Student Success: Our Common Thread

Michigan Association for Institutional Research

31st Annual Conference
November 1 – 3, 2017
Ann Arbor, Michigan

November 2017

MI/AIR Colleagues,

It is with great excitement that the 2017 Steering Committee welcomes you to the 31st Annual Conference of the Michigan Association for Institutional Research (MI/AIR)! This is an event we "circle" on our calendars and are excited for us all to be back together again.

We hope this year's conference will serve as an opportunity to learn from your colleagues, catch up with old friends, network to meet new MI/AIR members, and provide you with ideas and tools that will help inform your future projects.

The conference theme for this year is *Student Success: Our Common Thread.* One of the most important roles of higher education is to see our students succeed. Success can be measured in multiple ways; what student success means for one campus may differ greatly from the next. Regardless of our campus' definition of success, our work helps to contribute indirectly (and directly) to the success of our students. As you review the program, you will find a wide array of presentation topics. Each presentation can be linked to contributing to helping students succeed, it's a commonality we share among our profession.

We thank our presenters for sharing their time and knowledge and hope you are able to learn from your colleagues. We hope the conference reinforces work you are doing, provides new ways of thinking, and sparks new interests for future projects and initiatives on your campus.

We are so glad you could join us for the 31st Annual Conference! Whether you are attending for the first time or you are a seasoned attendee, we hope you enjoy the conference and look forward to joining us again next year!

Sincerely,

Dan Merian
2016-17 MI/AIR Steering Committee Chair

Schedule at a Glance

Room and Event Locations

Session Locations

Conservatory	Westminster II/III	Westminster I

Other

Lobby	Grande Ballroom I	Library

Wednesday, November 1, 2017

12:00 PM – 1:00 PM	Registration
1:00 PM – 5:00 PM	Pre-Conference Workshop: Introduction to R
5:00 PM – 6:00 PM	Registration
6:00 PM	Dinner Opportunities

Thursday, November 2, 2017

	Conservatory	Westminster II/III	Westminster I
7:30 AM – 8:30 AM	Registration & Breakfast		
8:30 AM – 9:00 AM	2017 Conference Welcome		
9:15 AM – 10:00 AM	Toward Multiple Measures (Velguth)	Using Alternative Metrics (Bradburn, Nye, Prasad, Ryan, Schmitt, Showler)	… IR in the U.S. (Ning)
10:15 AM – 11:00 AM	Transfer Students (Richter, Weber)	Determinants of Success (Graessle)	Alpha Go (Ternes)
11:15 AM – 1:00 PM	Lunch and Attendee Meeting		
1:15 PM – 2:00 PM	Automated Approach (Perez-Vergara)	A Proposed Solution (Wagner)	ACT+SAT= Confusion (Condron, Ternes)
2:15 PM – 3:00 PM	Aligning Diverse Data (Johnson)	4 Year Graduation Rate (Meier, Roe, Scherr)	Enrollment Management (Glasener, Lonn)
3:15 PM – 4:00 PM	Round Table 1	Round Table 2	Round Table 3
4:15 PM – 5:00 PM	IPEDS Benchmarking (Brennan)	Maximizing Response (Hunsanger, Smith, Young)	Prediction of First-year (Chen, Ning)
5:00 PM - 5:30 PM	Break		
5:30 PM – 6:00 PM	Social (Cash Bar Available)		
6:00 PM –7:30 PM	Dinner and Activity		
8:00 PM- Midnight	Game Night		

Friday, November 3, 2017

	Conservatory	Westminster II/III	Westminster I
7:30 AM – 9:00 AM	Breakfast		
9:00 AM – 9:30 AM	Hotel Checkout		
9:30 AM – 10:15 AM	Incremental Cost (Marsh)		Measuring the Impact (Gyasi, Roe)
10:30 AM – 11:15 AM	The Role of Unmet (Ternes)	Prediction of Continuing (Chen, Ning)	Credit Momentum (Richter)

Facility Map

Pre-Conference Workshop

Introduction to R: Featuring IR Examples

John A. Gonzalez, PhD   *Noah C. Pollock, M.S.*
Director, Institutional Research   *Assistant Director of Assessment*
Rackham Graduate School   *Career Services*
University of Michigan   *Oakland University*

Location: Westminster I

The pre-conference *Introduction to R* will give attendees an opportunity to learn the basics of using R; a free and open source system for statistical analyses and graphics. The session is designed for beginners and will provide a foundational understanding of the uses of R. This hands-on workshop will give attendees the opportunity to work with R during the session.

Participants in this workshop will learn:
- R-basics including adding packages, interface selection, and basic syntax
- How to use R for data management
- How to conduct basic statistical analyses in R
- About developing graphics in R

Requirements:
- A Windows/Mac computer with R-Studio installed (please note installation instructions will be provided prior to the pre-conference and the instructors will be using Windows so there might be differences if you have a Mac)
- Basic familiarity with previous programming/scripting or a willingness to learn

Concurrent Session - One

Toward Multiple Measures for Math Placement at Mid Michigan Community College   **Conservatory**
Peter Velguth, Mid Michigan Community College

We wanted to improve math course placement through data-informed decision tools to replace Accuplacer or SAT. We made a preliminary investigation of the predictive value of high school math courses and HSGPA on student success in first math course performance. The new placement mechanism uses these and other data.

Using Alternative Metrics to Predict College Student Success: The Student Behavior and   **Westminster**
Experience Inventory Research Initiative   **II/III**
Jacob Bradburn, Dr. Christopher Nye, Joshua Prasad, Dr. Ann Marie Ryan, Dr. Neal Schmitt, Morgan Showler, Michigan State University

What individual characteristics, besides standardized test scores and high school GPA, may a university want to use to select students who will be successful in a collegiate environment? This presentation will detail the Student Behavior and Experience Inventory research initiative and its goal to develop alternative predictors of student success.

Overall Structure, Current Foci, and Future Directions of IR in the U.S.   **Westminster I**
Bin Ning, Eastern Michigan University

The presentation provides an overview of IR functions, primary areas of current responsibilities, and future trends and challenges the IR world is facing. The presentation uses both a national perspective to look at IR profession as well as EMU's IR office as an example to demonstrate several important business intelligence tools the office has developed in recent years.

Concurrent Session - Two

Transfer Students: An MSU Success Story   **Conservatory**
Susan M. Richter, Irene Weber, Michigan State University

Each year a fifth (20.8 percent) of MSU's entering class are transfer students, of which 63 percent transfer from 2-year institutions. This presentation will explore key metrics of student success as it pertains to transfer students. We pay particular attention to outcomes of students that transferred from Michigan two-year institutions.

Determinants of Success at Graduation   **Westminster**
Charles A. Graessle, Olivet College   **II/III**

Employment and graduate study are important outcomes and have been the focus of our recent research. Methods and analyses are briefly described that identify causes in academics, engagement, outcomes assessments, and other college processes. The presentation ends with implications for assessment for accreditation (which we just finished), publicity, and improving college processes generally.

Alpha Go and Higher Education   **Westminster**
Reuben Ternes, Oakland University   **I**

Google recently announced a machine learning algorithm that has now beaten the world's best Go player, a game that includes more possible board states than there are atoms in the universe. This technical talk explores this algorithm and broadly discusses the future of machine learning in higher education.

Concurrent Session - Three

An Automated Approach to State and Federal Report Preparation Using Sequel   **Conservatory**
Kelly Perez-Vergara, Oakland Community College

Historically, programs like MS Excel or IBM SPSS, which offer some automation of repeated procedures, were used to manipulate data extracted from Student Information Systems. However, these processes are often manual and leave significant room for user error. Using a sequel server and stored procedures to freeze data and manipulate it, our department reduced reporting time while increasing data quality. We will demonstrate our table structure, queries used to generate various external reports, and validation techniques.

A Proposed Solution for Tracking Academic Program Success Rates   **Westminster II/III**
Nicholas Wagner, Saginaw Valley State University

Reporting related to student success rates have specifically focused on retention and graduation rates based on entering student level cohorts. Limitations occur when trying to track these same rates based on college/major. This paper/presentation provides an example of how to track first-to-second year retention by academic program in a meaningful way.

ACT+SAT=Confusion   **Westminster I**
Susanne Condron, Reuben Ternes, Oakland University

We explore the impact Michigan's shift from ACT to SAT testing on OU's 2017 freshman student profile, admissions and scholarship offers, and math and writing placement trends. We also consider issues of score equivalence and testing sequence using data on dual ACT + SAT test takers.

Concurrent Session - Four

Aligning Diverse Data Files Using Python   **Conservatory**
Brian Johnson, Jackson College

Institutional researchers often face many data files filled with similar content that do not align precisely. Combining such files for research and reporting purposes can then become cumbersome and time consuming. Using modest concepts in Python, an open-source programming language, Jackson College has been able to quickly update and fix a decade of historical student data files to make them align with the College's current student data file structures.

Increase in 4 Year Graduation Rate - Student vs. University Factors   **Westminster**
Mary Meier, Robert Roe, Amanda Scherr, Central Michigan University   **II/III**

Based on the entering profile (according to the HERI model), CMU's 4-year graduation rate has continually been lower than expected. Recently however, there was a 7% increase. Here, using a variety of statistical techniques, we attempt to determine the impact of student factors (number of credits from high school, choice of major) vs university factors (better advising, admission criteria).

An Enrollment Management Approach to Investigating Low-Income   **Westminster I**
Students' Transition to Higher Education
Kristen Glasener, Steven Lonn, University of Michigan

This presentation will detail the methodology of a mixed method longitudinal study of low-income undergraduate students' perceptions of factors related to student success. Interviews, focus groups, surveys, and administrative data are combined to demonstrate how this nuanced approach can reveal a multi-layered view of new students' experiences and perceptions.

Thursday, November 2   4:15 pm – 5:00 pm

IPEDS Benchmarking Tips and Tricks   **Conservatory**
Eileen Brennan, Henry Ford College

IPEDS Data Collections and institutional characteristics definitions have changed in the past few years. This presentation will review using some new definitions and searches to get benchmarking data that best suits your needs.

Maximizing Response: Practical Lessons from Campus Climate Surveys   **Westminster II/III**
Jillian Hunsanger, Julie Smith, Robert Young, Multi-Institutional (University of Michigan-Ann Arbor, UM-Dearborn, New York University, University of New Mexico)

Methodological techniques that help Campus Climate studies achieve high response rates will be shared. Specifically: mobile optimization; assistive device accessibility optimization; interviewer non-response prompts; respondent e-mail communications. Topics will be introduced with examples of how each technique was employed in a campus climate study and its impact on response rates.

Prediction of First-Year GPA by Using Advanced Machine-Learning   **Westminster I**
Algorithms
Meng Chen, Bin Ning, Eastern Michigan University

With the development of computational power and "Big Data" available, institutions have more and more need to make accurate data-driven decisions.

Machine learning is algorithms that can learn from data without relying on rules-based programing. It is a sub-field of computer science and artificial intelligence. Like traditional statistics, both of them learning from data. However, machine learning requires no prior assumptions about the underlying relationships between the variables. In this study, we predicted first-year college GPA by using various machine learning algorithms including artificial neural network. Factors including were: high school GPA, ACT composite score, gender, ethnicity, residency, major, college, first semester GPA, honor students' indicator, on-campus residents' indicator, low-income indicator, first-generation indicator and full-part-time faculty indicator. This study gives an example how IR can take advantage of new computational power and richer data. Results of this study also can be used to predict retention, probation and improve students' success.

Friday, November 3   9:30 am – 10:15 am

An Incremental Cost Analysis Approach to Class Cancellation Decisions   **Conservatory**
Robert Marsh, North Central Michigan College

A spreadsheet-based method was developed to combine all incremental tuition revenue—taking into account various residences and discounts—and the incremental cost of instruction for all sections offered to help determine the financial viability of borderline sections during the class cancellation decision process. The breakeven or "tipping" point was calculated and presented graphically as a tool for decision makers.

Measuring the Impact of Study Abroad Programs on Student   **Westminster I**
Performance: Propensity Score vs Case Control Matching
Emma Gyasi, Robert Roe, Central Michigan University

To accurately assess the impact of study abroad (SA) programs on student performance, it is necessary to account for differences in the types of students who SA and those who do not (e.g. income, entry credentials, ethnicity, etc.). Here we address these issues by choosing an appropriate control group using the case control matching technique.

Concurrent Session - Seven

The Role of Unmet Financial Need in Retention   **Conservatory**

Reuben Ternes, Oakland University

Why do financially needy students retain at lower rates? If we meet the financial need of all of our students, what would that do to retention rates? We use simple regression techniques to estimate the impact that unmet financial need has on student retention rate.

Prediction of Continuing Graduate Enrollment from Undergraduate   **Westminster**
Graduates by Using Adaptive Boosting   **II/III**

Meng Chen, Bin Ning, Eastern Michigan University

Obtaining an undergraduate degree has become a priority for the majority of high school graduates. Nevertheless, pursuing a graduate degree after undergraduate study can be a much looser and open decision for many bachelor graduates. With the nation's economy getting back on the right track since 2009, many universities have seen a decline of graduate enrollments. Matriculating more graduate students has become an important priority for many of us, and the research on how to encourage and recruit our own institutional graduates into graduate programs becomes more critical. Eastern Michigan University (EMU) enrolls around 18,000 undergraduate students and 4,000 graduate students each fall. Historically every year, around 20% of the undergraduate students who graduated from EMU will continue their graduate education at EMU. In the past 5 years, EMU's graduate enrollment dropped by more than a thousand students and the percentage of continuing enrollment from EMU's undergraduate into graduate programs also reduced from 20% to 14%.
In this study, factors that may affect undergraduate graduates who will continue graduate study at the same institution have been explored by using machine learning method—Adaptive Boosting. Among of them, employment opportunity in same institution, college, major, department and graduation indicator have significant roles in continuation of graduate study.

Credit Momentum: Go Green Go 15   **Westminster I**

Susan M. Richter, Michigan State University

MSU launched Go Green Go 15 to encourage students to take 15 or more credits each semester with the goal of attempting 30 before a student's second year. We explore why attempting 30 credits is an indicator of student success and the initiatives aimed at MSU staff to promote 30 credits.

Lunch Meeting Agenda

Annual Association Meeting
Thursday, November 2, 2017
12:00 pm – 1:00 pm

2016 – 17 Steering Committee Members

Daniel Merian, Chair
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Amanda Scherr, Chair Elect
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Thank you for attending our Conference.

Have a Safe Trip Home!

MARK YOUR CALENDARS!

2018 MI/AIR Fall Conference

Early November 2018

Bay City/Midland, Michigan

We're looking for a theme!

Do you know a dynamic keynote speaker?
What should be our focus next year?
What are your burning issues?
What do you want to learn?

**The Steering Committee wants to provide you with
a relevant, worthwhile, and fun conference.
Let us know how we can best do that!**

Contact any Steering Committee Member with your ideas.