# Master of Science Applied Data Science

New Program Proposal



#### Data Science

- Is "as much art as science" (Kolakowski, N. 2/13/20)
- Demands a mix of skills and experience
- Requires graduate level education
- Collects data, organizes & analyzes data, and helps industries use data for growth and decision-making
- Relies on interdisciplinary knowledge



### **Employment for Data Scientists**

- 7% growth in job postings between 2018-2019 (Kolakowski, N. 2/13/20)
- 11.5 million Data Science jobs predicted by 2026 (U.S. Bureau of Labor Statistics)
- Average time to fill data science positions
  - Nationally 46 days
  - Regionally 365+ days (Joyner, J., Chick-Fil-A)
- \$95,000-\$102,000 average salary



# Industries that Utilize Data Scientists

- Retail
- Medicine
- Communication, media, entertainment
- Transportation
- Construction

- Education
- Manufacturing
- National Resource Management
- Government
- Energy & Utilities

### Program Highlights

- Interdisciplinary
  - math, statistics, computer science form core
  - electives drawn from other disciplines including geosciences, public health, economics, psychology, anthropology, sports science, etc.
  - uses courses in current inventory
- 36-39 hours with thesis & non-thesis options

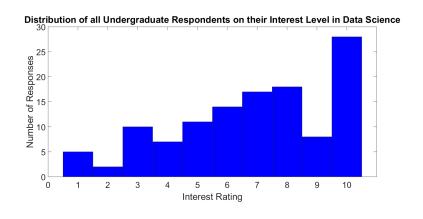
#### Appeal to Working Students

- On ground and online options
- Full-time or part-time

# MS Applied Data Science Distinctive Features

- Domain-specific courses (that is, specialized computer languages leveraged for different purposes)
- Industrial-based projects with industry partners (aka "internship")
- Deliberate balance of theory and application

# Key Results of Feasibility Study

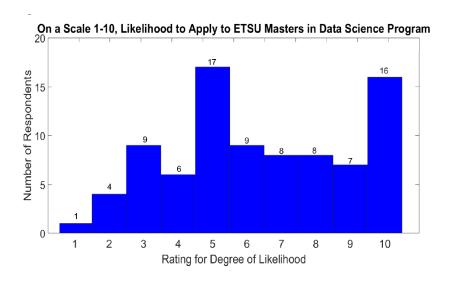


85 ETSU undergraduates expressed strong interest in the program.

N=121 ETSU undergraduates in relevant majors



## Key Results of Feasibility Study



48/85 current UG students would likely to apply

N=85 UG who expressed interest



# Key Findings EAB

#### **Graduate Portfolio Diagnostic** Assessment of Labor Market Demand and Competitive Opportunity, Regional Data Strong Labor Market, Strong Labor Market, Lower Competitive Computer and Information Strong Competitive Opportunity Sciences Business Administration Speech-Language 4.5 Allied Health 0 4.0 Psychology Accountancy 0 Average Labor Market Demand Score 0 3.5 Mathematical Sciences Counseling 3.0 Digital Marketing 0 0 Brand and Media Strategy 00 Criminal Justice and Public Health Ed. Leadership Secondary Ed Criminology Geosciences Elementary Education Early Childhood Education 0 Logistics and Supply Chain Teacher Education Management 00 Orthotics and Prosthetics Sport Management Special Education Chemistry Sport Science and Coach School Librarianship Education 0 Communication & 0 Clinical Nutrition Storytelling Studies 1.0 Hospitality Management Studio Art 0.5 Reading Education Weaker Labor Market, Weaker Labor Market, Lower Competitive Strong Competitive Opportunity Opportunity 1.0 2.0 4.5 5.0

Average Competitive Opportunity Score \*

#### Enrollment and Revenue Projections

Academic Year	2021-2022	2022-2023	2023-2024	2023-2024	2024-2025
Projected number of new students	12	16	20	24	24
Projected cumulative number of students	12	28	36	44	48
Projected Number of Graduates*	0	9	12	16	19
Academic Year	2021-2022	2022-2023	2023-2024	2023-2024	2024-2025
Tuition	\$138,228	\$316,772	\$407,004	\$497,236	\$541,392
Expenditures	\$153,557	\$215,314	\$222,033	\$220,834	\$223,719
NET	(\$15,329)	\$101, 458	\$184,971	\$276,402	\$317,673

All students are tuition paying except 6 graduate assistants (total by year 2).

Expenditures include 1 new tenure-track position in Department of Mathematics and Statistics, Program Director stipend, operating expenses, travel, 6 Graduate Assistantships.



<sup>\*</sup>Graduation rate assumes full-time students will complete in 2 years; 25% of students will be part-time and will take 4 years to graduate. We assume an attrition of 2 students each year.

#### Supports State's and ETSU's Goals

#### Tennessee Master Plan

- increase enrollment in high-needs fields
- increase computer science/data analytics offerings
- execute partnerships between higher education and industry

#### **ETSU**

- improve the quality of life in our region and beyond
- strategic enrollment growth

