INTRODUCTION

Welcome!

Shannon Beasley
WHAT WE’LL COVER

- Predictive analytics and its application in higher education
- Wichita State University case study
- Q&A

Shannon Beasley
INTRODUCTION

Mike Tagtow
PREDICTIVE ANALYTICS WORKSHOP

- EKS&H
  - IBM Premier Business Partner
  - 30+ Higher Ed implementations of IBM Business Analytics
HIGHER EDUCATION WORKSHOP SERIES

- Predictive Analytics in Higher Education – September 23
- Budgeting and Planning in Higher Education – October 23
- Business Analytics in Higher Education
- Data Integration and Data Cleansing in Higher Education
- Demystifying Banner
OUR SPEAKERS

Dr. David Wright

John Murphy
WHAT IS PREDICTIVE ANALYTICS?

“Predictive Analytics helps connect data to effective action by drawing reliable conclusions about current conditions and future events.”

Gareth Herschel, Research Director, Gartner Group

*Predictive analytics:* Enables businesses to use predictive models to exploit patterns found in historical data to identify potential risks and opportunities before they occur.
PREDICTIVE ANALYTICS APPLICATIONS IN HIGHER EDUCATION

- Recruiting
- Retention
- Budgeting and Planning
- Advancement
PREDICTIVE ANALYTICS APPLICATIONS IN HIGHER EDUCATION

Retention

Advancement

Recruiting
- Attract high performing students
- Optimize recruiting spend
- Optimize financial aid spend

Budgeting and Planning
PREDICTIVE ANALYTICS APPLICATIONS IN HIGHER EDUCATION

**Retention**
- Identify at-risk students
- Reduce transfer and attrition rates

**Recruiting**
- Attract high performing students
- Optimize recruiting spend
- Optimize financial aid spend

**Advancement**

**Budgeting and Planning**
PREDICTIVE ANALYTICS APPLICATIONS IN HIGHER EDUCATION

Retention
- Identify at-risk students
- Reduce transfer and attrition rates

Advancement
- Identify likely donors
- Understand likely donation amounts
- Preferred contact channels
- Identify high value donors
- Affinity to the university

Recruiting
- Attract high performing students
- Optimize recruiting spend
- Optimize financial aid spend

Budgeting and Planning
PREDICTIVE ANALYTICS APPLICATIONS IN HIGHER EDUCATION

**Retention**
- Identify at-risk students
- Reduce transfer and attrition rates

**Recruiting**
- Attract high performing students
- Optimize recruiting spend
- Optimize financial aid spend

**Budgeting and Planning**
- Forecasting enrollment
- Forecasting demand by major and course

**Advancement**
- Identify likely donors
- Understand likely donation amounts
- Preferred contact channels
- Identify high value donors
- Affinity to the university
RECRUITING: TARGETING RECRUITMENT FOR GREATER YIELDS

- **Individual-level approach**
  - Identifying high yield recruits
  - Probability estimation models

- **Structural-level approach**
  - Identifying high yield institutions and geographic areas
  - Classification/segmentation propensity models
RECRUITING: INDIVIDUAL LEVEL – MODELING AND SCORING

- **Target recruit**: in-state graduating high school seniors

- **Model predictors**
  - Sex-type, under-represented *minority*, requested college division major or whether they are an *undecided major*, primary contact source (e.g., high school visit, campus fair) and their geographic location

- **Scoring metric RTAP** “recruit-to-applicant probability”
  - Probability estimate of moving from a prospect to an applicant
  - Score ranges from 0% to 100%

- Other scoring: **ATAP** ‘applicant-to-admit probability’ and **ATEP** ‘admit-to-enroll probability’
### RECRUITING: RECRUIT-TO-APPLICANT-PROBABILITY SCORING

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RECRUITING: COMPARISON OF MODELING PERFORMANCE

Predicting Student Recruit-to-Applicant Probability (RTAP scores)

Area Under the Curve

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Overall Model Quality

- SPSS_RTAP: 0.93
- Rapid Insights: 0.81
- Noel Levitz: 0.70
RECRUITING: STRUCTURAL LEVEL – RFM ANALYSIS

- Institutional/geographic focus ranked on yield
- Entity RFM analysis
- Scoring metric from 11100 (lowest) to 99999 (highest)

Traditional approach

WSU approach
### RECRUITING: INDIVIDUAL AND STRUCTURAL MODELING

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RETENTION: IDENTIFYING AT RISK STUDENTS - MODELING AND SCORING

- Incoming first year students at risk of academic failure
  - Student’s academic ability (INC score)
  - Applicant probability to be on academic probation first year of enrollment (APAP score)
  - Remedial education need

- In process students at risk of retention
  - Basic skills completion status
  - High D/F grade courses registration
  - Current Academic status (e.g., gpa, probation)
  - Academic history status (e.g., <gpa,<hrs,<terms, probation history)
  - Financials
# RETENTION: IDENTIFYING AT RISK STUDENTS - MODELING AND SCORING

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**Academics:**

- **INC Score:** 21
- **ACT Score:** 22
- **HS GPA:** 3.11
- **HS_Pctle:** 52
- **WSU GPA:** 1.58
- **WSU GPA Hrs:** 25

**High D/F Course:**

- **Course 1:** BIOL210 General Biology I
- **Course 2:** ECON201 Macro-Economics

**Basic Skills Completed:**

- Bskl Engl 1: Y
- Bskl Engl 2: Y
- Bskl Math: N

**At Risk Indicators:**

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At Risk Indicators:

- High D/F

- Course:
  - BIS 1000 At Risk Students

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- At Risk Indicators

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BUDGETING AND PLANNING: FORECASTING FALL ENROLLMENT
BUDGET AND PLANNING: FORECASTING CREDIT HOUR REVENUE POTENTIAL

**Fiscal Year Student Credit Hours 2018 Forecast***

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* *Forecast based on an Exponential Smoothing Winters Multiplicative model using gross student credit hours from pre-census day registration periods.*
REAL BENEFITS OF PREDICTIVE ANALYTICS DELIVERED AT WICHITA STATE UNIVERSITY

Retention

- Increased freshmen retention rate from 70 to 74%
- Enabled preemptive advising
- Enabled segmentation of at-risk students

Recruiting

- 27% increase in admission in the first two years
- Saved $65,000 in the first year by bringing predictive analytics in-house
- Reduced cost of recruitment activities

Budgeting and Planning

- Can forecast revenue for better planning of resources
- Able to take preemptive action in real-time to adjust future revenue potential
QUESTIONS?

Please reach out to Mike Tagtow to schedule a demonstration.

mtagtow@eksh.com
(303) 579-2016
TAKEAWAYS FROM TODAY’S SESSION

Mike Tagtow
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TAKEAWAYS FROM TODAY’S SESSION

- Significant benefits captured from the use of predictive analytics in recruitment, retention, budgeting & planning

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Higher Ed Workshop Series

- Predictive Analytics in Higher Education ★
- **Budgeting and Planning in Higher Education** – October 23
- Business Analytics in Higher Education
- Data Integration and Data Cleansing in Higher Education
- Demystifying Banner

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- Next step
  - Higher education solution demonstration
Thanks for attending!

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