Inside IR

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MCC's Official Definition of STEM

The acronym STEM refers to Science, Technology, Engineering, and Math.

The federal government has stated that "a world-class STEM workforce is essential to virtually every goal we have as a nation – whether it's broadly shared economic prosperity, international competitiveness, a strong national defense, a clean energy future, and longer, healthier, lives for all Americans. If we want the future to be made in America, we need to redouble our efforts to strengthen and expand our STEM workforce."

In 2012, we created a precise definition of STEM at MCC in order to measure the enrollment and graduation rates of STEM students.

Using definitions from the National Science Foundation, the Department of Homeland Security, and MCC's history of studies and grants that defined academic programs ad hoc, the IR Office drafted a definition of STEM. After a few iterations, the definetion was approved by the College. It is now used in measuring Direction 2, Goal 3 of the Strategic Plan.

As shown in the Glossary on the left-hand panel of the IR home page, "MCC categorizes academic programs as being composed of two categories: 'Applied STEM' and 'Transfer STEM.'" Applied STEM majors are those that lead to A.A.S. degrees or certificates in technologies or engineeering technologies programs. Transfer STEM majors are those that lead

to an A.S. degree.

The majors that are categorized as STEM at MCC are shown at: http://www.monroecc.edu/depts/research/documents/STEMDefinitionUpdate-4August292013.pdf

It is important that all faculty and staff use the official, approved MCC definition of STEM. Please use the definition and majors noted above when considering STEM-related studies, grants, data, etc.

New Learning Centers Referral Link

The Learning Center Referral Form link has moved. It is now located in the Faculty Survey Menu.

To access the referral form, go to Banner Self-Service, select "Faculty Services," then select "Faculty Survey Menu."

MCC's Learning Centers give students access to computers, printers, A/V equipment, and tutoring. Faculty members are required to refer students to the Learning Centers at the beginning of each semester, but can also do so

closer to final exams.

These referrals are critical for funding that MCC receives from the State.

If you have any questions, please contact Amy Wright in the IR Office.

Enrollment Models: Where's the Crystal Ball?

In a previous [issue of Inside IR](#), we noted that a new enrollment model was being added to IR's enrollment projection tool box: the relationship between Monroe County's December unemployment rate and the projected size of County high school graduating classes. We also mentioned that this was one of five models used for enrollment planning. In the current issue of *Inside IR*, we describe the other four models.

1. **Age Yield Model** In this model, we analyze the trends of students age 17 through 65, and produce a yield model by age group based on MCC's fall census. Age group projections from the U.S. Census Bureau and the Cornell Program on Applied Demographics are used, and a moving average of the age yields are applied. This projects MCC's census head-

counts. We then convert the headcounts to annual FTEs.

2. **Student Type Model** In this model, we apply trend analyses to MCC's categories of students: Continuing, Returning, First-Time, Transfer, and High School. First-Time students are partitioned into two sub-groups (i.e., recent and non-recent high school graduates), then projections of recent high school graduates are utilized and an average yield applied. This model also projects MCC's fall census headcounts, but uses a moving average of credit hours to headcount to convert to annual FTEs.

3. **Double Exponential Smoothing Time Series Model** In this model, we apply the statistical technique "time series" to annual FTEs. The model used is double exponential smoothing, and produces a, mean average percent-

tage error of 3%.

4. **Simulation via Bootstrapping** In this model, we create a set of values from the above models and do 100,000 simulations. This produces a sampling distribution of average annual FTEs, and allows us to produce probability estimate of ranges for the average annual FTEs.

The five models produce five different projections for the next five years. The projections are then reviewed by the Enrollment Committee, which meets twice per year. First, it meets in December for initial estimates budget testing. Then it meets again in late March or early April to finalize new information from the models or other information/considerations that exist outside them.

Figure 1 shows the initial projections IR made in December 2014.

Figure 2 shows how starting with the knowledge of annual FTEs informs us of three-quarters of our revenues.
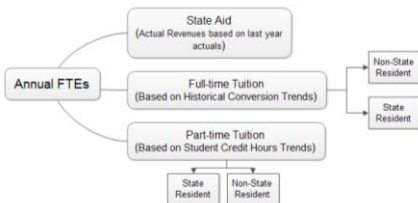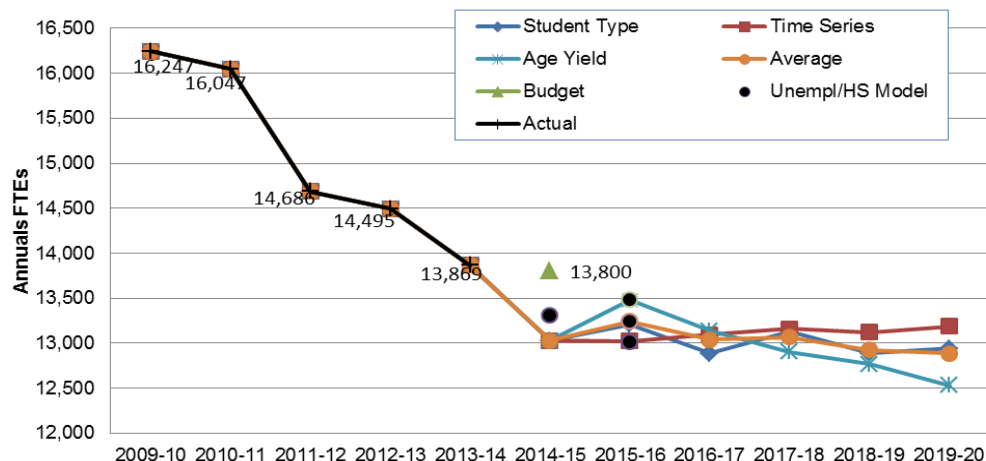
Figure 2. Revenue Sources

Figure 1. Five-Year Enrollment Models: First Iteration

Student Achievement Measure ("SAM")

In the *fall issue of Inside IR*, we described the Voluntary Framework of Accountability ("VFA") project MCC participates in. Recently, MCC took part in another project, the Student Achievement Measure ("SAM"), which is based in part on the VFA.

SAM is a summary of student outcomes, but is different than the Integrated Postsecondary Education-

al Data System ("IPEDS") reporting required by the federal government. This is due to the difference in the methodologies each mandates, shown in Table 1.

As shown in Table 2, the SAM graduation rate for the fall 2007 first-time, full-time MCC cohort was 44%, in contrast to the 23% graduation rate we reported for IPEDS. The dif-

ference in rates was due to the fact that the SAM cohort was composed not just of first-time, full-time students who started in fall 2007, but was restricted to those who had earned 12 or more credits within their first two years at MCC. In addition, the SAM rate was based on students' status six years after first enrollment while the IPEDS rate was based on three.

Table 2.. Graduation Rate of MCC's Fall 2007 Cohort

Using SAM Methodology	Using IPEDS Methodology
44% within 6 years	23% within 3 years
N=3,256	N=3,744

You can look up all of the institutions who participate in SAM at http://www.studentachievementmeasure.org/participants/. Currently, 10 of the 30 SUNY community colleges participate.

Table 1. SAM and IPEDS Methodology Comparison

Category	SAM Methodology	IPEDS Methodology
Student Cohort	Fall, first-time & transfer students seeking a degree or certificate	Fall, first-time students seeking a degree or certificate
Student Qualifications	Must have earned: • A HS diploma or equivalent • 12 or more credits at the college by the end of one's second year	Must have been admitted into an academic program at the college
Analyses re: Credit Load	Data on full-time & part-time students is disaggregated	Only full-time students' data is used
Outcome Period	6 years	3 years
Outcome Measures	Graduation from, enrollment at, or transfer out of the institution	Graduation from or transfer out of the institution

The Common Data Set

Each year, the IR Office completes a spreadsheet template called the Common Data Set ("CDS"). It was developed by the Common Data Set Initiative, a "collaborative effort among data providers in the higher education community and publishers as represented by the College Board, *Peterson's Guide*, and *U.S. News & World Report*."

The reporting of institution-

al data is standardized through the Common Data Set. Institutions must report data on enrollment, retention, graduation, tuition costs, institutional policies, and related facts such as the number of campuses a college has and whether it provides residence halls.

By completing the CDS template, IR is able to organize MCC's data in a uniform way, then share it with publications such as

Peterson's Guide, *the College Board*, and *Wintergreen Orchard House*. These publications then disseminate the data to prospective students and other colleges.

From time to time, IR may ask your office for information to complete the CDS. Please take a few minutes to do so in order to help us provide accurate, complete and current information to these publications.

If you would like a copy of the Common Data Set, email Andrew Welsh in the IR Office.

Expectations and Experiences Surveys

Every four years, during the summer, IR administers the Student Expectations Survey to students who have been accepted to MCC for the fall semester. Then, in January, we administer the Student Experiences Survey to the students who completed the first survey.

The purpose of the first survey is to find out what students expect MCC to be like, while the purpose of the second is to find out what they actually experienced. The overarching goal of the project is to identify then address differences in expectations and experiences to increase student success and retention.

This year, a total of 269 students completed both the Expectations and Experiences Surveys. The following are some of the key findings.

On the plus side, more respondents experienced than expected…

- that the student body was diverse
- that their instructors reviewed most reading assignments in class

Unfortunately, fewer respondents experienced than expected feeling stressed about doing well in class.

Many students' expectations didn't differ from their actual experiences. For example, more than three-fourths of the respondents both expected and experienced being pleased with their decision to go to college, and more than two-thirds expected and experienced classes that inspired them to think in new ways.

Additional analyses revealed that certain experiences actually predicted respondents' being

pleased with their decision to go to college. These included having the following experiences:

- looking forward to going to class
- making new friends
- perceiving that the student body was diverse.

There were also differences in survey responses based on personal characteristics. For example, a higher percentage of respondents with previous college experience (i.e., AP or Dual Credit courses in high school and/or attendance at another college before MCC) than those without it experienced feeling that the information they learned in their classes was relevant to their everyday life.

The full survey report will be posted on the IR web pages within the coming weeks.

For more information about the Institutional Research (IR) Office, you can visit our pages on the MCC website or contact an IR staff member:

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