

PROVE YOU ARE IMPROVING

ONLINE OUTCOMES ASSESSMENT TOOL

MAINE MARITIME ACADEMY

PROF. SUE LOOMIS – ASST. PROF. DAVID AVERY

OCTOBER 2014

TODAY'S PLAN

General overview and guiding principles of Outcomes Assessment (OA)

MMA's Assessment Tool – Phases and Process

Demonstration of assessment tool

Ongoing Assessment Tasks

?s



MAINE MARITIME ACADEMY MISSION

Provide a quality education primarily focused on marine related programs.

The curriculum will empower students to take on leadership roles, encourage rigorous self-discipline, promote curiosity, and provide graduates with skills and knowledge needed to succeed in the global economy

Recently ranked #1 Public College based on quality of education and cost.



MMA

Nearly 1,000 students, 85% male - Offer Associate, Bachelor and Master degrees

Majors in Engineering, Science, Transportation, International Business/Logistics

NEASC, ABET accredited, and USCG approved for unlimited licenses
95% professional placement 2 months after graduation

The 25 Best Public Colleges - Maine Maritime ranked #1

<http://time.com/money/3024386/best-public-moneys-best-colleges/>

The 25 Colleges That Add the Most Value - Maine Maritime ranked #4

<http://time.com/money/3025341/colleges-that-add-the-most-value-moneys-best-colleges/>

MMA'S INSTITUTIONAL OBJECTIVES

Upon completion of a degree, students should, at the appropriate level:

Demonstrate competency in written and spoken English.

Apply the scientific method.

Apply fundamental concepts in mathematics.

Be technologically proficient.

Develop a global perspective of the humanities and social sciences.

Gather, analyze, and interpret information.

Demonstrate competency in their major.

Explore and experience career paths in their program of study.

Demonstrate and inspire ethical behavior.

Develop skills to motivate others to achieve a common goal.

Recognize environmental consequences of individual and professional decisions.

Students attaining these objectives will have the fundamental skills to support continued curiosity and life-long learning.

BACKGROUND AND PHILOSOPHY OF ASSESSMENT

Excellent education practice requires evidence

Assessment is well accepted and widespread in higher ed

BUT we wish we didn't have to do it!

Offers an opportunity and a challenge

Affirms value of consistent review

Leads to improved learning environments and overall institutional effectiveness

Tangentially – pleases NEASC , ABET, and USCG for MMA

PROVE WE ARE IMPROVING

Not an easy task

We assess more than we think, but less than we need

Worth the work to garner the results

Nothing shows effectiveness like data

Results inform decisions, provide leverage,
and pave the way for change.



GUIDING PRINCIPLES OF ASSESSMENT

Measures what students have learned based on strategic plan, institutional objectives and program and course goals

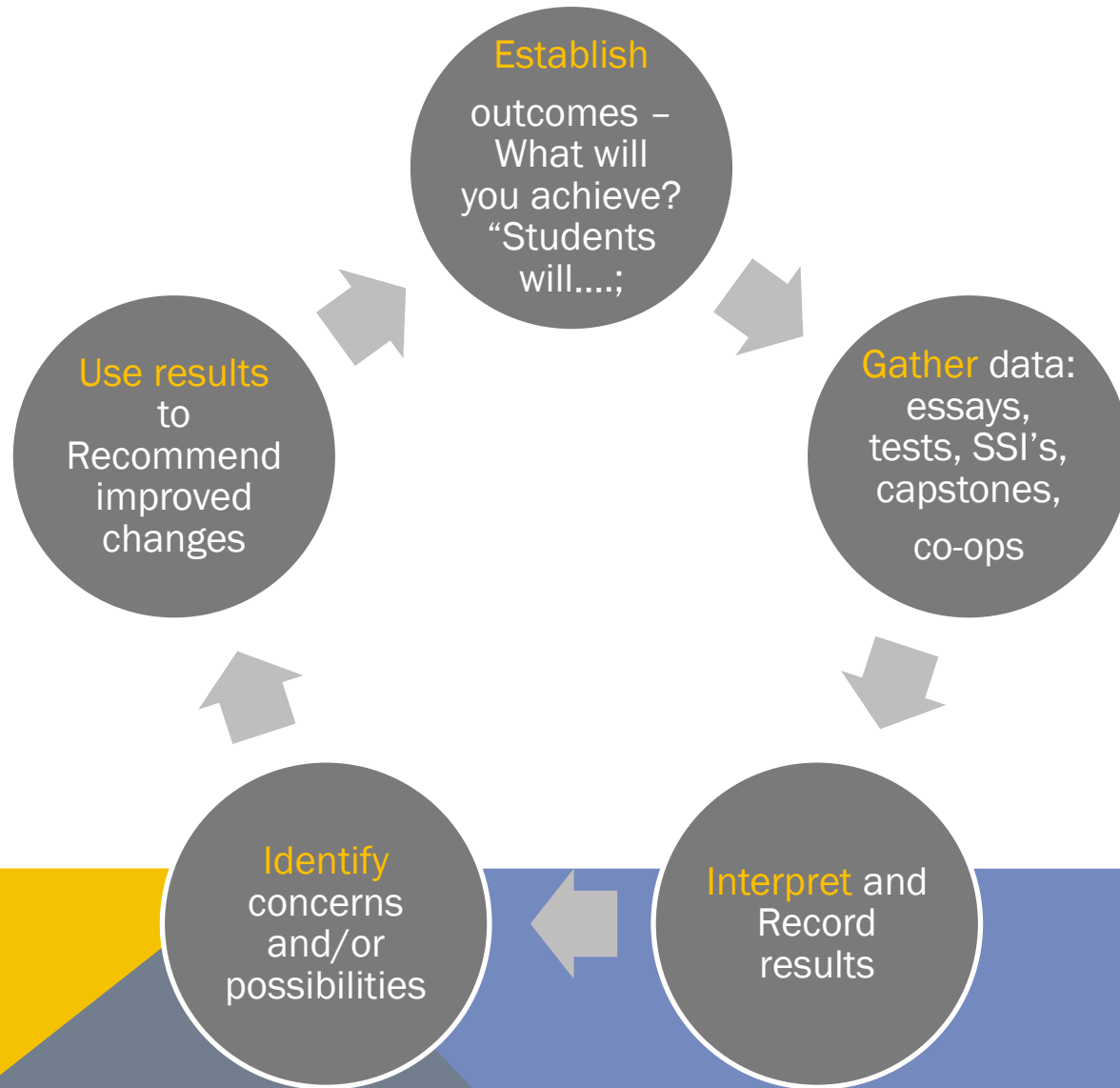
Uses results to improve programs, to enhance learning and student success

Limits serendipitous, cavalier decisions and indefensible spending, hopefully!

Leads to sustained credibility



ENDLESS ASSESSMENT CYCLE



KEY QUESTIONS FOR FACULTY AND STAFF

What are your goals?

Did you meet them?

How do you know?

What will you do with results?

What will students be able to do?

Example Goals:

Conduct and analyze a scientific experiment

Identify Wheels of Wellness

Analyze value of community service project at local school

Identify horns of an ethical dilemma

OUTCOMES ASSESSMENT TEAM (OAT)

In lieu of a director of institutional research the OAT was born –

Appointed by President and VP of Academic Affairs:

1 Chair

1 Representative from each major department/program

TASK:

Meet 12 times a year to provide:

direction, structure, and oversight of assessment process

includes academic and non-academic programs

Committed to student and program success



SUCCESSFUL ASSESSMENT NEEDS:

To be embedded in institutional culture that values reflection

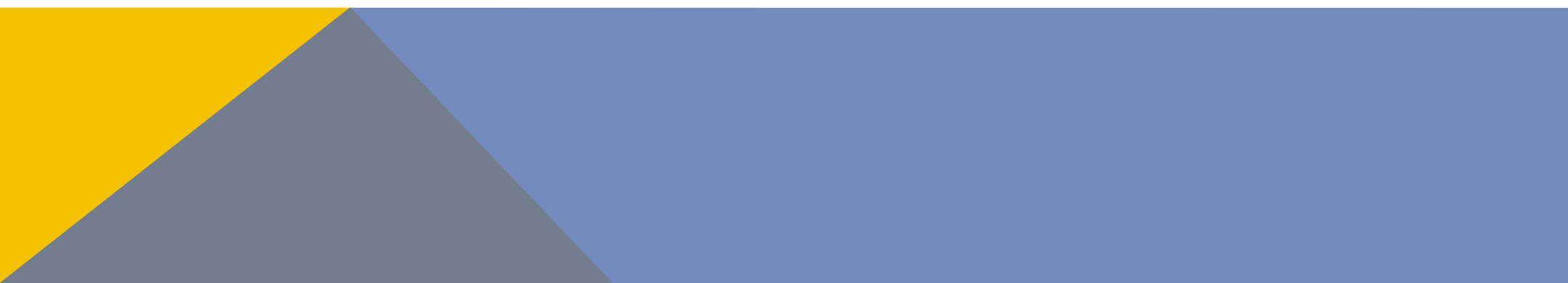
To rely on administrative support for improvement efforts across campus

To be integrated with other reporting procedures

To use results to inform decisions and shape change at all levels

To count on campus cooperation

Then – improvement is hard to avoid



THINGS TO TEND

Fully integrate academic and non-academic data into the reporting process

Track data in an action plan

Revisit results and reinitiate need for action if necessary

Submit appropriate documents into IAA – central storage


Close the Loop to gain rewards.

Commit to the Ongoing Process – managing the culture of evidence

Assess the assessment process



THE MMA PROCESS OF OUTCOMES ASSESSMENT

- Institution and departments establish goals
 - Professors establish goals for each course—aligned with those of institution and department
 - Professors establish way to measure each outcome—assignment grade, particular project grade, or answer to a particular question
 - Professors summarize the outcomes for all students in the course
 - Professors make available to all their outcomes assessments
 - The assessment is used by professor to change (or not) the course
 - Reports available to professors, departments, deans
 - Together all assessments are used to drive curriculum decisions
- 

At MMA we recently implemented an online tool to assist professors with outcomes assessment



OUTCOMES ASSESSMENT

Select Year and Term:

Select Course: Submitted

	Goal #	Goal Description	Assessment Type	Minimum Grade	Assessment Forms	Expected Achieve. Rate	Institutional Objectives	Institutional Objective Achievement Level	Departmental Objective	Departmental Objective Achievement Level	Narrative Assessment	Proposed Action
Edit Delete	1	Students will gain a conceptual understanding of the concept of the derivative	Manual Assessment	--	Select questions on final exam (#10)	80 %	3. Apply fundamental concepts in m -- -- -- --	Intermediate -- -- -- --	1. To think critically and analytically 4. To develop and apply knowledge -- -- --	Intermediate -- -- -- --	Nearly everyone answered the relevant exam questions correctly (13/14). I think this success reflects the fact that we start with the derivative and spend most of the semester on it.	Maintain in the future.
Edit Delete	2	Students will gain a conceptual understanding of the integral	Manual Assessment	--	Select questions on final exam (#5)	80 %	3. Apply fundamental concepts in m -- -- -- --	Intermediate -- -- -- --	1. To think critically and analytically 4. To develop and apply knowledge -- -- --	Intermediate -- -- -- --	Only half the class (7/14) seemed to understand the integral at the conceptual level. Only a small portion of the semester is devoted to the integral as compared to the derivative.	Devote more time to the integral and/or revise lectures to include more examples that illustrate the concept.
Edit Delete	3	Students will apply their knowledge to solving a calculus problem of appropriate complexity	Manual Assessment	--	Select problems on final exam (#9)	60 %	3. Apply fundamental concepts in m -- -- -- --	Intermediate -- -- -- --	1. To think critically and analytically 4. To develop and apply knowledge -- -- --	Intermediate -- -- -- --	Only 5/15 students could actually solve a problem involving numerical integration even though they had seen a very similar problem on a previous test.	More time on numerical integration and give students more practice with applied problems of all sorts.

Header information

- Linked to databases that allow pull-down menus
- Professors create, edit, and submit their assessments online via this tool

OUTCOMES ASSESSMENT

Detail

Select Year and Term: 2014 SPRING ▼

Select Course: MS110-F-LEC: Technical Calculus I ▼

Submitted

Next Course

Final Submission

Copy Goals

Add New Goal

Next, course goals and method of assessment

OUTCOMES ASSESSMENT

Select Year and Term: 2014 SPRING

Select Course: MS110-F-LEC: Technical Calculus I Submitted

Next Course

Final Submission

Copy Goals

Add New Goal

	Goal #	Goal Description	Assessment Type	Minimum Grade	Assessment Forms	Expected Achieve. Rate	Institutional Objectives	Institutional Objective Achievement Level	Departmental Objective	Departmental Objective Achievement Level	Narrative Assessment	Proposed Action
Edit Delete	1	Students will gain a conceptual understanding of the concept of the derivative	Manual Assessment	--	Select questions on final exam (#10)	80 %	3. Apply fundamental concepts in m	Intermediate	1. To think critically and analytically 4. To develop and apply knowledge	Intermediate	Nearly everyone answered the relevant exam questions correctly (13/14). I think this success reflects the fact that we start with the derivative and spend most of the semester on it.	Maintain in the future.
Edit Delete	2	Students will gain a conceptual understanding of the integral	Manual Assessment	--	Select questions on final exam (#5)	80 %	3. Apply fundamental concepts in m	Intermediate	1. To think critically and analytically 4. To develop and apply knowledge	Intermediate	Only half the class (7/14) seemed to understand the integral at the conceptual level. Only a small portion of the semester is devoted to the integral as compared to the derivative.	Devote more time to the integral and/or revise lectures to include more examples that illustrate the concept.
Edit Delete	3	Students will apply their knowledge to solving a calculus problem of appropriate complexity	Manual Assessment	--	Select problems on final exam (#9)	60 %	3. Apply fundamental concepts in m	Intermediate	1. To think critically and analytically 4. To develop and apply knowledge	Intermediate	Only 5/15 students could actually solve a problem involving numerical integration even though they had seen a very similar problem on a previous test.	More time on numerical integration and give students more practice with applied problems of all sorts.

Course goals

I wrote these for my Technical Calculus class last spring

3 Goals

Method of assessment

- Manual
- Grade-based

I used specific questions on the final exam to assess

	Goal #	Goal Description	Assessment Type	Minimum Grade	Assessment Forms	Expected Achieve. Rate
Edit Delete	1	Students will gain a conceptual understanding of the concept of the derivative	Manual Manual Assessment	--	Select questions on final exam (#10)	80 %
Edit Delete	2	Students will gain a conceptual understanding of the integral	Manual Manual Assessment	--	Select questions on final exam (#5)	80 %
Edit Delete	3	Students will apply their knowledge to solving a calculus problem of appropriate complexity	Manual Manual Assessment	--	Select problems on final exam (#9)	60 %

Detail

Objectives

- How do my course objectives relate to the institutional and departmental goals?

OUTCOMES ASSESSMENT

Select Year and Term: 2014 SPRING

Select Course: MS110-F-LEC: Technical Calculus I Submitted

Next Course

Final Submission

Copy Goals

Add New Goal

	Goal #	Goal Description	Assessment Type	Minimum Grade	Assessment Forms	Expected Achievement Rate	Institutional Objectives	Institutional Objective Achievement Level	Departmental Objective	Departmental Objective Achievement Level	Narrative Assessment	Proposed Action
Edit Delete	1	Students will gain a conceptual understanding of the concept of the derivative	Manual Assessment	--	Select questions on final exam (#10)	80 %	3. Apply fundamental concepts in m -- -- -- --	Intermediate -- -- -- --	1. To think critically and analytically 4. To develop and apply knowledge -- -- --	Intermediate -- -- -- --	Nearly everyone answered the relevant exam questions correctly (13/14). I think this success reflects the fact that we start with the derivative and spend most of the semester on it.	Maintain in the future.
Edit Delete	2	Students will gain a conceptual understanding of the integral	Manual Assessment	--	Select questions on final exam (#5)	80 %	3. Apply fundamental concepts in m -- -- -- --	Intermediate -- -- -- --	1. To think critically and analytically 4. To develop and apply knowledge -- -- --	Intermediate -- -- -- --	Only half the class (7/14) seemed to understand the integral at the conceptual level. Only a small portion of the semester is devoted to the integral as compared to the derivative.	Devote more time to the integral and/or revise lectures to include more examples that illustrate the concept.
Edit Delete	3	Students will apply their knowledge to solving a calculus problem of appropriate complexity	Manual Assessment	--	Select problems on final exam (#9)	60 %	3. Apply fundamental concepts in m -- -- -- --	Intermediate -- -- -- --	1. To think critically and analytically 4. To develop and apply knowledge -- -- --	Intermediate -- -- -- --	Only 5/15 students could actually solve a problem involving numerical integration even though they had seen a very similar problem on a previous test.	More time on numerical integration and give students more practice with applied problems of all sorts.

Institutional Objectives	Institutional Objective Achievement Level	Departmental Objective	Departmental Objective Achievement Level
3. Apply fundamental concepts in m	Intermediate	1. To think critically and analytically	Intermediate
--	--	4. To develop and apply knowledge	--
--	--	--	--
--	--	--	--
--	--	--	--
3. Apply fundamental concepts in m	Intermediate	1. To think critically and analytically	Intermediate
--	--	4. To develop and apply knowledge	--
--	--	--	--
--	--	--	--
--	--	--	--
3. Apply fundamental concepts in m	Intermediate	1. To think critically and analytically	Intermediate
--	--	4. To develop and apply knowledge	--
--	--	--	--
--	--	--	--
--	--	--	--

Institutional and departmental objectives to which my course goals relate and the level of achievement for these objectives in my course.

Detail

Institutional Objectives	Institutional Objective Achievement Level	Departmental Objective	Departmental Objective Achievement Level
3. Apply fundamental concepts in m	Intermediate	1. To think critically and analytically	Intermediate
--	--	4. To develop and apply knowledge	--
--	--	--	--
--	--	--	--
--	--	--	--

Institutional objectives and department objectives are in pull down menus

Institutional Objectives	Institutional Objective Achievement Level	Departmental Objective	Departmental Objective Achievement Level
3. Apply fundamental concepts in m	Beginner	1. To think critically and analytically	Beginner
4. Be technologically proficient.	Beginner	4. To develop and apply knowledge	Beginner
6. Gather, analyze, and interpret info	Beginner	6. To identify problems and to propc	Beginner
--	--	--	--
1. Demonstrate competency in written and spoken English.			
2. Apply the scientific method.			
3. Apply fundamental concepts in mathematics.			
4. Be technologically proficient.			
5. Develop a global perspective of the humanities and social sciences.			
6. Gather, analyze, and interpret information.			
7. Demonstrate competency in their major.			
8. Explore and experience career paths in their program of study.			
9. Demonstrate and inspire ethical behavior.			
10. Develop skills to motivate others to achieve a common goal.			
11. Recognize environmental consequences of individual and professional decisions.			

I also teach a course in problem solving with computers

The higher objectives for that course are shown (left)

Institutional Objectives	Institutional Objective Achievement Level	Departmental Objective	Departmental Objective Achievement Level
3. Apply fundamental concepts in m	Intermediate	1. To think critically and analytically	Intermediate
--	--	4. To develop and apply knowledge	--
--	--	--	--
--	--	--	--
--	--	--	--
3. Apply fundamental concepts in m	Intermediate	1. To think critically and analytically	Intermediate
--	--	4. To develop and apply knowledge	--
--	--	--	--
--	--	--	--
--	--	--	--
3. Apply fundamental concepts in m	Intermediate		
--	--		
--	--		
--	--		
--	--		

The departmental objectives are shown for Tech Calc (left) and for Problem Solving (below)

Departmental Objective	Departmental Objective Achievement Level	Narrative Assessment
1. To think critically and analytically	Beginner	
4. To develop and apply knowledge	Beginner	
6. To identify problems and to propose	Beginner	
--	--	

- 1. To think critically and analytically
- 2. To write and speak effectively
- 3. To understand the global and environmental context of human actions
- 4. To develop and apply knowledge of mathematical and scientific reasoning
- 5. To develop and communicate sound, informed opinions among conflicting perspectives
- 6. To identify problems and to propose solutions
- 7. To solve problems as members of a team
- 8. To appreciate and respect diversity
- 9. To reason and act ethically

At the end of the semester, I summarized the outcomes for each of my goals and proposed some action to take place before I teach the course again. These are listed under the sections entitled Narrative Assessment and Proposed Action.

OUTCOMES ASSESSMENT

Select Year and Term: 2014 SPRING

Select Course: MS110-F-LEC: Technical Calculus I Submitted

Next Course

Final Submission

Copy Goals

Add New Goal

	Goal #	Goal Description	Assessment Type	Minimum Grade	Assessment Forms	Expected Achieve. Rate	Institutional Objectives	Institutional Objective Achievement Level	Departmental Objective	Departmental Objective Achievement Level	Narrative Assessment	Proposed Action
Edit Delete	1	Students will gain a conceptual understanding of the concept of the derivative	Manual Manual Assessment	--	Select questions on final exam (#10)	80 %	3. Apply fundamental concepts in m -- -- -- --	Intermediate -- -- -- --	1. To think critically and analytically 4. To develop and apply knowledge -- -- -- --	Intermediate -- -- -- --	Nearly everyone answered the relevant exam questions correctly (13/14). I think this success reflects the fact that we start with the derivative and spend most of the semester on it.	Maintain in the future.
Edit Delete	2	Students will gain a conceptual understanding of the Integral	Manual Manual Assessment	--	Select questions on final exam (#5)	80 %	3. Apply fundamental concepts in m -- -- -- --	Intermediate -- -- -- --	1. To think critically and analytically 4. To develop and apply knowledge -- -- -- --	Intermediate -- -- -- --	Only half the class (7/14) seemed to understand the integral at the conceptual level. Only a small portion of the semester is devoted to the integral as compared to the derivative.	Devote more time to the integral and/or revise lectures to include more examples that illustrate the concept.
Edit Delete	3	Students will apply their knowledge to solving a calculus problem of appropriate complexity	Manual Manual Assessment	--	Select problems on final exam (#9)	60 %	3. Apply fundamental concepts in m -- -- -- --	Intermediate -- -- -- --	1. To think critically and analytically 4. To develop and apply knowledge -- -- -- --	Intermediate -- -- -- --	Only 5/15 students could actually solve a problem involving numerical integration even though they had seen a very similar problem on a previous test.	More time on numerical integration and give students more practice with applied problems of all sorts.

Here is where we are (brutally) honest about meeting the course goals.

Formalizes the assessment.

Serves as a promise or a reminder for next time I teach this course.

After a few iterations, we ought to be able to **Prove We Are Improving**

Detail

Narrative Assessment	Proposed Action
Nearly everyone answered the relevant exam questions correctly (13/14). I think this success reflects the fact that we start with the derivative and spend most of the semester on it.	Maintain in the future.
Only half the class (7/14) seemed to understand the integral at the conceptual level. Only a small portion of the semester is devoted to the integral as compared to the derivative.	Devote more time to the integral and/or revise lectures to include more examples that illustrate the concept.
Only 5/15 students could actually solve a problem involving numerical integration even though they had seen a very similar problem on a previous test.	More time on numerical integration and give students more practice with applied problems of all sorts.

THANKS TO THE OUTCOMES ASSESSMENT TEAM

Extraordinaire!

Prof. Joceline Boucher

Prof. David Skaves

Assoc. Prof. Jessica Muhlin

Assoc. Prof. Mark Shaughnessy

Asst. Prof. Steve Cole

Asst. Prof. David Avery

Dr. Elizabeth True – Student Services

Deidra Davis – Dean of Students

Sarah Danser- Library Services

Dynnise Littlefield – IT

Prof. Sue Loomis, Chair – Assoc .Academic Dean

EFFECTIVE EDUCATORS

Are proactive and intentionally effective

Use outcomes as a tool for change

Prof. Sue Loomis

susan.loomis@mma.edu

Asst. Prof. David Avery

david.avery@mma.edu

Maine Maritime Academy

October 2014

MAINE MARITIME ACADEMY

October 2014

