising

7. Discipline-Specific Cocurricular Maps
8. Hybrid Advisor Positions
9. For-Credit Career Development Courses
10. Alumni-in-Residence Mentors

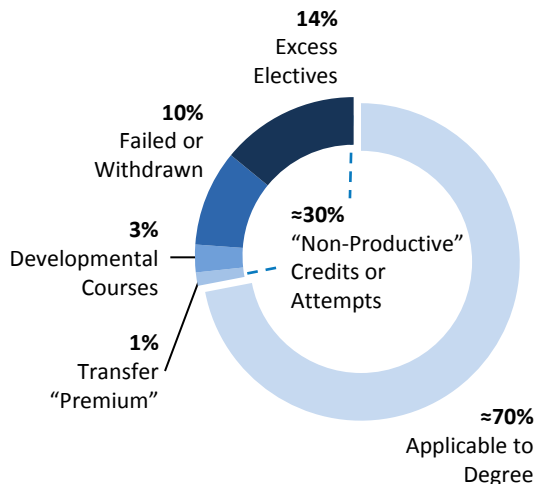
Taking the Scenic Route

Analysis of State System's Transcript Data Reveals Graduation Inefficiency

Credit Hours Earned by Bachelor's Completers



Credits Attempted by Degree Completers



Time Is the Enemy

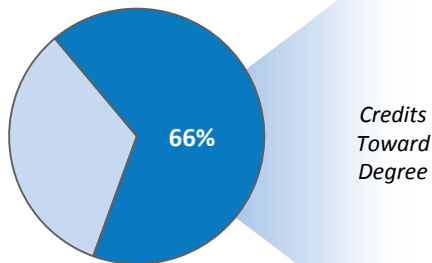
"In an environment in which time to degree has considerable implications for a student's likelihood of successfully graduating, a semester of extra coursework plays a crucial factor."

*Tristan Denley, Provost
Austin Peay State University*

Two Steps Forward, One Step Back

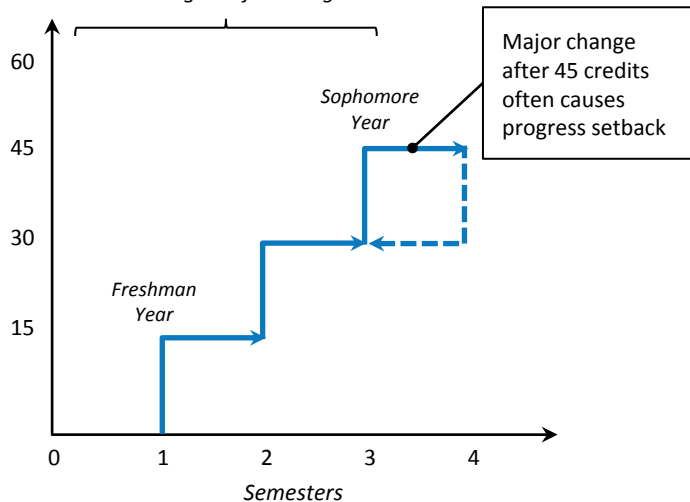
Late-Stage Major Change (or Declaration) a Key Cause of Excess Credits

**Percentage of Students
Who Re-evaluate or Change Majors**
National Estimate



Impact of Major Change
on Credits Toward Gen Ed or Major Requirements

*Progress to degree impacted less by
earlier-stage major changes*

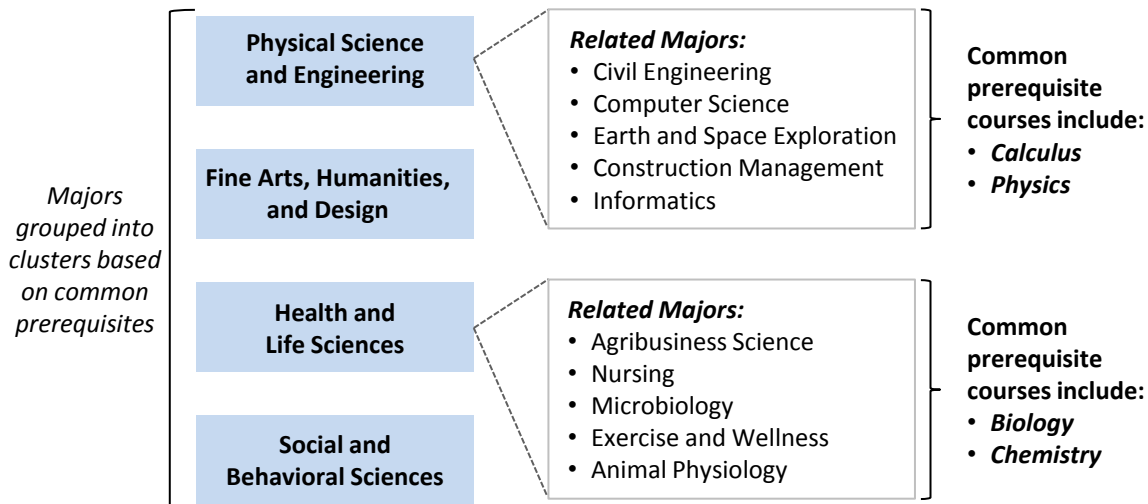


Source: Erickson, B.L., Strommer D.W., *Teaching College Freshmen*. San Francisco: Jossey Bass, 1991; Education Advisory Board interviews and analysis.

Simplifying Decision Making



Sample Exploratory Tracks for Undecided Students



Exploring...with Guardrails

Exploratory Degree Maps Provide Structure for Undeclared Students



Exploratory Track: Engineering, Math, Technology, and Physical Sciences

	Semester One		Semester Two	
	<i>Term One: 0-15 Credit Hours</i>	<i>Hours</i>	<i>Term Two: 16-30 Credit Hours</i>	<i>Hours</i>
	ASU 101: The ASU Experience	1	UNI 250: Choosing a Major	1
	UNI 150: Major and Career Exploration	1	ENG 102: Advanced Composition	3
	ENG 101: First-Year Composition	3	MAT 170/270: Precalculus or Calculus	3
	MAT 117/170/270: College Algebra, Precalculus, Calculus <small>*Depending on math placement score</small>	3	Natural Science Core Requirement	3
	Natural Science Core Requirement	3	Computer Literacy/Statistics	3
	Social/Behavioral Science or Humanities Core Requirement	3	Social/Behavioral Science or Humanities Core Requirement	3

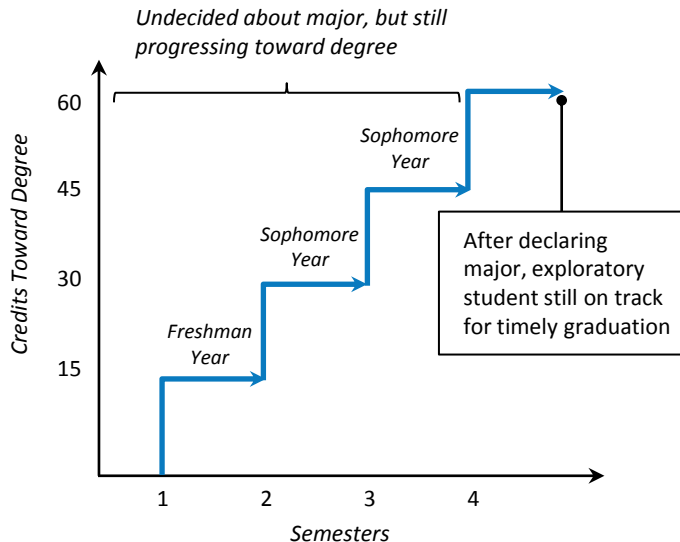
Shaded courses must be taken during designated term

UNI 150 and 250: One-credit courses on major exploration

Still on Track

Exploratory Clusters Prevent Progress Setbacks

Impact of Major Change on Credits Toward Gen Ed or Major Requirements



Decisions That Stick

“By the time they have taken 45 credits, those [students in an exploratory track] must choose a specific program. Although they may change majors at any time, most stay with the one they initially picked, and if they do change, very few do so more than once.”

*Capaldi, Lombardi, and Yellen
“Improving Graduation Rates,” Change Magazine*

Rapid Retention Gains

ASU Implements Exploratory Tracks as Part of Institution-Wide Retention Effort

2006

Elizabeth Capaldi hired as provost, maps out new student advising system based on success of similar effort at University of Florida

2008

Exploratory tracks implemented; undecided students now tracked into one of four exploratory tracks, including mandatory one-credit career and major exploration course each semester

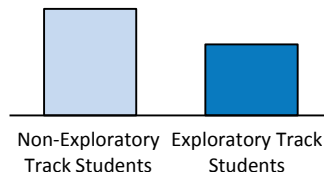
2009

2012

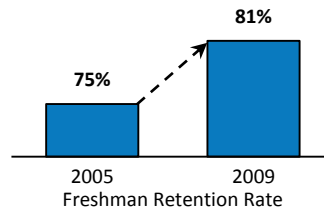
UNI 294: *Next Steps in Career and Major Planning* created for students in final semester of exploratory status

Exploratory Track Students Less Likely to Change Major After Initial Declaration

ASU Students Changing Major



ASU Reaps Quick, Significant Freshmen-Sophomore Retention Gains



Next-Generation Advising

Elevating Practice for Degree Completion and Success

Structuring Choice

*Balancing Exploration
and Progress*

I

Promoting Completion Efficiency

1. Pre-major
Exploratory
Clusters

II

Leveraging Success- Prediction Analytics

2. Data-Based
Degree Milestones
3. Performance-Based
Major Pathing

Changing Behavior

*Breaking the Cost-
Customization Compromise*

III

Personalizing Advice

4. Student Success
Coaching Fellows
5. Transition
Specialists
6. Customized Peer
Success Pushes

Bridging Silos

*Realizing Opportunities
to Incorporate Career*

IV

Integrating Career Advising

7. Discipline-Specific
Cocurricular Maps
8. Hybrid Advisor
Positions
9. For-Credit Career
Development Courses
10. Alumni-in-Residence
Mentors

The Human Disadvantage

Advisor Guidance Based on Limited Information...

“Since you got a C in Economics last semester...”

Students’ recent grades, or advisors’ recent experience with other advisees, can bias advice

“What about a Bio major?”

Suggestions for alternative majors not based on full knowledge of all possibilities and progress-to-degree implications

...Uninformed by Comprehensive Data Housed in Student Information System



Entirety of student’s academic record, including high school grades and GPA



Data on outcomes of hundreds of similar students in all possible alternative majors

Innately Fallible

“Humans tend to have blind spots when handling tasks like advising, which involves complex systems. People often give too much weight to certain details based on personal preferences.”

*Ian Ayres
Economist and Author of “Super Crunchers”*

A Largely Untapped Resource

Reams of Student Success Data Captured in SIS

Data Housed Within Typical Mid-sized Institution's Student Information System

10+ Years of enrollment
and transcript data

40K Unique students

5.5M Course-level data
elements



Student-Level Data Captured in SIS



Course History
High School GPA
SAT/ACT Scores
Course Grades
Major Selection
Demographic Information
Graduation Information
Financial Aid Status

An Embarrassment of Riches

“From everything I’ve seen, higher ed is one of the most data-rich of all industries.”

COO of Tech Start-Up

Progressive, but Not Data-Based

Degree Maps and Milestones Seldom Informed by Data Analysis

Our Advice in 2009: Developing a Degree Map Milestone Program

1 Develop prescribed four-year course progressions for each major

2 Define success milestones for each degree map

Critical courses identified based on enrollment patterns rather than analyses of student success outcomes

Journalism <i>Term 4</i>	Credits	Min. Grade
JMS 300: Principles of Journalism	3	C
JMS 375: Media and the World	3	C
Humanities/Lit. (Gen Ed)	3	C
Social Science with Lab (Gen Ed)	3	C
Stat 250: Statistics	3	C
Total Hours	15	

Building a Degree Map Milestone Program

- Base milestones on pre-existing degree requirements
- Time milestones according to historical patterns of course enrollment
- Intervene with students who obtain less than a C in a milestone course

Critical grade threshold assumed to be C

Mining Data to Inform Student Guidance

FIU's Data-Based Degree Milestones



IR Office Conducts Comprehensive Analysis to Refine Degree Map Milestones

Key Questions

- What **courses are most predictive of success** in each major?
- For each course, what is the **critical grade threshold** below which students are significantly less likely to graduate in their major?

Inputs

- Course completion and grade data for all courses, broken down by student's major
- Dependent variable: Graduation in target major within six years

Process

- 1. Surface Courses Where Grades Predictive:** Through correlation analysis, identify courses with strongest relationship to six-year graduation in major; for these courses, run linear regression on grades to identify courses where performance, not merely completion, is correlated with success
- 2. Identify Critical Grade Thresholds:** For each of these courses, identify grade threshold below which likelihood of graduation in major drops significantly

Some Surprising Findings

FIU Analysis of Student Data Yields Unexpected Insights

Some Obvious Conclusions...

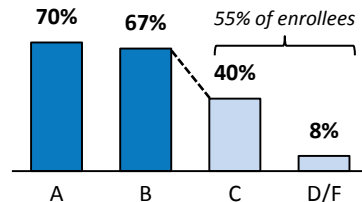
- First two math courses strongly correlated with success in any quantitative field
- Taken together, math and chemistry grades extremely predictive of student success in STEM majors

...But Many Surprising Findings

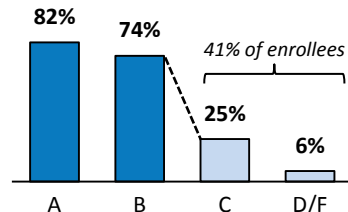
- Only 15% of nursing students who earned a B in English Composition graduated in nursing
- Intro to Statistics was only weakly predictive of success in a psychology major
- Only 25% of students majoring in political science who got a C in Comparative Politics graduated in six years

So Much for the Gentleman's C

Likelihood of Completing Degree in Natural Sciences Based on Grade in Intro Chemistry



Likelihood of Completing Degree in Political Science Based on Grade in Intro Comparative Politics



Putting a Finer Point on “Success”

Data-Based Identification of Critical Courses and Grade Thresholds (Illustrative)

Academic Majors

	Education	Natural Sciences	Nursing	Economics
First Math		B	B+	
Second Math		B-	C	
English Comp I	B			
English Comp II	C+			B-
Macroeconomics				A-
Chemistry I		B	C	

Selected “Sentinel” Courses

1 For each major, use data to help identify courses most predictive of six-year graduation

2 For each highly predictive course, use data to help identify grade threshold most critical for six-year graduation in major

Data > Experience *Our Updated Guidance*

Building a Degree Map Milestone Program

- **Not always the obvious courses**
Use past student data to identify courses most correlated with success
- **Not always a C**
Analyze past student data to identify threshold grades most correlated with student success

Not All Course Options Created Equal

Students Unaware of All Course Decision Considerations

What Students Consider When Selecting Courses



- Is this course offered at a convenient time and location?
- Is this course a major requirement?
- What does RateMyProfessor.com say about this course section?
- Are my friends taking this course?

What Students Don't Consider When Selecting Courses

1

Some courses “pivot” more easily than others

Because some courses are more central to the curriculum, if a student switches his/her major, these courses are more likely to count toward requirements in a new major.

2

Some courses are better academic fits than others for an individual student

Depending on a student's academic history, some courses may be more or less appropriate for that student.

The Netflix Effect

APSU's "Degree Compass" Course Suggestion Tool



Degree Compass tool prioritizes courses according to three key factors:

- ✓ Does course fulfill a major requirement?
- ✓ How central is the course to the curriculum? Is it more likely to "pivot" if student changes major?
- ✓ *Is student likely to be successful in course based on grade prediction algorithm?*

Courses To Consider

Course Suggestions for You from THE GOV:

You may not need to take all of the courses listed to graduate but each of the courses listed satisfies one of your degree requirements. When several courses might satisfy a degree requirement, the rating and projected grade may be helpful in selecting which course to choose. Please consult your Advisor or degree evaluation for specific program requirements.

PM3230 - Public Personnel Admin	★★★★★	View Sections
HIST1220 - World History II	★★★★★	View Sections
PM3180 - Criminal Procedures	★★★★★	View Sections
PM3760 - Methods of Research	★★★★★	View Sections
CR.J3020 - Criminal Evidence Procedure	★★★★★	View Sections
CR.J3410 - Domestic Terrorism	★★★★★	View Sections
CR.J4000 - Law Enforcement Admin	★★★★★	View Sections
CR.J3420 - International Terrorism	★★★★★	View Sections
CR.J3430 - Management of Incidents	★★★★★	View Sections

Filter:

These suggestions are courses in which other students similar to you have made successful progress in your program of study. You should always consult your advisor when planning your schedule. [What is this?](#) [Feedback](#)

Interactive interface allows students to click through to:

Curriculum and degree requirement information

Class availability information

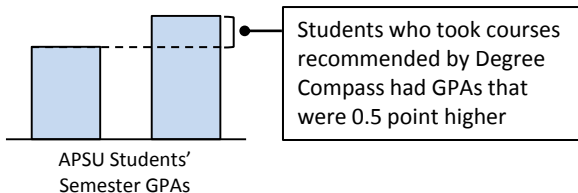
Early Returns

Better Outcomes for Students and the Institution

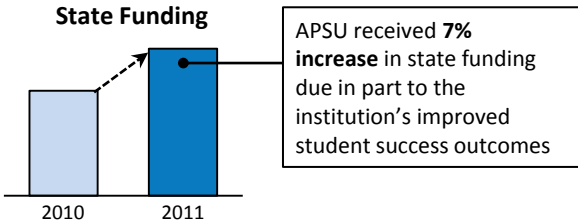
Provost Denley's "Grade Prediction Engine" Impressively Accurate

- ✓ Grade predictions within 0.5 of a letter grade
- ✓ Semester GPA prediction accurate to 0.02

Student Users Achieve Higher Grade Point Averages



APSU Receives Increase in State Funding



National Attention

2011:

APSU receives \$500K grant from Complete College America and Gates Foundation to implement Degree Compass across Tennessee

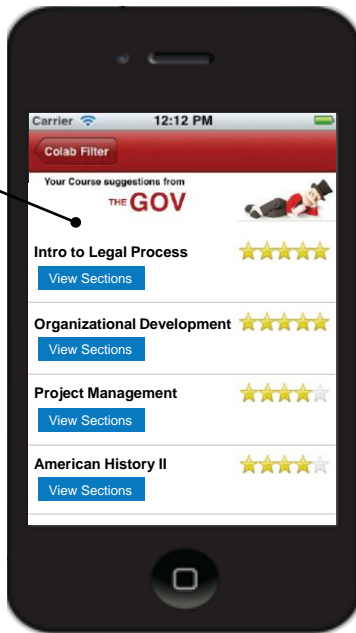
- University of Memphis
- Nashville State Community College
- Volunteer State Community College

2012:

- Featured in EDUCAUSE "Game Changers" publication
- Awarded Bronze Learning Impact award by IMS Global Learning Consortium
- Discussed by Bill Gates in keynote address on future of public higher education

Forging Ahead Quickly

Degree
Compass's
New Mobile
Application



Next: Data-Guided Major Advising

“Course selection is crucial to student success, but so too is choice of major. The APSU team is currently refining a feature that will allow Degree Compass to suggest majors on each student’s academic record and predict future grades.”

*Dr. Tristan Denley in
2012 EDUCAUSE publication*

A Delicate Balance

Managing the Tension Between Exploration and Completion



Exploration

Completion

We shouldn't narrow students' options too quickly

- Our job is to develop independent thinkers; we need to let students make their own choices
- Won't this track students to the easiest courses?
- We need to give students a chance to succeed even if the odds are against them
- This approach discourages students from taking anything not required by a degree program
- Won't these predictions become self-fulfilling prophecies?

We have an obligation to help students graduate on time

- Most students (and parents) would prefer on time graduation over greater choice
- This isn't about limiting choice, it's about helping students make more informed decisions
- With predicted grades, we can now front-load support services instead of waiting until after students run into academic trouble
- Students are currently using bad information to choose courses and majors
- Students put off required or difficult courses without understanding the consequences

The Future of Major Advising?

Accurate Course-Success Analytics Open Up New Possibilities

Major Suggestion Tool Interface (Illustrative)

MAJOR RECOMMENDATION TOOL			
<u>Student Profile</u>			
Diana Wilson			
Total Credits Earned: 45			
Cumulative GPA: 3.1			
Recommended Majors Sorted by College			
<i>Coll. of Science & Math</i>	<i>Coll. of Liberal Arts</i>	<i>Coll. of Education</i>	<i>Coll. of Eng. & Comp. Sci.</i>
<ul style="list-style-type: none"> ✔ Mathematics ✔ Physics ✔ Statistics ✔ Psychology ✔ Clinical Lab Science 	<ul style="list-style-type: none"> ✔ Political Science ✔ History ✔ Sociology ✔ Music Education 	<ul style="list-style-type: none"> ✔ Organizational Leadership ✔ Career and Technical Education ✔ Health Education ✔ Rehabilitation Services 	<ul style="list-style-type: none"> ✔ Mechanical Engineering ✔ Systems Engineering ✘ Computer Science ✘ Computer Engineering

Tool uses predicted course grades to determine best and worst major options for individual students

Next-Generation Advising

Elevating Practice for Degree Completion and Success

Structuring Choice

*Balancing Exploration
and Progress*

I

Promoting Completion Efficiency

1. Pre-major
Exploratory
Clusters

II

Leveraging Success- Prediction Analytics

2. Data-Based
Degree Milestones
3. Performance-Based
Major Pathing

Changing Behavior

*Breaking the Cost-
Customization Compromise*

III

Personalizing Advice

4. Student Success
Coaching Fellows
5. Transition
Specialists
6. Customized Peer
Success Pushes

Bridging Silos

*Realizing Opportunities
to Incorporate Career*

IV

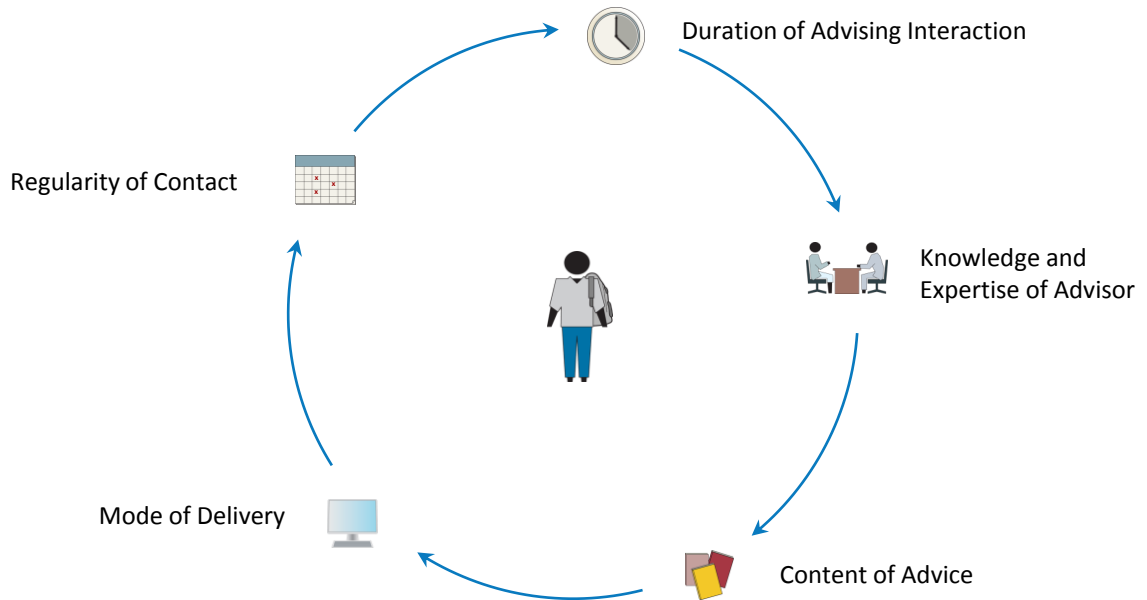
Integrating Career Advising

7. Discipline-Specific
Cocurricular Maps
8. Hybrid Advisor
Positions
9. For-Credit Career
Development Courses
10. Alumni-in-Residence
Mentors

Multiple Factors at Play

Varying Student Needs Call for Differentiated Advising Approaches

Factors that Impact Advising



Converging Issues

Struggling Students' Needs Often Numerous and Complex

Many converging factors...

...lead to student in academic difficulty

High science aptitude but...

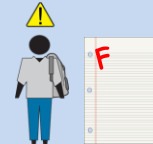
Poor study skills

Completed all course readings but...

Test anxiety

Means to attend tutoring sessions but...

Poor time management



Below 2.0 first semester

Effective, But Cost-Prohibitive

InsideTrack's One-on-One Coaching Model Effective for Increasing Retention

**Highly-Personalized
"Success Coaching"...**

insidetrack

Tailored Student Coaching Sessions

- Goal setting (academic, personal, career)
- Study skills
- Time management
- Health issues
- Financial issues

Customized to Each Institution

- Academic policies
- Institutional resources and services

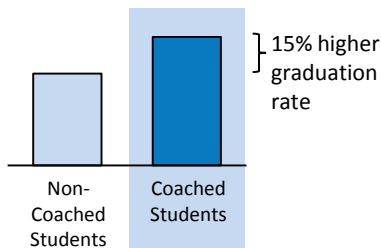
Over 350K+ Students Coached

- Traditional and nontraditional students
- In-person, phone, text messages, social media

**...With Impressive
Results...**

InsideTrack Students Graduate at Higher Rate

*(2011 Stanford School of
Education Study; n=13,500)*



**...But Unaffordable
for Most**

\$1,000

Yearly Coaching
Fee per Student

\$1M

Yearly Coaching
Cost for Entire
First-Year Class

Source: Bettinger, E.P. and Baker, R., "The Effects of Student Coaching in College: An Evaluation of a Randomized Experiment in Student Mentoring" *Stanford University School of Education* (May, 2011).

Focusing on the First Year

West Virginia University's Student Success Coaching Fellows

Services Similar to Commercial Providers' ...



Tailored Student Coaching Sessions

- Time management and study skills
- Goal setting
- Satisfactory Academic Progress compliance
- Learning preferences

Internal Resource Referrals

- Counseling
- Student Health Services

Establishing Actionable Goals

- Coachees bring proof of work toward goals to later sessions (e.g., new time management system, sleep log)

...Focused on a Students with High "Turnaround Need"



Limited population: First-year students with under 2.0 GPA after first semester



Regular contact: Initial hour-long session followed by monthly 30-minute sessions, with email support between meetings



Focused services: Students work with coaches for one to two semesters

Tapping In-House Talent

Graduates Students Trained as Coaches Work One-on-One with Coachees



- Graduate students (counseling, social work, education, and arts & sciences)
- 20 hours per week
- Hourly wage plus health benefits
- Compensated with pre-qualified graduate fellowship funds

**20 coaches worked with ≈580
students in spring 2012**

An Alternative to a Third-Party Vendor

“A lot of schools in these budgetary times don’t have the resources to hire a third-party coaching vendor. We learned that coaching can be done relatively inexpensively and that you don’t have to hire a vendor to do it for you.”

*Dr. Bernadette Jungblut, Director of Assessment and Retention
West Virginia University*

Continuous Improvement

Building on Success Coaching Initiative's First Year

2012 WVU Success Coaching Implementation

Changes for the Next Year

60% of first-year students on academic probation enrolled in coaching



Coaching tied to eight first-year seminar sections, students awarded points for attending coaching sessions
Goal: Decrease first-year students on academic probation

Academic advisors and success coaches maintain separate records of student interactions



Coaches, first-year seminar instructors, and advisors all use DegreeWorks as a central record-keeping system
Goal: Unified record of interactions with individual students

Coaches request more training on issues such as disability services, communicating with parents, FERPA, etc.



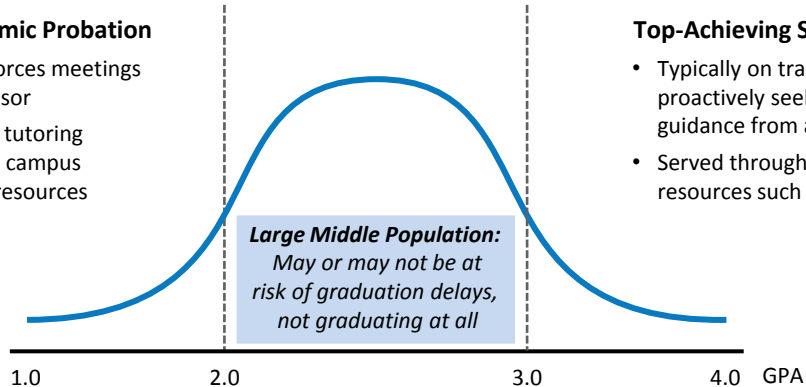
Biweekly peer-to-peer brown-bag sessions where coaches and first-year seminar instructors share struggles and best practices
Goal: Improved coaching practice and retention of coaches

Lost in the Middle?

**Distribution of Undergraduate Student
Population by GPA**
(Illustrative)

Students on Academic Probation

- Registration hold forces meetings with academic advisor
- Required to attend tutoring sessions and utilize campus academic support resources



Top-Achieving Students

- Typically on track to graduate; proactively seek information and guidance from advisors if needed
- Served through dedicated resources such as honors program

Taking a Closer Look

New Completion Goals Prompt Closer Look at “Middle Ground” Students

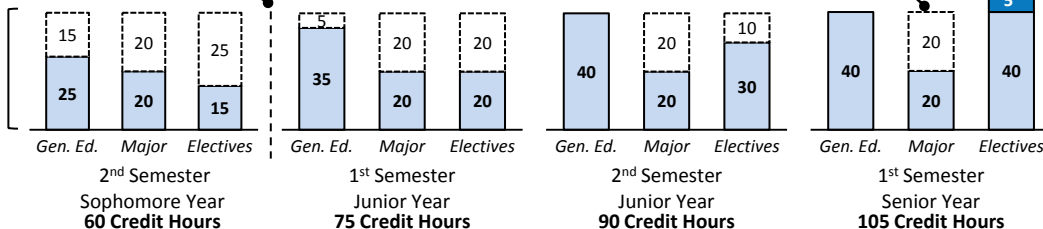


Upon Inspection, Many Students Not Progressing

- Declared in limited-access major (e.g. nursing, business)
- Junior status (60+ student credits hours earned)
- GPA below threshold for enrollment in upper-division major courses (e.g. 2.5)

Student doesn't meet upper-division requirements, can't register for courses in major

For most courses,
40 credits
required for each
curriculum area



Stymied Student Progression

Analysis Reveals Students Earning Surplus Elective Credits, Not Credits Toward Major

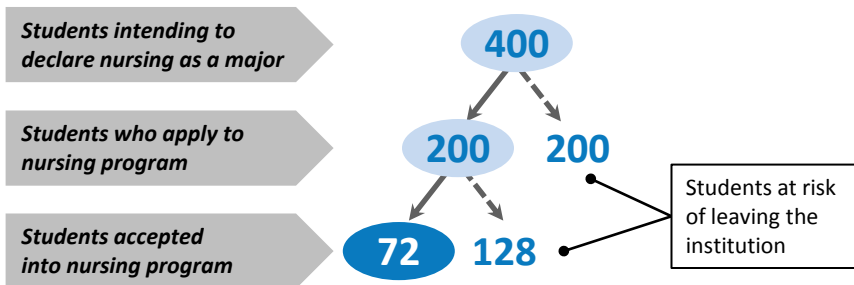
Twenty credits short in major requirements

Five “excess elective” credits

The Best Laid Plans...

Many Students in Limited-Access Majors Need New Path

Few Nursing Students Make Upper-Division Cut



A Delicate Conversation

"You have to help the student see that there is still a future for them at Georgia State and that their life's dream isn't over. There are a lot of other avenues that they can look into, but it's a very delicate conversation."

*Carol Cohen
Director, Student Advisement Center
Georgia State University*

A Dedicated Resource for Stagnating Students

Georgia State's Transition Specialists



Key Elements of Transition Advisor Role

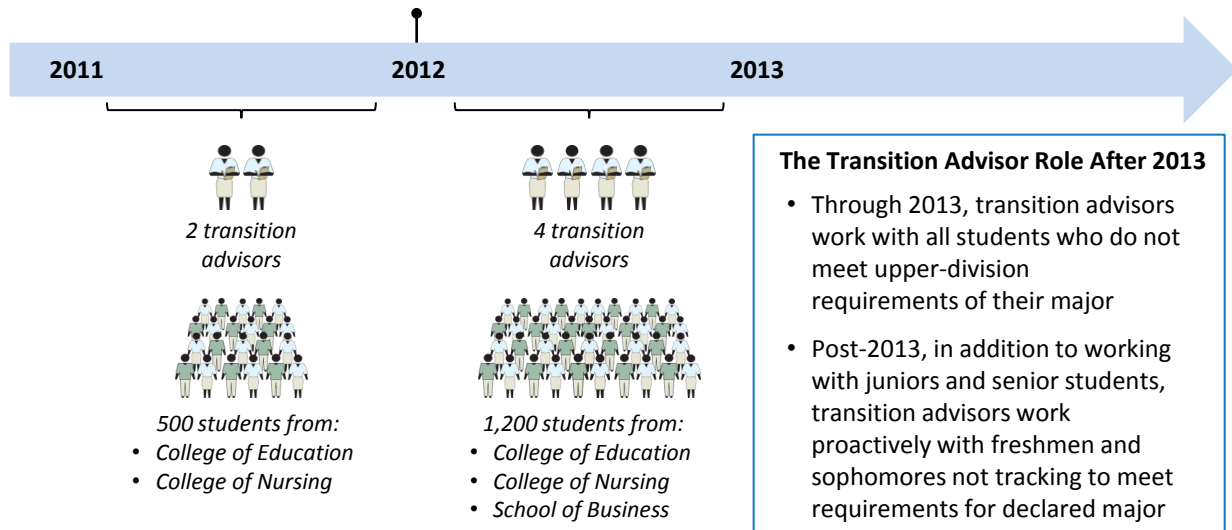
- **Broad knowledge** of various curricular requirements and policies across colleges
- **Depth of experience**; 5+ years advising undergraduate students; well-versed in especially difficult advising conversations
- **High-level relationship-building and coordinating skills**; ability to serve as “one-stop shop” for students in transition, liaising between:
 - Office of Academic Assistance
 - College Advising Office
 - Financial Aid Office
- **Reduced advising caseload**; 250- to 300-student caseload allows advisors to have intensive 1-1.5 hours conversations with students
- **Senior level**; title and compensation above advisor and senior advisor positions

Redirecting More Students

Positive Results Prompt Program Expansion

Increasing Transition Advisors to Serve More Students

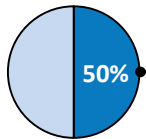
Based on transition advisors' success redirecting students into new majors, GSU expanding initiative to include students declared in business majors but not meeting upper-division requirements



Washing Out Early

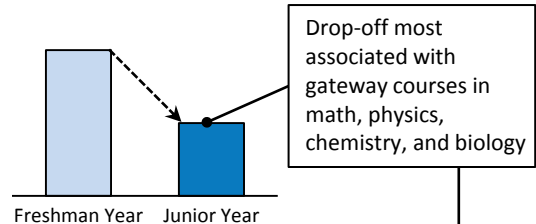
STEM Major Attrition Common Across All Institutions

Intended STEM Majors Who Fail to Complete in Major



Nationally, more than half of students who begin studies intending to complete a degree in STEM disciplines fail to do so

Number of Students Enrolled in STEM Majors



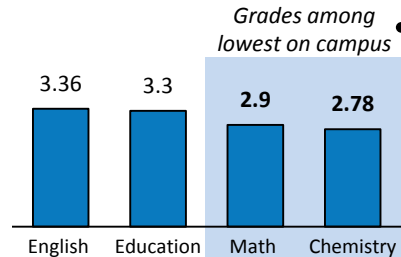
Drop-off most associated with gateway courses in math, physics, chemistry, and biology

The “Math-Science Death March”

“Freshmen in college wade through a blizzard of calculus, physics, and chemistry in lecture halls with hundreds of other students...The excitement quickly fades as students brush up against the reality of the ‘math-science death march,’ and then many wash out.”

*Emeritus Engineering Professor
Large Research-Focused Public Institution*

Introductory Course Grades by Department



Grades among lowest on campus

Combining Forces

Digital Coaching Techniques Enable Personalized, Scalable Advice



Dr. Timothy McKay

Professor of Physics and Astronomy, Director of the LSA Honors Program

Objective: Support student behavior change for improved performance and persistence in Intro Physics



Dr. Victor Strecher

Founding Director, Center for Health Communications Research

Objective: Support patient behavior change for improved public health outcomes, e.g., weight loss, smoking cessation

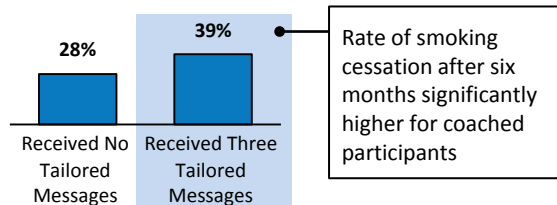
Helping people achieve difficult, highly desirable goals through tailoring



Research-Based: University of Michigan's Center for Health Communications Research (CHCR) pioneered use of tailored electronic communications to support behavior change

Proven Outcomes: Body of research supports effectiveness of strategies in areas such as smoking cessation and diabetes management

Smoking Cessation Results



Supporting Behavior Change Electronically

Digital Coaching Techniques Enable Personalized, Scalable Advice

Tailored Communication Supporting Smoking Cessation



[Rhonda](#), as we come to the end of Project Quit guide, we'd like to leave you with some words of advice from Deb. [Like you, she](#) was [ready to quit smoking](#) but faced many challenges. Here is her story.

Why did you decide to quit?

I had several good reasons for quitting. First, we needed to save money to put towards a car that would actually work. [Second, my husband wanted me to](#). Third, I didn't like leaving the fun when I'd have to step outside to smoke at places that didn't allow smoking inside. It made me feel like an outcast.

[Plus, it wasn't really fair to the kids for me to tell them not to smoke while I did. "Do as I say, not as I do" isn't such a great example to set.](#)

How did you prepare for the change?

I had heard you have to change what you do and how you think to stop smoking, so I wanted to try something I actually thought I could do to help me quit. So about two weeks before I was going to quit, I began to walk first thing in the morning. I don't normally smoke right before or after exercising, so that helped me delay my first smoke of the day.

Did you try anything else as your quit day approached?

Yes, I usually smoked about [a pack and a half a day](#), but started cutting a few out each day just to see how I'd do. I'd make a game out of it by trying to drive to work without a cigarette. Then, if I really needed it, I'd have one on the way from the parking lot to the office. I also cut back on [going to the bar or parties](#) where I knew there would be a lot of smoking. And I began to skip my "dessert" cigarette before bed.

Did these things help?

Definitely. By the time I quit, I was walking four mornings a week and beginning to feel better already.

Did you ask for help?

I told my cousin Jason that I was going to need some help. If I say I'm going to do something, [he doesn't cut me much slack until I do it](#), which is exactly what I needed. We spent a lot of time at the movies, sitting in non-smoking sections of restaurants, and hanging out in other places that wouldn't tempt me. Of course, all I really needed to do was take one good look at my kids to make me feel good about my decision.

Tailoring Variables

Name

Age, Gender, Ethnicity

Motivation for Quitting

Marital and Household Status

Cigarettes smoked

Barriers to quitting

Social support



Extensively Commercialized:
Digital health coaching services now widely available—and often covered by insurance providers—for supporting behavioral health, disease management, and wellness



Wellness + Prevention, Inc.
a Johnson & Johnson company

Creating a Database of Proven Strategies

The University of Michigan's Customized Peer Success Pushes

Michigan's Key Steps for Building Advice Database:

1



Find Performance Outliers

- Identify students who perform “better than expected” in course via simple algorithm (institutional GPA typically most predictive factor)

2



Collect Proven Strategies

- Interview outlier students about study habits and strategies used to achieve better-than-expected results
- Supplement insights and advice with information from:
 - Advanced undergraduates, such as those who lead study groups
 - Faculty who teach course
 - Research from education, psychology, and behavior change theory

3



Synthesize Advice

- Combine information gathered through interviews and research to create student testimonials; focus on actionable advice



Result: Database of 100+ unique composite testimonials, applicable at different key points during the semester (e.g. after first quiz, after midterm), tagged according to student profile characteristics

Taking a Page Out of Public Health's Book

Michigan Produces Catalog of Student-to-Student Advice

Personalized Student Web Portal (Illustrative)

- Testimonial features recent student who earned better grade than predicted (based on GPA and SAT/ACT)
- Profiled student is matched with message recipient based on **gender**, **motivation** for taking course, and **academic history**

Advice is **actionable** and **customized** based on student's current performance in course

STUDENTS JUST LIKE YOU!

Advice from your peers after the first exam

We interviewed past Physics 120 students who performed well in the course to see what advice they'd give to someone like you after the first exam. Here's what one had to say:

Blythe is currently a sophomore student. Like you, she took *Physics for Life Science Majors* because she is preparing for the MCAT.



Blythe Danner
Pre-Med, 2014

"Don't lose hope! Go over what you got wrong and talk to someone in the UM Science Learning Center about how you should have approached those problems.

Another strategy I found helpful was to complete additional practice exams, focusing on the concepts I had trouble with on the exam. The good news is that, as you learn the new material, you now have a sense of how it might be turned into an exam question!

It is still early in the course and you can still do well!"

Refining Implementation for Next Year's Students



Student Portal

First Year of Implementation

- Students receive coaching on opt-in basis (953 out of ≈1,900 eligible students)
- Grade information available separate from digital coaching portal



Potential Changes Moving Forward

- **Single portal**; course grades can be accessed only through webpage containing coaching messages
- **Students receive course performance updates in conjunction with tailored advice**; students prompted to visit portal whenever grades updated



Student Testimonials

- 16 profiles of students who performed better than expected, received A in introductory physics



- **Growing database of testimonials**; system updated to include testimonials from most recent Physics 120 students
- **Advice from range of students who exceeded predicted performance**; database includes testimonials from students who performed better than expected, even if course grade wasn't an A

Salient Voices

“Something we learned from public health people who do this work is that, when you give advice or feedback, the voice that feedback comes from is actually really important. One of the strengths of this system is that we've been able to deliver very salient voices to students.”

*Dr. Timothy McKay, Arthur F. Thurnau Professor of Physics
University of Michigan*

Free for All

Michigan's Tailoring Software Available Open Source

Michigan Tailoring System:

*Open Source Software Package for
Developing Tailored, Scalable Content*



Available for Download at:
<http://chcr.umich.edu/mts/>

- **Simple:** Step-by-step videos walk users through straightforward process of:
 - collecting recipient information
 - uploading and tagging messages/testimonials
 - programming message settings (i.e., number and timing of messages)
- **Compatible:** Software works with both Windows and Mac OS
- **Free:** Uses open source licenses

Next-Generation Advising

Elevating Practice for Degree Completion and Success

Structuring Choice

*Balancing Exploration
and Progress*

I

Promoting Completion Efficiency

1. Pre-major
Exploratory
Clusters

II

Leveraging Success- Prediction Analytics

2. Data-Based
Degree Milestones
3. Performance-Based
Major Pathing

III

Personalizing Advice

4. Student Success
Coaching Fellows
5. Transition
Specialists
6. Customized Peer
Success Pushes

Bridging Silos

*Realizing Opportunities
to Incorporate Career*

IV

Integrating Career Advising

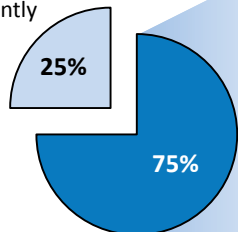
7. Discipline-Specific
Cocurricular Maps
8. Hybrid Advisor
Positions
9. For-Credit Career
Development Courses
10. Alumni-in-Residence
Mentors

“If I Could Redo My College Experience...”

In Retrospect, Grads Would Have Prioritized Career Planning

Most Students Want a “Do-Over”

Would not do anything differently

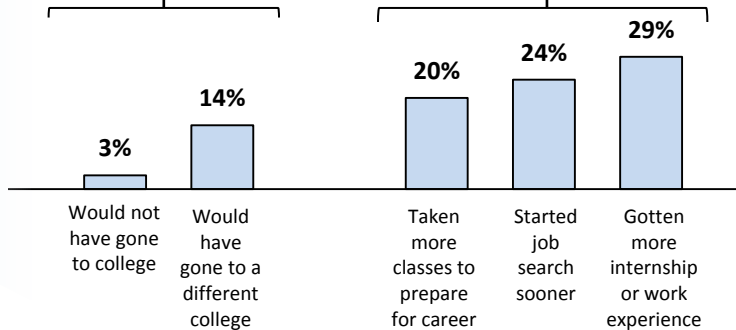


Would do something differently

Recent Grads Wish They Had Prepared More for Career, Earlier

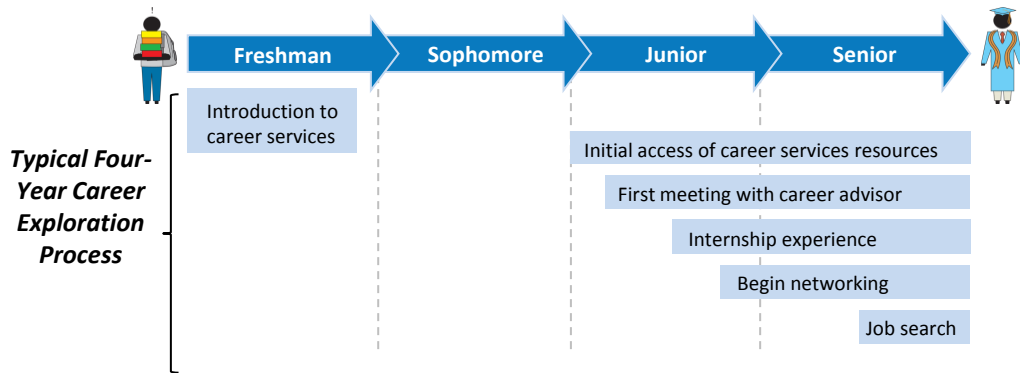
Few Regrets About Going to College

But Many Regrets About Career Prep







Source: Horn, C.V., Stone, C., and Zukin, C., “Chasing the American Dream: Recent College Graduates and the Great Recession,” *John J. Heldrich Center for Workforce Development* (2012); Education Advisory Board interviews and analysis.

Career Resources Available, But Often Accessed Late



Consequences of Late-Stage Career Preparation

-  **Uninformed:** Selects major based on limited understanding of career paths or interests
-  **Unintentional:** Fails to plan for internship experiences, receives no guidance after placement
-  **Unaware** of resume-building opportunities available in first two years
-  **Unprepared:** Career exploration begins too late; job search happens in final semester

One Size Does Not Fit All

A Missed Opportunity for Integrated Advising

Semester-by-Semester Curriculum Plan
Chemistry

The following is a sample course of study. It is the student's responsibility to ensure that all program requirements are met. This guide is not a substitute for academic advisement.

Your path to graduation may vary based on choices such as college credit you earned while in high school, transfer work from other institutions of higher learning and placement in Mathematics. You are responsible for checking prerequisites in any course.

Course Required For	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th
General Education												
Chemistry												
Mathematics												
Physical Science												
Biological Science												
Humanities												
Social Sciences												
Electives												

Academic Guidance

Career Planning Checklist

First Year:

- Explore and engage in campus activities.

Second Year:

- Consider engaging in a summer internship or employment.
- Pursue leadership opportunities on and off campus.
- Join student organizations and professional associations related to your intended career field.
- Conduct informational interviews.

Third Year:

- Complete an internship relating to your career interests.
- Research graduate programs and prepare for and take the necessary entrance exam.

Fourth Year:

- Engage in a culminating internship experience.
- Network with college alumni in your field of interest.
- Utilize Career Services resources to assist with the job search and interview process.

Career Guidance

Typical Career-Planning Checklists Too Vague

- ⊘ **Not Detailed:** Recommendations are superficial and common-sense
- ⊘ **Not Specific:** Cocurricular suggestions are unrelated to selected area of study
- ⊘ **Not Relevant:** Career planning activities not linked to specific job possibilities for major

Integrated Academic and Cocurricular Guidance

Georgia State's Discipline-Specific Cocurricular Maps



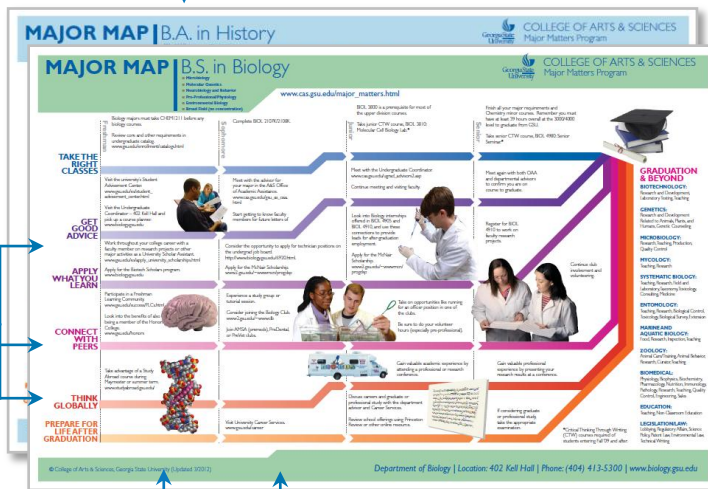
Unique to Major

- Individual map for each of the 30 Arts and Sciences majors
- Curricular and cocurricular content specific to each discipline
- Supplements academic planning tools and course catalog

Integrated Cocurricular Opportunities

*"Join the Biology, Pre-Dental, or Pre-Vet clubs.
www2.gsu.edu/~wwwclb"*

- Suggested on- and off-campus activities are associated with content of major courses



Career Possibilities Associated with Discipline

"Research and Development, Laboratory Testing, Teaching"

- Lists relevant career paths open to students in particular major

Promotes Early Planning

"Take advantage of a Study Abroad course during Maymester or summer term."

- Cocurricular prompts begin in first year

Multiple Points of Access

Maps Referred to Across Campus and Throughout the Four Years



**Advising
Appointments**



**Informational
Booth**



**Academic
Departments**



**Recruiting
Activities**



Online

Students use maps to:

- ✓ Prioritize cocurricular activities related to studies
- ✓ Plan ahead for cocurricular experiences
- ✓ Understand related career opportunities

Advisors use maps to:

- ✓ Illustrate cocurricular opportunities
- ✓ Remind themselves of relevant requirements and opportunities
- ✓ Prompt students to plan for career

Separate But Related

Organizational Boundaries Impede Integrated Advising Conversations

First-Year Academic Advising Meeting

“What majors are you interested in?”



Third-Year Career Advising Meeting

“What careers are you interested in?”



Typical Career Services Office

(National Averages at Midsize Institutions from 2011 NACE Survey)



- 4.8 full-time employees
- 2,667:1 student-to-staff ratio
- \$60,449 non-personnel operating budget

Most Common Services at Career Centers

- Counseling appointments
- Group workshops
- Career assessment tools
- Resume critiques
- Drop-in counseling sessions
- Resource library
- Career fairs
- On-campus interviewing

In theory, many opportunities to integrate career advising and academic advising

Bridging the Structural Divide

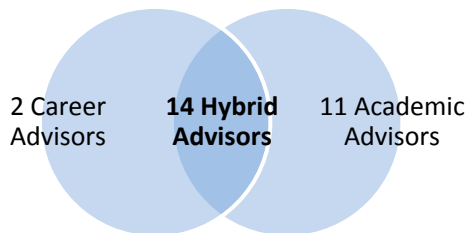
Tulane's Hybrid Advisor Positions



2007: Advising Office and Career Center Staffing



2012: Partially Integrated Staffing



Selected Hybrid Advisor Responsibilities

Academic Advising

- Serve as principal advising contact for caseload of undergraduate students
- Meet with students individually throughout year, reviewing degree plans to assure progress
- Advise students on matters such as degree planning, major selection, and curricula and core requirements

Integrated Advising

- Advise students in implementing personal, academic, and career goals

Career Advising

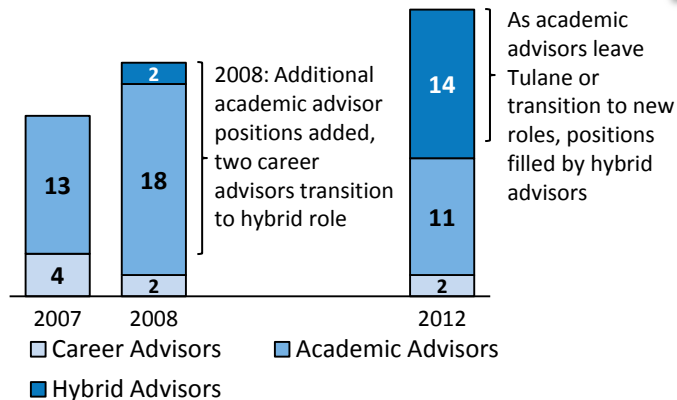
- Using skills inventories, assess student interests, aptitudes, and abilities to assist in career as well as long- and short-term academic planning
- Provide expertise in resume and CV development, interviewing skills, written correspondence and salary negotiation

Implementing Incrementally

Progressing Toward Integrated Advising One Year at a Time

Gradually Adding Hybrid Advisors

Tulane's Advising Staff Positions, 2007-2012



\$250K

Tulane's initial investment in new advising structure

\$39K

Hybrid advisor annual salary (career and academic advisors earned \$32K per year)

+4%

Increase in first-year retention rate from 2007 to 2008

Targeting the Greatest Need

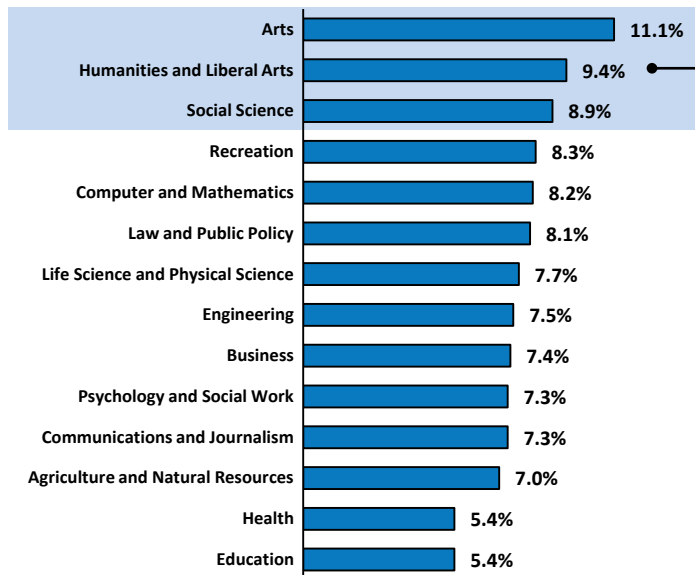
"Because students majoring in business, science, public health, and engineering tend to have a clearer picture of their career direction, we focused our hybrid advisors on other populations: students who are undecided about their major, students pursuing pre-professional careers, liberal arts students, and students who are at risk academically.

*Dr. Amjad Ayoubi, Executive Director of Career and Academic Advising
Tulane University*

Liberal Arts on the Ropes (Again)

Non-Technical Majors Struggle More in Tough Job Market

Unemployment Rates for Recent College Graduates by Major, 2010



A Riskier Proposition...

Unemployment highest among non-technical majors

...And a Hot Topic in the Media

“Is There Any Value to a Liberal Arts Education?”
Huffington Post, May 2012

“So You Have a Liberal Arts Degree and Expect a Job?”

PBS NewsHour, January 2011

“Is It Time to Kill the Liberal Arts Degree?”
Salon.com, June 2011

Source: Carnevale A.P., Cheah B., Strohl J., “College Majors, Unemployment, and Earnings: Not All College Degrees Are Created Equal,” *Georgetown University Center on Education and the Workforce* (Jan 2012); Education Advisory Board interviews and analysis.

Enhancing the Value of a Liberal Arts Degree

Career Advising an Especially Hot Topic for Private Institutions

Private Institutions with Recent Career Development Initiatives



THE NEW SCHOOL
A UNIVERSITY



Carleton College



WAKE FOREST
UNIVERSITY

Regional and National Career Meetings



- Rethinking Success: From the Liberal Arts to Careers in the 21st Century
- Ivy Plus Meeting
- Selective Liberal Arts Consortium (SLAC)
- Town hall session at 2011 NACE Conference and Expo
- Intern Bridge Conference

Key Questions at Wake Forest's "Rethinking Success" National Meeting, April 2012:

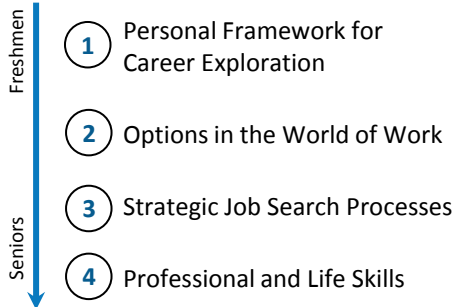
- *How are liberal arts students faring in the market today vs. 10, 20, and 30 years ago?*
- *How does the economic value of specific majors compare to the financial investment?*
- *What practical skills do well-prepared liberal arts students bring to the marketplace, and how do we best communicate those?*

Folding It into the Curriculum

Wake Forest's For-Credit Career Development Courses



Four 1.5-Credit Career Courses, Sequence Available to All Students



Connecting Studies with Career Aspirations and Skills for Beyond the Classroom:

- **Self-assess:** Identify personal values, strengths, and beliefs to inform decisions about majors, careers, and lives
- **Explore and network:** Explore careers aligned with personal framework, begin building professional network
- **Start your search:** Apply job search frameworks and marketing techniques (resume, social media, interviewing)
- **Plan for the future:** Develop personal action plan for balancing work and life (topics include time and project management, on-the-job communication, and personal budgeting)

A Major Effort and Investment

New Office Signals Institution-Wide Commitment to Career

Office of Personal and Career Development

Mission: Teach, advise, and equip all Wake Forest students to successfully navigate the path from college to career

- Established in 2010 with support from president
- Vice President for Career Development, Andy Chan, a cabinet-level position reporting to president and provost
- Office of 25 dedicated staff
- \$5 million endowment raised in 18 months

Wake Forest's Efforts Have Parents Talking

“I like that [Wake Forest] has made this a strategic priority and that students' career development will be integrated into their educational experiences. The student ends up really thinking about what he or she wants to do and is prepared to do it.”

“Wake Forest is head and shoulders above the rest of the other schools we are considering. [This] gives them a distinct advantage.”

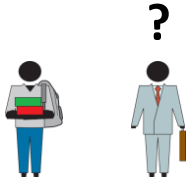
The Problem with Current Networking Events

Random Mix of Attendees Leads to Surface-Level Interactions

The One-Size-Fits-All Networking Event

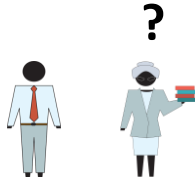
Typical Event Interactions

“Do you have any advice for the MCAT?”



Pre-Med Student Investment Banker

“Tell me about your investment portfolio.”



Finance Major Medieval Historian

Participant Feedback

Student

“Networking events are categorized by awkward silences and small talk. It’s difficult to find someone who shares your interests.”

Alumnus

“I want to support students from my alma mater, but I have a difficult time building meaningful connections at networking events. I often end up speaking with students who have no interest in my career path.”

Providing Access to Exceptional Alumni

Wesleyan's Alumni-in-Residence Mentors

Executive-in-Residence Visit Winter 2011

**Industry:**

Investment Banking

Profile:

- Alumnus has a successful career with Goldman Sachs in sales and trading
- Former student athlete

Program Feedback:

“He loved the program and students were thrilled to have him on campus.”

Itinerary Highlights of Three-Day Visit

1. Group session with student athletes focusing on how to discuss their skills and experiences in job interviews
2. Dinner with the Wesleyan student investment group
3. Individual appointments with students for mock interviews, resume critiques, and general industry advice

A High-Impact Mentoring Experience

Wesleyan Secures Impressive Roster of Mentors



- Head of Sony Entertainment Pictures
- Notable Biochemical Researcher
- Former Editor of Major Newspaper
- MacArthur Fellow in Sustainability

Defined Selection Criteria:

- ✓ Alumni who are recognized innovators with significant achievements in their fields
- ✓ Individuals with the ability to connect with and inspire students

Not Just Another Info Session

“We see this program as a mentoring experience. The university asks the visiting alumni to talk about the power of the liberal arts, the best mistake they ever made, the role of serendipity in their career, and how Wesleyan helped them... This is stuff that students will not get at a company information session or a networking event.”

*Michael Sciola
Director of Career Resource Center, Wesleyan University*

Academic Advising Resource Center

Supporting Implementation (Forthcoming)

Exemplar Degree Maps



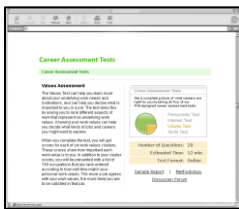
- Maps for various disciplines
- Process and resource details

Integrated Career Curricula



- Course descriptions and syllabi
- Example student exercises

Sample Surveys and Assessments



- Student satisfaction surveys
- Interest and values assessments

Add'l Documents and Templates



- Job descriptions
- Advisor development resources