

Just Saying Yes: Reflections on Opportunity and Outcomes

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The Distinguished Service Award

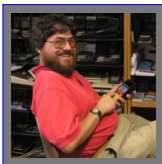
History

- **First awards:** (1975) Lyle Mehlenbacher (U Detroit), (1977) J. Sutherland Frame (MSU), (1981) Edward Nordhaus (MSU)
- **Annual award instituted in 1986.** Recent awardees:

(2007) Robert Messer (Albion) *
(2008) Steven Schlicker (GVSU) * † ‡ ◯
(2009) Richard Fleming (CMU) ‡
(2010) Ruth Favro (LTU) * † ‡ ●
(2011) Sidney Graham (CMU) * ‡
(2012) Norm Richert (Math Rev) +

(2013) Gerard Venema (Calvin) ‡
(2014) John Fink (Kzoo) * † ‡
(2015) Mark Bollman (Albion) † ●
(2017) David Redman (Delta CC) * ‡
(2018) Margret Höft (UM Dearborn) ●
(2019) Matt Boelkins (GVSU) † ‡

* MMPC; † MAA Governor/Congress Rep; ‡ Chair; ◯ HS Visiting Lec Program Dir; ● Sec/Treas; + Newsletter



Mark Bollman



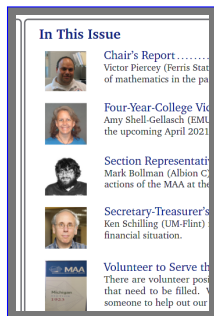
Margret Höft



Matt Boelkins

Some Observations

- The MAA
 - Is an amazingly **member driven organization**. The MAA succeeds by dint of the effort of its members.
 - Is an organization that **recognizes important things**. We have awards for **teaching** and **service**!
- There are **many ways to serve** in our profession, our institutions, and our departments.
- ... and **many ways to succeed** in these venues.
 - ... and these **can be related**.



MichMAA Newsletter

One Disclaimer, One Claim

- **Service** means many things.
 - **Department committees** and work, **student groups** and organizations, **university work**, **professional organizations**, work with **professional organizations** . . .
 - **Big jobs** (assessment/hiring committees, accreditation,
 - **rewarding jobs** (scholarship committees, advising . . . ,
 - and **less rewarding jobs** . . .

. . . not all service is unicorns and daisies.

- Common threads: **connections** with people and systems that are outside of our daily work; and similarly different **work venues and tasks**.

Department of Mathematics Committee and Service Assignments 2020-2021

(committee and assignment names, pp.1-2 of 4)

Associate Chairs (4)
Area Leaders (8)
Climate Committee
Colloquium
Computer Committee
Continuum Editorial Board
Development Committee
Diversity, Equity, and Inclusion Outreach K-12
Diversity, Equity, and Inclusion Recruiting
Education and Course Oversight Committee
Executive Committee
External Liaison
Faculty Secretary
Historian
Inquiry Based Learning (IBL) Director
IBL Committee
Introductory Program Oversight Committee
Lecturer Evaluation and Hiring Committee
Library
Long Range Planning Committee
Marshals
Mathematics Education Liaison
MCAIM Director
Michigan Mathematical Journal
MMSS Oversight Committee
NextProf
Nominations Officer
Personnel Committee

These beginnings...

... would you be interested in working on MAA Section projects related to Project NExT?



Project NExT session, c.2010

- Associate Co-Director, Associate Director, Project NExT: 1997–2012
- + connections...
 - Michigan
 - Instructional Practice Guide

Finding your niche, ver. 1,327

Intrinsic Rewards

... would you serve on the Collegiate Lecturer selection committee?

- **Committee Member**, 2019–
- + **connections**
- **Greater appreciation** of University and work.



2019-20 Collegiate Lecturers
Image fr. Univ Record

<https://record.umich.edu/articles/four-honored-as-collegiate-lecturers-for-2019-20>
photo by Paul Markley, Michigan Photography

Learning, Inclusion, . . . Mastery

. . . we should apply for one of these faculty inclusive learning community grants.

- **Co-(organizer), 2018**— *Primary organizer: Nina White*
- **+ connections**
- **Connected projects**
 - **Exam Coding** project
 - **Mastery Assessment** project
 - **2 Foundational Course Initiative** projects
 - **+ significant College funding**



U(M) Math LCIT, summer 2019

Data, Functions, and Graphs: Background

Data, Functions, and Graphs
(math 105): our course before
calculus.

- About 500 students per year.
- In class: \sim 18 students, sitting in groups, some lecture, in-class group work, high engagement with material.
- Emphasis on conceptual understanding, problem solving skills, material in context.
- Strongly uniform structure: grading, class expectations.
- Instructors are primarily graduate students, some lecturers.



Math 105 classroom

Challenges to Inclusion

- Student Challenges

- Historically: 3 high-stakes exams made up 95% of students' grades.
- Student perception that course demands are impossible, (increased) negative attitudes toward math.
- *And these are biased against and affect underrepresented students specifically.*

- Instructor Challenges

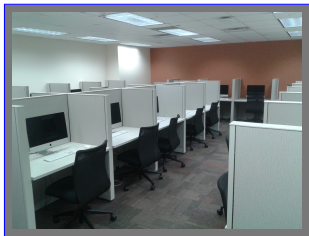
- Most instructors are at the beginning of their careers, and most are graduate students.
- We operate on a large scale: we have ~ 50 new instructors (in the Department) each fall.
- Training is substantial, but limited: time and resource constraints, *inclusive teaching is hard.*



New Instructor Training Session

Mastery Assessment

- **Old Assessment Model:**
 - **Two exams** (Uniform, evening, 90 min exams; 25%, 30% of course grade)
 - **Final** (Uniform; 40% of course grade)
 - **Web Homework** (Uniform; 5% of course grade)
 - **Uniform grading scale**
- **New Assessment Model:**
 - **Learning component**
 - **Web Homework** (5 pts)
 - **Team Homework** (5 pts)
 - **Section Classwork** (5 pts)
 - **Two exams** (Uniform, evening, 90 min exams, shorter; 15 pts each)
 - **9 Masteries, 1 Final Mastery** (45 pts, 10 pts)
 - **Guaranteed grading scale**



Mastery Assessment Proctored Lab

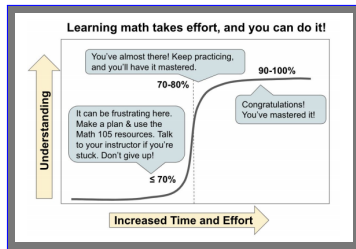
Mastery Grading

- **Mastery Assessment Scores**

- **Masteries:**
 $5/5 = 5$ pts; $4/5 = 4$ pts
- **Final Mastery:**
 $7-10/10 = 7-10$ pts

- **Mastery Grading**

Course grade	Mastery pts	Total pts
A range	≥ 51	≥ 85
B range	≥ 45	≥ 70
C range	≥ 39	≥ 55
D range	≥ 27	≥ 40



Mastery Effort Graph, Math 105 Student Guide

Mastery Assessments

- Are delivered using WeBWork
 - Current testbank: ~ 75 problems (+150 for first mastery)
- Open ~ 1 week each
 - Infinite practice.
 - 2 attempts/day for “Official,” or “Proctored” test (which counts for credit).
 - Plus reopen two masteries, per student, at the end of the semester.
- Time limits: 30 min (Masteries 1–9), or 60 min (Final mastery).



WeBWork Project Leaders and Users

*image credit: <<https://openwebworkorg.wordpress.com/>>
note: another service opportunity!*

Sample Mastery Problems

Problem 1.

Using
even

Problem 2.

If a
function

Problem 3.

Suppose
the

Problem 4.

1. Suppose that $f(t)$ is the amount

2. Write an expression involving $f(t)$

3. a. If you drive the trip 5 times

$$g(t) = \square$$

4. b. If you spill 19 liters of fuel
and used for the trip, then

$$g(t) = \square$$

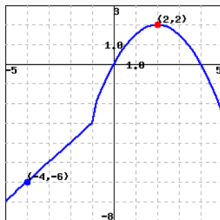
c. If you spill 19 liters of fuel
fuel efficiency by 8 percent

$$g(t) = \square$$

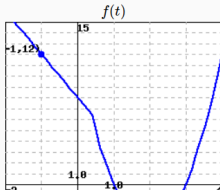
Note: In order to get credit for the

Problem 5.

A function $p(t)$ is graphed below. The points shown are $(-4, -6)$ (in blue) and $(2, 2)$ (in red). These are shown in the graph of the transformation in the same colors.

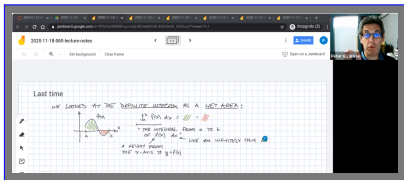


Write a formula for a transformation involving p for the function $f(t)$ in the following graph. For $f(t)$, the graphed points are $(-1, 12)$ (in blue) and $(2, -4)$ (in red).



Impact of Mastery Assessment

- Is a little unclear to date. . .
 - Initial pilot of Mastery materials: **winter 2020**.
 - Revision and continued use: **fall 2020, winter 2021**.
 - **On-line instruction**.
 - **No proctoring** for Official Mastery assessments. (Friends, phones, tests open, tools. . .)
- **Some positive news:**
 - Some evidence of **improved student success** (and learning(?)).
 - Some evidence of **student persistence and engagement**.
 - **Student attempts on assessments increased** through semester.
 - Students aiming for an A or B **can't skip over or ignore topics**.
- **Ongoing assessment:** instructor and student surveys, test data analysis.



Zoom classroom, fall 2020

More Inclusive Instruction

- ... *is hard.*
- **New Instructor Training**
 - **Center for Research on Teaching and Learning inclusive teaching workshop** for new math instructors (graduate students and post-docs).
 - **Integration of inclusive teaching** into Departmental week-long new instructor training program.
- **Ongoing Support**
 - **Workshops in first semester** of instructors' teaching.
 - **Instructor "office hours."**
 - (Graduate student run) **Peer instructor class visits.**



CRLT GSITO webpage

Concluding Thoughts

- **Service opportunities** are many things:
 - *Thankless, boring, and time-consuming*; and
 - **Rewarding, inspiring, and essential.**
 - And **build connections, provide new experiences, and create opportunity.**
 - Joe Gallian says **“Just say yes!”**
- And may provide **connections and access to opportunities and projects** that are **rewarding, productive, and** which in the long run **have significant impact on ones career.**
- And, finally: **thank you!**
 - **and the Michigan MAA Section.**
 - *questions, comments, observations are welcome!*

