Workshop on Developing Interdisciplinary Programs

Valparaiso University
March 21, 2015
Road Map

1. The Growth Imperative

2. The Professional Masters Opportunity

3. Core Competencies for Launching Successful Programs
The End of the Enrollment Boom

Revenue “Tailwinds” Can’t Be Relied On Going Forward

Revenue

- State Funding
- Federal Funding
- Tuition
- Philanthropy
- Auxiliary Revenue

Tuition

- Enrollment Volume
  - Demographics
    - Decline in high school graduates
  - Retention
    - At-risk populations growing in share
- Net Tuition Revenue
  - List Price
    - Family finances under stress
  - Financial Aid
    - Increasing need and merit aid competition

Source: Education Advisory Board interviews and analysis.
How We’re Responding

Delaying the Demographically Inevitable

Running To Stay in Place
Deploying the Entire “EM Playbook”

- Targeted financial aid
- Expand recruitment to far-flung states
- Increase applicant pool
- Better articulate the college’s brand

Ruinous Competition
Weaker Pricing, Escalating Support Costs

- Flight to Quality
- Price Shopping Across Income Levels
- Higher Academic Support Costs
- Unsustainable Discounting

Today

Five Years Hence

A Decade and Beyond

Source: Education Advisory Board interviews and analysis; http://chronicle.com/article/The-Admissions-Playbook-Is-Up/141625/

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Many Institutions Already Struggling

Concerns About Enrollment and Net Tuition Revenue

- I am concerned about meeting my institution’s new student enrollment goals this year
- Increases in the discount rate have decreased my institution’s net tuition revenue

A Way Out?
Diversifying Enrollment and Revenue

Sustainable Frontiers
- International Undergraduates
- Community College Transfers
- Adult Degree Completers
- Professional Master’s

Critical Requirements
- New Program Designs
- New Student Support Services
- New Marketing Approaches
- New Online Infrastructure
Road Map

1. The Growth Imperative
2. The Professional Masters Opportunity
3. Core Competencies for Launching Successful Programs
Of Growing Importance Across Sectors

But Privates Placing Greater Emphasis Overall

Master’s as Share of Total Degree Completions by Sector, 2001 vs. 2011

<table>
<thead>
<tr>
<th>Sector</th>
<th>2001</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Research</td>
<td>38.3%</td>
<td>40.8%</td>
</tr>
<tr>
<td>Private Master's</td>
<td>32.9%</td>
<td>37.2%</td>
</tr>
<tr>
<td>Public Research</td>
<td>22.7%</td>
<td>22.6%</td>
</tr>
<tr>
<td>Public Master's</td>
<td>20.6%</td>
<td>21.8%</td>
</tr>
<tr>
<td>Private Bacc.</td>
<td>5.2%</td>
<td>7.7%</td>
</tr>
<tr>
<td>Public Bacc.</td>
<td>1.9%</td>
<td>2.6%</td>
</tr>
</tbody>
</table>

Even baccalaureate colleges have entered master’s market

Institutions Leading Each Sector in Number of Master’s Added, 2001-2011

<table>
<thead>
<tr>
<th>Institution</th>
<th>2001</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>USC</td>
<td>2,980</td>
<td>5,348</td>
</tr>
<tr>
<td>Liberty University</td>
<td>272</td>
<td>5,487</td>
</tr>
<tr>
<td>ASU</td>
<td>2,179</td>
<td>4,213</td>
</tr>
<tr>
<td>UMUC</td>
<td>762</td>
<td>3,210</td>
</tr>
<tr>
<td>Middlebury</td>
<td>112</td>
<td>245</td>
</tr>
<tr>
<td>Chadron State College</td>
<td>49</td>
<td>127</td>
</tr>
</tbody>
</table>

Source: National Center for Education Statistics, IPEDS Data Center; Education Advisory Board interviews and analysis.
## Defining the Professional Masters

### A Contrast To Traditional Master’s Programs

<table>
<thead>
<tr>
<th>Traditional Master’s</th>
<th>Professional Master’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full-time, residential</td>
<td>Part-time, low residence</td>
</tr>
<tr>
<td>Thesis</td>
<td>Project or work experience</td>
</tr>
<tr>
<td>Path to PhD</td>
<td>Path to employment</td>
</tr>
<tr>
<td>Designed around faculty research interests</td>
<td>Designed around employer hiring interests</td>
</tr>
<tr>
<td>Taught exclusively by tenure stream faculty</td>
<td>Taught by tenure stream faculty and adjuncts</td>
</tr>
<tr>
<td>Housed within single department</td>
<td>Cross-disciplinary/ multiple departments</td>
</tr>
<tr>
<td>Financial aid available</td>
<td>Typically self-pay</td>
</tr>
<tr>
<td>Younger, less experienced students</td>
<td>Often older students with work experience</td>
</tr>
</tbody>
</table>

Source: Education Advisory Board interviews and analysis.
Driven by Both Supply and Demand

Why Master’s Degrees Are Increasingly Popular

Ready Supply from Universities

- Generates enrollment revenue as core markets stagnate
- Protects selectivity and brand of core programs, including bachelor’s
- Not subject to caps on undergraduate tuition
- Makes use of lower cost, more flexible instructors

Growing Demand from Students, Employers

- Delivers specialized skills for increasingly technical roles
- Provides practical experience that eases entry into workforce
- Allows midcareer professionals to keep pace with upskilling
- Offers shorter, less costly alternatives to traditional graduate degrees

Source: Education Advisory Board interviews and analysis.
Where the Growth Is
Large Fields Still Popular, But Smaller Fields Growing Faster

Growth in Graduate Degrees Conferred by Discipline, 2006-2011

1) Disciplines are defined by 2-digit Classification of Instructional Program (CIP) codes. Data includes master’s and doctoral degrees.

Source: National Center for Education Statistics, IPEDS Data Center; Education Advisory Board interviews and analysis.
Yesterday’s Opportunities?
Core Professional Programs Face Threats to Demand Or Capacity

Graduate Degree Completions by Discipline, 2011

- Declining M.Ed. demand due to policy upheaval and new competitors
- Declining MBA demand due to market saturation and wavering value
- Rising applications, but limited capacity due to clinical sites and faculty
- Declining J.D. demand due to weak job market and high student debt

Source: National Center for Education Statistics, IPEDS Data Center, Education Advisory Board interviews and analysis.
Solving the Supply and Demand Challenges

Designing Programs to Expand Markets and Use Existing Capacity

**Softening of Traditional Demand**
- Economic recession
- Shifting industry structures
- Regulatory changes

Identify “nontraditional” professional students subject to a different set of market and industry trends

**Roadblocks to Expanding Supply**
- High fixed costs (faculty, facilities)
- Accreditation standards
- Rankings anxiety

Develop “side” programs that draw on existing resources without detracting from rankings or accreditation

Design new programs that deliver existing courses in ways that appeal to new student markets

Source: Education Advisory Board interviews and analysis.
The Specialized Master’s Degree
Upstarts Growing Faster than Traditional MBA or J.D.

Enrollments Reported to AACSB By Degree Type, 2007-2011

<table>
<thead>
<tr>
<th>Degree Type</th>
<th>2007</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBA</td>
<td>141K</td>
<td>156K</td>
</tr>
<tr>
<td>Specialized Master's</td>
<td>37K</td>
<td>64K</td>
</tr>
</tbody>
</table>

Law Degrees Completed By Award Level, 2001-2011

<table>
<thead>
<tr>
<th>Award Level</th>
<th>2001</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctoral Degrees (J.D.)</td>
<td>39K</td>
<td>46K</td>
</tr>
<tr>
<td>Master's Degrees (LL.M., M.S.)</td>
<td>3.8K</td>
<td>7K</td>
</tr>
</tbody>
</table>

# Building Express Lanes to the Masters

Accelerated Bachelor’s/Master’s Degrees Challenging But Promising

<table>
<thead>
<tr>
<th>3+1</th>
<th>3+2</th>
<th>3+3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Master of Teaching</strong></td>
<td><strong>Master of Phys. Asst. Studies</strong></td>
<td><strong>Juris Doctor</strong></td>
</tr>
</tbody>
</table>

## 3+1
- Captures high-achieving undergraduates for a year or more of graduate study
- Can path in students from other institutions through 3+X articulation agreements
- Reduces cost (and opportunity cost) of education in price-sensitive environment
- Aligns with growing popularity of AP credits and advanced standing for undergraduates

## 3+2
- Hampered by logistics of coordinating credit and tuition across academic units and levels
- Discouraged by accreditors and state license boards in closely regulated fields
- Inadequately promoted to potential market of undergraduates who might have interest
- Lacks appeal to many students who still want a traditional four-year undergraduate experience

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Source: Institutional websites; Education Advisory Board interviews and analysis.
Road Map

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2. The Professional Masters Opportunity

3. Core Competencies for Launching Successful Programs
New Program Types Require New Capabilities
A Contrast To Traditional Master’s Programs

<table>
<thead>
<tr>
<th>Professional Masters Students</th>
<th>New Program Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>In Fast-Changing Industries</td>
<td>Faster Program Approval</td>
</tr>
<tr>
<td>Strongly Focused on ROI</td>
<td>Rigorous Market Research</td>
</tr>
<tr>
<td>Long Out of College</td>
<td>More Flexible Admissions Requirements</td>
</tr>
<tr>
<td>Evaluating Multiple Programs</td>
<td>Student-Centric Program Design</td>
</tr>
<tr>
<td>Shopping Online</td>
<td>Online Marketing and Recruiting</td>
</tr>
<tr>
<td>Working Full-Time</td>
<td>Flexible Delivery Modes</td>
</tr>
<tr>
<td>Expect 24/7 Support</td>
<td>Working Adult Support Services</td>
</tr>
<tr>
<td>Looking to Rise within Their Org</td>
<td>Leadership Development</td>
</tr>
<tr>
<td>See Masters as Route to a Specific Job</td>
<td>Career Placement</td>
</tr>
</tbody>
</table>

Source: Education Advisory Board interviews and analysis.
Not Yet Reaching the Whole Market

Traditional Program Design Limits Audience for Professional Programs

Common Enrollment Constraints

Geography
“I can’t travel or move to this program.”

Schedule
“I can’t fit this program into my full-time work schedule.”

Age or Work Experience
“I’m too young (or too old) and have too little (or too much) work experience for this program.”

Academic Preparation
“I have the aptitude for this program– but not the standard qualifications.”

Source: Education Advisory Board interviews and analysis.
What Workers Want
Common Attributes of Effectively Designed Programs

Flexible Delivery
- Accommodates adults with competing professional and personal commitments
- May expand audience to include new geographic and demographic markets

Accelerated Format
- Reduces opportunity cost for those taking time off work for degree
- May also reduce price, depending on credit and tuition structures

Stackable Credentials
- Allows students to pick out modular, often specialized, parts of degrees
- Encourages students to later apply credits toward advanced credentials

Interdisciplinary Pathways
- Tailors content and pedagogy to students formally trained in another discipline
- Provides common knowledge base to students with varied backgrounds

Practical Experience
- Fulfills growing employer demand for new hires with work experience
- Enhances employment outcomes by producing better prepared graduates

Professional Development
- Encourages application of program content in current work setting
- Allows for networking, mentorship, and other career advancement benefits

Source: Education Advisory Board interviews and analysis.
### Not Just “Working Professionals”

Designing Programs to Serve Distinct Market Segments

<table>
<thead>
<tr>
<th>Entry into new field</th>
<th>Professional Goals</th>
<th>Advancement in current field</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Career Starters</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In related discipline</td>
<td>Recent graduates seeking professional degree before entering workforce</td>
<td>Accelerated format</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stackable credentials</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Practical experience</td>
</tr>
<tr>
<td><strong>Career Changers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In unrelated discipline</td>
<td>Mid-career adults seeking graduate degrees to move into new fields</td>
<td>Accelerated format</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Interdisciplinary pathways</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Practical experience</td>
</tr>
<tr>
<td><strong>Career Climbers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ac...</td>
<td>Mid-career professionals seeking graduate degrees for promotion or raise</td>
<td>Accelerated format</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stackable credentials</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Professional development</td>
</tr>
<tr>
<td><strong>Career Crossers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mid-career professionals seeking cross-training to advance in current fields</td>
<td>Accelerated format</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Interdisciplinary pathways</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Practical experience</td>
</tr>
</tbody>
</table>

Source: Education Advisory Board interviews and analysis.
For Career Starters

Speed Entry into Workforce, Lead into Advanced Degree

M.S. in Management/MBA

*Recent graduates jumpstart career with one-year master’s, then return with work experience for MBA*

**Accelerated Format**
- 10 courses from MBA program
- Tuition incentive covers cost of 4 courses for young alumni who complete in 2 semesters

**Stackable Credentials**
- 9 courses count toward MBA
- Returning students can earn MBA after only 7 more courses, including capstone

**Practical Experience**
- No experience required for MS
- Students must earn 2+ years of work experience before returning for MBA

**Alternative Approach**
Reduce time to master’s with 4+1/3+2 option

Build stackable certificates out of master’s curricula

Offer 3-semester MS to allow for summer internship
For Career Climbers
Accommodate Current Work While Building on Prior Experience

Advanced Doctorate in Occupational Therapy

*Modular curriculum accommodates various academic backgrounds, while delivery options bypass schedule and travel limitations*

Flexible Delivery
- Asynchronous online courses with 3 start dates per year
- Saturday on-campus sessions twice each semester, with option to attend virtually

Stackable Credentials
- Multiple points of entry build on prior academic credentials:
  - 46-credit track with BS in OT
  - 33-credit track with MS in OT
- Optional 12-credit certificate can be applied toward OTD

Professional Development
- Core courses include clinical, research, and leadership skills
- Capstone fellowship brings new learning from academic work into current place of employment

Alternative Approach
- Schedule half-term courses for busy professionals

Alternative Approach
- Offer prior learning credit for professional experience

Alternative Approach
- Facilitate networking through alumni events, social media

Source: Education Advisory Board interviews and analysis.
For Career Changers

A Fast Alternative Route for Students Trained in Diverse Fields

Career Switcher Teacher Licensure and M.Ed.

*Provisional licensure prepares midcareer adults for full-time, mentored teaching in as few as four months*

**Accelerated Format**
- Three start dates (May, Aug, Jan) allow employed students to set their own paces
- 1/3 of students complete all 6 pre-licensure courses in one intensive summer term

**Interdisciplinary Pathways**
- Students demonstrate subject expertise from bachelor's and 5+ years of work experience
- Courses teach general pedagogy, plus research-based methods for classroom management and measurable learning

**Practical Experience**
- Level I: 5 of 6 courses include structured practicum
- Level II: Full year of teaching under provisional license, with mentorship from retired teacher or school administrator

**Alternative Approach**
- Apply program prerequisites toward degree requirements
- Offer post-bac. classes to help students meet prerequisites
- Provide unpaid externships if paid placements are scarce

Source: Education Advisory Board interviews and analysis.
For Career Crossers

Customize Format and Curriculum for Target Audience’s Industry

Physician Executive MBA

Distinct professional needs of niche audience shape delivery of general business competencies

Flexible Delivery
- One-year, blended format reduces excess commitment
- Saturday classes recorded in case of emergency absences
- 4 one-week residencies fit into typical PTO & CME allowance

Interdisciplinary Pathways
- Curriculum teaches business principles through health care applications and case studies
- No prior business coursework assumed

Professional Development
- Credential-conscious health care industry values MBA over non-degree programs
- Annual symposia connect 450 physician alumni for continuing education and networking

Alternative Approach
Offer 100% online route to expand geographic bounds

Alternative Approach
Provide introductory courses to “level” diverse backgrounds

Alternative Approach
Diversify audience to facilitate interprofessional learning

Source: Education Advisory Board interviews and analysis.
Don’t Start from Scratch
New Programs Commonly Draw on Existing Faculty and Courses

Models for Crosslisting Content

100% Existing Courses
*LL.M. in American Law*

Substantial Cross-Listing
*Master of Finance*

New Content, Shared Personnel
*Advanced Doctorate in OT*

- New students fully integrated into existing classes
- Program combines existing courses with newly created ones
- Existing faculty develop new set of courses at advanced level
## The Crosslisting Debate

Do Challenges of Sharing Courses Detract From Efficiencies?

<table>
<thead>
<tr>
<th>Advantages of Crosslisting</th>
<th>Related Challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Expenses</td>
<td>May require creation of new course sections</td>
</tr>
<tr>
<td>Instructional Logistics</td>
<td>Often requires reconciliation of conflicting schedules and grade scales across programs</td>
</tr>
<tr>
<td>Classroom Experience</td>
<td>Demands that instructors balance the needs of students with divergent experiences</td>
</tr>
<tr>
<td>Curricular Content</td>
<td>May result in electives too specialized or technical to be relevant to core program</td>
</tr>
</tbody>
</table>

- **Advantages of Crosslisting**
  - Reduces course development costs
  - Increases instructional efficiency, especially for small programs
  - Provides greater academic, professional, and cultural diversity in the classroom
  - Enhances elective options (if new courses are added to core program curriculum)

- **Related Challenges**
  - May require creation of new course sections
  - Often requires reconciliation of conflicting schedules and grade scales across programs
  - Demands that instructors balance the needs of students with divergent experiences
  - May result in electives too specialized or technical to be relevant to core program
A Market-Driven Approach to Program Design

Creating Niche Programs Micro-Targeted to Specific Roles

Core Professional Programs
- Larger enrollment
- Slower growth
- Targeted to large professions and roles within relatively stable industries
- Less focus on specialized skills

Specialized Professional Programs
- Smaller enrollment
- Faster growth
- Targeted to new industries, new roles within rapidly changing industries
- More focus on specialized skills

Marketing focused on institutional brand and reputation

Micro-targeting students based on roles, skill clusters, industries

Source: Education Advisory Board interviews and analysis.
Microtargeting Your Market

What Questions Should We Ask When Designing Programs?

**Industries and Employers**
- In what fields should this program prepare graduates to work? Who might hire them?
- What employers might seek contract training?

**Occupations and Roles**
- To what types of positions should we target our program?
- What level of education and specialized training do these positions require?

**Required Skill Sets**
- What specialized skills should our program teach to match employer needs?
- What general skills (e.g., leadership) do roles in this field typically require?

**Geographic Markets**
- What metropolitan areas demonstrate the strongest demand for this program?
- What industries or employers are driving demand within the hottest markets?
“Gut” Doesn’t Cut It

“We need more than an internal hunch. Our people may know the regional market, and their hunches are a good place to start, but we need to validate them.”

Associate VP for Academic Affairs
Private Master’s University

If We Build It, Will They Come?
Estimating Demand for New Academic Programs

Student Demand
- Number of degrees granted annually (IPEDS)
- Student expressions of interest (ACT/SAT, custom surveys, focus groups)
- Student demographics (Census, College Board, GMAC)

Employer Demand
- Number of jobs (EMSI, BLS, Monster, NACE)
- Occupational projections (BLS, employer surveys)
- Number of businesses (Nielsen Claritas, Dunn & Bradstreet)
- Job qualifications (industry associations, licensing bodies, employer surveys)

Competition
- Recently launched programs (accreditators)
- Market share by institution (IPEDS)
- Number of programs vs. job openings in region
- Cross-application rates (ETS, GMAC)

Source: Education Advisory Board interviews and analysis.
Company Profile
Clark Research International (CRI) offers clients a breadth of multidisciplinary skills including research science, policy analysis, economic analysis, and data collection and analysis.

Job Description
CRI seeks a full-time IT project manager for our Boston office. He/she must be able to build strategic partnerships; communicate project value to business managers; and be able to create and implement operational solutions. Should have a strong background with software development, preferably in C++, with experience in implementing Sybase. Responsibilities include environmental assessment, documentation, process improvement, systems testing, and training.

Compensation & Benefits
Salary: $70,000 per year. Benefits: Medical, Dental, Wellness, Childcare available. Requirements: BA/BS with 2-4 years of experience or the equivalent combination of education and experience; PMP Certification required.

Burning Glass Added Extracts
- **Full location:** MSA (14460); LMA (MT257165); Geocode: 42.3597, 71.0560
- **Min experience:** 2-4 years, Level 2
- **Education Attainment:** Bachelor’s
- **Major:** Computer Science
- **Salary:** $70,000 base annual
- **Benefits:** Medical, Dental, Wellness, Childcare
- **Type of Job:** Full-time
- **General Skills:** Collaboration, Communications
- **Specific Skills:** IT Design, Process Improvement, Testing, C++, Sybase
- **Certifications:** PMP
- **Number of Positions:** One posting
Exploring Demand Within New Market Niches

Three Opportunities to Provide High-Need Specialized Education

Cybersecurity
Monitoring threats and designing solutions to support digital commerce and protect national infrastructure

Big Data
Storing, analyzing, and interpreting data to generate business insights across industries

Health Informatics
Application of information technology and analytics toward data capture and clinical improvement

Carnegie Mellon
M.S. in Information Security Technology and Management

Georgia Tech
M.S. in Information Security

DePaul University
M.S. in Computer Information and Network Security

DSU Dakota State
M.S. in Information Assurance
Supporting the Digital Shift
Factors Driving Demand for Cybersecurity Skills

Prevalence of digital commerce
Need to protect customer information and develop secure systems as more and more business is conducted online

Reliance on electronic records
Growing need to support industries such as health care, transitioning toward electronic medical records

Sophistication of cyber attacks
Pressing call to defend national infrastructure (e.g., telecommunications, utilities) from increasingly sophisticated threats

Emergence of cybersecurity industry
Market opportunities to develop security software and provide security services for clients across industries

Specialized Training for Technical Roles

A Simplified Taxonomy of Cybersecurity Positions

<table>
<thead>
<tr>
<th>Specialized Cybersecurity Training</th>
<th>Entry Level</th>
<th>Mid Level</th>
<th>Mid to Senior Level</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Security Analyst</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assists in monitoring threats and investigating incidents, provides technical support</td>
<td>27% of postings</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Security Specialist</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identifies, investigates, and communicates security risks; administers related policies</td>
<td>6% of postings</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>IT Auditor</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conducts internal IT audits, risk assessment, and business process analysis</td>
<td>8% of postings</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Security Engineer</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Designs, tests, and implements security infrastructure</td>
<td>37% of postings</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Security Manager</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leads team of security professionals, oversees security planning</td>
<td>10% of postings</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Burning Glass Labor/Insight, Education Advisory Board interviews and analysis.
# Focused on Risk and Regulation

Fast-Growing Skill Clusters Demanded by Cybersecurity Employers

<table>
<thead>
<tr>
<th><strong>Number of Cybersecurity Positions</strong></th>
<th><strong>Number of Cybersecurity Positions</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Requiring Select Compliance Skills</strong></td>
<td><strong>Requiring Select Risk Management Skills</strong></td>
</tr>
<tr>
<td><strong>Certified Information Systems Auditor</strong></td>
<td><strong>Risk Management</strong></td>
</tr>
<tr>
<td>Internal Auditing</td>
<td>1,700</td>
</tr>
<tr>
<td>Compliance Management</td>
<td>1,673</td>
</tr>
<tr>
<td>Legal Compliance</td>
<td>946</td>
</tr>
<tr>
<td><strong>External Auditing</strong></td>
<td><strong>Loss Prevention</strong></td>
</tr>
<tr>
<td>HIPAA Compliance</td>
<td>946</td>
</tr>
<tr>
<td>Risk Assessment</td>
<td>760</td>
</tr>
<tr>
<td>Triage</td>
<td>430</td>
</tr>
</tbody>
</table>

Source: Burning Glass Labor/Insight, Education Advisory Board interviews and analysis.

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Hot Cybersecurity Markets

Local Industries Driving Demand in Top MSAs

Source: Burning Glass Labor/Insight, Education Advisory Board interviews and analysis.
Exploring Demand Within New Market Niches

Three Opportunities to Provide High-Need Specialized Education

Cybersecurity
Monitoring threats and designing solutions to support digital commerce and protect national infrastructure

Big Data
Storing, analyzing, and interpreting data to generate business insights across industries

Health Informatics
Application of information technology and analytics toward data capture and clinical improvement

NORTHWESTERN UNIVERSITY
M.S. in Medical Informatics

UNIVERSITY OF WATERLOO
Master of Health Informatics

XAVIER UNIVERSITY
MSN, Informatics Concentration

UMDNJ
M.S. in Biomedical Informatics

Source: Institutional websites; Education Advisory Board interviews and analysis.
### Specialized Skills in High Demand

Tailoring Curricula To Align with Hiring Criteria

<table>
<thead>
<tr>
<th>Curriculum Cluster Opportunities</th>
<th>Number of Job Postings that Mention Skill</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronic Disease Management</td>
<td>Clinical Documentation: 2,106</td>
</tr>
<tr>
<td></td>
<td>Patient Care: 752</td>
</tr>
<tr>
<td></td>
<td>Oncology: 739</td>
</tr>
<tr>
<td></td>
<td>Medical Terminology: 613</td>
</tr>
<tr>
<td></td>
<td>Case Management: 608</td>
</tr>
<tr>
<td>Regulations and Procedures</td>
<td>ICD-10 Coding: 624</td>
</tr>
<tr>
<td></td>
<td>HIPAA: 402</td>
</tr>
<tr>
<td></td>
<td>Medicare: 292</td>
</tr>
<tr>
<td>Systems and IT Management</td>
<td>Electronic Health Record: 1,489</td>
</tr>
<tr>
<td></td>
<td>Billing Systems: 665</td>
</tr>
<tr>
<td></td>
<td>Health Information Management: 661</td>
</tr>
<tr>
<td></td>
<td>Clinical Information Systems: 552</td>
</tr>
</tbody>
</table>

Source: Burning Glass Labor/Insight, Education Advisory Board interviews and analysis.
# General Skills Also Needed

## Communication and Business Skills Required Across Job Categories

### Communication and Coordination

<table>
<thead>
<tr>
<th>Skill</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication</td>
<td>14,088</td>
</tr>
<tr>
<td>Writing</td>
<td>12,917</td>
</tr>
<tr>
<td>Customer Service</td>
<td>10,319</td>
</tr>
<tr>
<td>Presentation</td>
<td>2,853</td>
</tr>
</tbody>
</table>

### Business Environment

<table>
<thead>
<tr>
<th>Skill</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational Skills</td>
<td>11,112</td>
</tr>
<tr>
<td>Leadership</td>
<td>5,883</td>
</tr>
<tr>
<td>Change Management</td>
<td>1,352</td>
</tr>
<tr>
<td>Time Management</td>
<td>1,342</td>
</tr>
</tbody>
</table>

### Project and Process Management

<table>
<thead>
<tr>
<th>Skill</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Management</td>
<td>4,166</td>
</tr>
<tr>
<td>Quality Assurance</td>
<td>1,928</td>
</tr>
<tr>
<td>Project Planning</td>
<td>906</td>
</tr>
<tr>
<td>Microsoft Project</td>
<td>470</td>
</tr>
</tbody>
</table>

### Problem Solving

<table>
<thead>
<tr>
<th>Skill</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Problem Solving</td>
<td>4,548</td>
</tr>
<tr>
<td>Analytical Skills</td>
<td>1,410</td>
</tr>
<tr>
<td>Critical Thinking</td>
<td>1,096</td>
</tr>
<tr>
<td>Needs Assessment</td>
<td>151</td>
</tr>
</tbody>
</table>

Source: Burning Glass Labor/Insight, Education Advisory Board interviews and analysis.
## Finding the Right Home for Professional Masters

### Benefits to Housing Professional Masters Programs in CPE Units

<table>
<thead>
<tr>
<th>Lack of Interest by Traditional Academic Departments</th>
<th>Even when faculty have the interest and expertise to teach in an applied, interdisciplinary program, they come from different fields, without any one department likely to have the critical mass of interested faculty necessary to be the program’s natural home</th>
</tr>
</thead>
<tbody>
<tr>
<td>Different Competencies Required to Launch and Administer Professional Masters Degrees</td>
<td>Professional masters typical require different competencies—unfamiliar to many academic departments but typically strong within CPE—such as recruiting and supporting PT, non-traditional students, partnering with industry, aligning programs with workforce needs, working with practitioner faculty</td>
</tr>
<tr>
<td>Need to Conserve Tenured Faculty Time for Core Mission Activities</td>
<td>When applied degrees are housed in traditional academic departments, valuable faculty time and departmental resources are diverted from research, teaching, and service activities.</td>
</tr>
</tbody>
</table>
A Spectrum of CPE Organizational Models

- Faculty Led
  - College-Based CPE Unit
  - University CPE Shared Services
  - National Signature Program Joint Venture
- Market Driven
  - Independent Professional Studies College
  - For-Profit CPE Subsidiary
## Models-in-Brief

<table>
<thead>
<tr>
<th>Model Type</th>
<th>Description</th>
<th>University</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>College-Based CPE Unit</strong></td>
<td>• CPE marketing and administrative support owned by and reporting to dean</td>
<td>Johns Hopkins University</td>
</tr>
<tr>
<td></td>
<td>• Surpluses accrue directly to sponsor college</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Academically and administratively decentralized</td>
<td></td>
</tr>
<tr>
<td><strong>University CPE Shared Services</strong></td>
<td>• Central service unit assumes operational responsibilities (marketing, course development, student services) and financial risk of new CPE program launch</td>
<td>Western Kentucky University</td>
</tr>
<tr>
<td></td>
<td>• Faculty initiate launch (credit and non-credit), design content and teach</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Academically decentralized, administratively centralized</td>
<td></td>
</tr>
<tr>
<td><strong>Independent Professional Studies College</strong></td>
<td>• CPE enjoys full privileges of a college, able to launch own programs</td>
<td>Northeastern University</td>
</tr>
<tr>
<td></td>
<td>• Can hire full-time, non-tenure-track faculty and adjuncts as needed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Academically and administratively centralized</td>
<td></td>
</tr>
<tr>
<td><strong>For-Profit CPE Subsidiary</strong></td>
<td>• Wholly owned for-profit subsidiary specializing in certificates and contract education</td>
<td>eCornell</td>
</tr>
<tr>
<td></td>
<td>• CEO reports to separate board of outside experts and university deans</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Academically and administratively centralized</td>
<td></td>
</tr>
<tr>
<td><strong>National Signature Program Joint Venture</strong></td>
<td>• For-profit JV partner handles operational responsibilities (marketing, course development, student services) and financial risk for large-scale online professional degree launch</td>
<td>2U/ University of Southern California</td>
</tr>
<tr>
<td></td>
<td>• University faculty design courses, hire instructors, set admissions and assessment policies</td>
<td></td>
</tr>
</tbody>
</table>
Recipe for a Failed Program Launch
Faculty Are Curricular Experts, Not Program Design Experts

Underestimate Costs
- Ignore library and IT costs
- Exclude support staff costs
- Ignore annual salary and benefits cost increases
- Use inaccurate discount rates
- Fail to understand the importance of the timing of expenses

Ignore Capacity Constraints
- Fail to factor in new program’s impact on existing programs, esp. general education courses
- Unaware of capacity step functions—when a new section will be necessary

Overestimate Demand
- Lack experience in estimating program demand
- Estimate using headcounts, not student credit hours
- Fail to differentiate the needs of full-time vs. part-time students
- Ignore impact of retention rates
Building a Business Plan
Factoring in All Determinants of Profitability

Designated Inputs Provided by Content Experts

Automated Cost/Income Calculator

Objective Determination of Financial Viability

Enrollment Manager

Faculty Member

Librarian & IT Director

Enrollment Projections

Curriculum

Other Related Costs

Revenue
- Full-Time CH
- Part-Time CH
- Tuition and fees
- Discount rate
- Tuition increases
- Retention rate

Instructional Costs
- Number of Credits
- Cost per CH
  - Instructor Type
  - Department
  - Capacity Breakpoints

Other Costs
- Timing of Expenses
  - Program director
  - Software costs
  - Library resources

Contribution Margin

Source: Education Advisory Board interviews and analysis.
Getting to Yes

Helping Faculty Design More Viable Programs

Program Contribution Margin

Break-even

Original Proposal

Reduce the number of program credits

Add software costs

Delay hiring of Program Director

Shift balance between FT and PT students

Approved Program

Source: Education Advisory Board interviews and analysis.
Getting New Programs Off the Ground

Reducing the Risk of Roadblocks

Staged Program Launch

Key Ingredients:

• Leverage existing resources as much as possible
• Test demand at each stage before further investment
• Change program features in response to student/employer suggestions
• Stop program development before major investments if problems appear
A Way Out?
Diversifying Enrollment and Revenue

Net Tuition Revenue

Running To Stay in Place

Sustainable Frontiers
- International Undergraduates
- Community College Transfers
- Adult Degree Completers
- Professional Master’s

Critical Requirements
- New Program Designs
- New Student Support Services
- New Marketing Approaches
- New Online Infrastructure

Ruinous Competition

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