



## Subgroup Meeting Summary

**Subgroup #:** Communication, Outreach, and Engagement/Subgroup 3

**Meeting Date:** 09/25/2015

**Meeting Time:** 10:00-2:00

**Meeting Location (WebEx, OBR, etc.):** Riffe Center, Conference Room 1932

### Subgroup Decisions/Meeting Outcomes:

#### Welcome and Introductions

Michelle Younker and Jim Fowler, the subgroup 3 co-leads, along with Michelle Blaney from the Ohio Department of Higher Education welcomed everyone to the meeting and outlined the planned agenda items for the day.

#### Updates from Other Subgroups

##### Subgroup 1 (New and Alternative Pathways)

There are no updates at this time. The next Subgroup 1 meeting is in Columbus on October 9, 2015.

##### Subgroup 2 (Ohio Transfer Module)

Ohio transfer module met a couple times this summer.

Amanda Hanley attended, and there was a discussion around QR outcomes and college algebra and statistics. There are already learning outcomes for college algebra and statistics in the OTM. The idea is to expand the topics into measurable learning outcomes which are student-centered rather than content-centered.

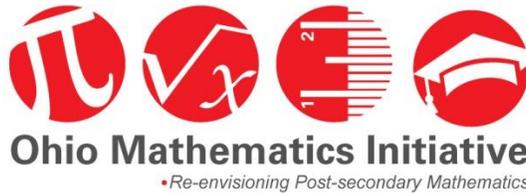
One open question: Will college algebra be a college level math course? In what ways does college algebra build on high school content?

Next meeting is November 13.

##### Subgroup 4 (Data Collection, Analysis, and Sharing – Enyinda Onunwor

There has not been a meeting since Subgroup 3 last met in May. The next meeting has not been scheduled at this time.

**Subgroup 5 (Alignment Between Secondary and Postsecondary Content and Instruction) – Michelle Younker**  
April 24, 2015 was the Student Success Summit at the Columbus Convention Center.



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Videos of the Summit are available on the OMI website. The program for the summit and PowerPoint slides from the presentations have also been posted.

A report has been drafted detailing the events during the Student Success Summit.

Based on the results of a recent survey, there is a suggestion for regional workshops, combining high school and college instructors together. These workshops may focus on 12th grade transitional courses.

Last meeting: August 25, 2015. A meeting summary is not available at this time. The next meeting will be scheduled soon.

### Academic Affairs Completion Initiative Timeline

The Academic Affairs Completion Initiatives Timeline includes a broader perspective of all the activity within Ohio.

For example, spring 2016 includes webinars on gateway courses, co-requisite strategies, and remediation, and regional workshops on high school/postsecondary alignment.

There is another CCA/Dana Center grant emphasizing pathways for completion. The initial meeting was in June 2015 and Ohio submitted an application. A grant for technical assistance has been awarded to Ohio. There is a meeting in October, which will combine Math faculty and English faculty.

The timeline is located on the OMI website at:

[https://www.ohiohighered.org/sites/ohiohighered.org/files/uploads/math/ODHE Academic Affairs Strategic Initiatives 2015-2017 Timeline.pdf](https://www.ohiohighered.org/sites/ohiohighered.org/files/uploads/math/ODHE_Academic_Affairs_Strategic_Initiatives_2015-2017_Timeline.pdf)

### Update on Various Subgroup 3 Projects Presentations

Glen Lobo has prepared a spreadsheet of past presentations and future opportunities.

May 15, 2015 was a presentation to the Ohio Math Science Coalition. Michelle Younker gave a 45-minute talk on the OMI. The audience included math and science educators from high schools, 2- and 4-year schools, including the president of AMATYC.

June 5, 2015: the Teaching and Learning in Higher Education Conference was hosted at Franklin University. A speaker request proposal was received through the OMI website for this event. We took the opportunity to do a 90-minute session. Ricardo Moena from Subgroup 2, Jeff Zeager from Subgroup 1, Michelle Blaney and Hideo Tsuchida from ODHE, and Michelle Younker were there. It seems that the private schools were interested to hear what the OMI is doing, and they were interested in Quantitative Reasoning (QR) courses.

June 11-12, 2015: Pearson hosted two redesign workshops and invited us to talk about the OMI. Jeff Zeager gave a presentation at Cleveland State University, and Phil Blau gave a presentation at The Ohio State University. The event focused on alternate pathways, and QR courses (statistics, writing activities, finance, etc.) as opposed to a math-for-liberal-arts course, but the event also talked about the connection between QR courses and broader trends in higher education. Eric Gaze gave a presentation on quantitative reasoning. There is a free



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Pearson site for QR content; get in touch with Phil Blau to look at this. Michelle Blaney spoke highly of Phil Blau's presentation at the event.

On the same day there was a Complete College America Co-requisite workshop at the University of Minnesota. That event also talked about just-in-time remediation, and discussed pathways to success.

June 17-18, 2015: Designing Math Pathways, workshop sponsored by the Dana Center up in Michigan. Jim Willis and Michelle Younker attended this event, and learned more about the Dana Center's New Mathways.

June 25-26, 2015: College Board had asked the state to discuss math pathways. A representative from Kilgore College who works with the Dana Center, a representative from Indiana, and Michelle Younker spoke at the Accuplacer/CLEP conference about redesign events across the US. This was a group of non-mathematicians. Students talk to counselors and advisors about math and math anxiety: for many people, there is much concern about math, and therefore much excitement that mathematicians are looking to improve and make math more relevant.

August: MathFest! Glen Lobo attended the 100th anniversary. Many excellent speakers and invited talks, especially Manjul Bhargava. Joe Gallian also gave a great presentation on the Putnam exam and its history.

TPSE: Jim Fowler attended the TPSE meeting in Chicago, and provided a review for subgroup 3.  
<http://www.tpsemath.org/chicago2015>

Vani Cheruvu had an interview this summer with Michael Dorff that centered on showing students some of the concrete career-ready features of focusing on mathematics. The idea is that this sort of discussion early in student's careers will inspire them to focus more on math courses.

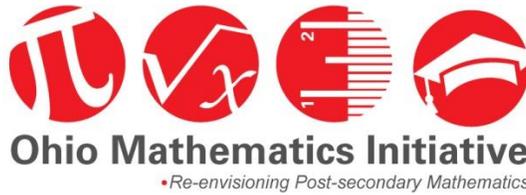
The University of Toledo is redesigning some courses, particularly with an eye towards redesigning Math 1180 for liberal arts to align with the learning outcomes. Another question is how Math 1200 can count as a college-level course, around math modeling. Vani is looking to get information from OMI about QR and liberal arts outcomes. The learning outcomes for QR should be ready by December. A draft is ready now, and they are undergoing additional rounds of review.

Vani Cheruvu: When we are modifying a course for submission to OTM, do we have to send it through the university curriculum process first, and then ODHE, and then take it back through the university process for modifications? Or is there some mechanism that we can get the feedback from ODHE first? Michelle Blaney responded that she and Hideo Tsuchida would be happy to answer any questions that may arise as institutions are preparing new courses that will be submitted for OTM approval.

### Fast Facts Article

Fast Facts articles have been written to provide faculty with news about the OMI, but we are also imagining the use of Fast Facts for some public relations content too.

There is a Fast Facts draft just now available focusing on jobs for mathematicians beyond teaching; there is already a Fast Facts in the pipeline focusing on women in STEM.



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There is a request for a Fast Facts about QR that could come out earlier, before the end of December to let folks know that discussions are ongoing about QR courses. Maybe it would be better to wait, since December is not so far away.

### Upcoming Meetings

Please send Glen Lobo information about any presentations, or if there are any other possible presentation opportunities.

MAA Sectional meeting: Michelle Younker will put a proposal together for Glen Lobo to give a talk.

Another possible opportunity is the NCTM or OCTM.

Michelle Younker can provide short (100-word or 50-word) paragraphs that are helpful when submitting talk proposals.

Vani Cheruvu is interested in pursuing the Spring Ohio MAA meeting opportunity.

There are also local opportunities (e.g., meetings with your institutions' leadership) that should be recorded by Glen Lobo, too.

### Google Docs Repository

The Presenter's Kit is under development on Google Drive. Jim Fowler will need your email address to provide access to the drive. If you'd like to be able to edit the documents, send an email to [fowler@math.osu.edu](mailto:fowler@math.osu.edu) with your Gmail account so that Jim can authorize you to edit the files.

### Starter Slide Deck

There is now a starter slide deck. The starter deck will be placed on a "new" ODHE PowerPoint template. This starter slide deck is annotated with a detailed notes section, so even if you aren't familiar with the content, you can practice and learn more from the annotations.

### Guiding Questions

These questions can be shared with chairs. There can be more added here – "Have I considered the impact on associate degree programs?"

One of the recommendations is the removal of the intermediate algebra prerequisite; so have you submitted anything else for the OTM or do you plan to? What will be the alternate pathways be?

There should be something about common core, but we are not sure what to ask. It is just now being implemented, so one immediate impact is on pre-service and in-service teacher programs.

These should be shared with Subgroup 5, to interact with those who have teacher prep programs on their campus.



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There should be a question about measuring success? What data do you gather annually? For majors, for non-majors? What advice do you have about data that you gather that you find useful for informing program-level decisions? Obvious course grades, DFW rates, but is there more? Do you have examples of "closing the feedback loop" that you would like to share?

These are partly "talking points" for chairs, so these questions would be posted on the website. What should each institution think through? These can be the questions that we use in the presentations that we give.

Phil Blau is charged with writing a general introduction. The deadline here is January 2016 for the Chairs meeting.

Michelle Younker will contact Subgroup 5 and Subgroup 1 to add something about the QR and pathways, to see if there are some talking points that they have in mind.

### Executive Summary

A rough draft has been developed. Further review is necessary.

### Press Release Template

A rough draft has been developed. Further review is necessary

### Frequently Asked Questions

There are some good questions also in the Google Docs repository, but there are no answers. Some of these answers will be quite lengthy; based on the co-requisite workshops that Michelle Younker attended, for instance, there are multiple states that have multiple ways of describing co-requisite strategies.

Providing a response to the question about "college-level" is difficult because there are surely some changes or clarifications that might be coming around "college-level." For some of these proposed courses, there are no students yet, so there is no sample of student work to show. There needs to be student clarifications.

### Quantitative Reasoning Update

There is some documentation on the new Mathways from the Dana Center.

The learning outcomes for QR development is a work-in-progress, quickly changing.

The QR course would be assigned a TMM number. The panel has recommended removing the floor and ceiling for credit hours, but typical ranges are between 3 and 4 credit hours. There is usually some introductory text for a TMM course; the 2014 CUPM guide includes some text describing some very high-level outcomes or guiding principles for a QR course. The newer CUPM guide focuses on majors but reiterates some of the 2014 material.

QR is intended for non-majors, and as a terminal course. A student in the course might be seeking an associate's degree, a liberal arts degree, nursing majors, econ majors, and basic chemistry.



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Students will be able to interpret math information from a variety of forms; represent things in a variety of formats; perform calculations; understanding the appropriate use of technology; analyze, synthesize draw conclusions from information. Communicate, verbally, symbolically, to explain a particular idea or conclusion.

Essential outcomes were determined by looking at the preponderance of courses; some focus more on stats, some more on modeling. Overlap was examined to determine the core. 70% of instructional time is designated to those essential topics. Non-essential outcomes can be flexible depending on the exact needs of your QR course.

A successful QR student can demonstrate these competencies: NUMERACY. This is not a typical college algebra class, but the intent is to build on the high school exit standards. Everything they perform should broaden, deepen, or extend those high school skills. Solve real-world proportion problems; specificity and sensitivity; absolute and relative change.

Pedagogically, a QR class would be taught with students working in small groups.

Another major competency is modeling. A large component of these courses is a financial literacy piece; much of this is missing in the secondary curriculum. Students will be asked to choose between linear and exponential models. Logarithms are included here, too.

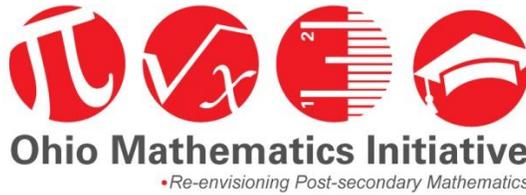
A challenge is assessment: if communication is a key outcome of a QR course, are the mathematicians prepared to assess the quality of written and oral communication?

A third major competency is probability and statistics. The QR course is not designed to be a true intro course to stats, but students will be exposed to some basic arguments, e.g., by critically examining statistics appearing in a media report, or considering the sources of bias in a particular sampling strategy, or identifying confounds. Visualization of data is another outcome.

The New Mathways project at UT-Austin has a lot of material; North Carolina worked with Eric Gaze to build their own materials, and they organized a workshop to train faculty to run a QR course in a discovery learning format. Indiana used Pearson's material, and it is a statewide course.

Some ongoing concerns: How do we know this is a college-level course? We should provide examples of what is and what is not included. There aren't a lot of materials available right now which are designed for a "group learning" type environment (other than maybe the state-developed materials and the Quantway). This should not be a math-for-liberal-arts course that someone slapped a "QR course" sticker over. How do we train the instructors to run a course in this inquiry-based format? And what about large-scale general education courses? With 200 students, how can you facilitate group interaction? And if the platform is online and yet it should be "active," how do you achieve that? How do you do that online? Our resource grant with the Dana Center is useful. Eric Gaze is an excellent resource.

Phil Blau asks whether every institution is going to offer such a course. Should every institution offer this course? Michelle Younker notes that with the chairs meeting, it seems like most institutions already have a course that will meet the standards. But maybe not every institution is going to have a QR pathway? But this course solves a problem with students in college algebra who maybe are not best served there.



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Glen Lobo points out that if the 4-year institutions don't offer such a course, then the 2-year institutions won't see enrollment because students won't see the value for transferring.

### Discussion of Charge and Goals

Updating materials is one goal

Reaching out to groups about the Ohio Mathematics Initiative.

How do we reach *all* the faculty who are teaching math courses? How do we reach adjuncts?

Michelle Younker will consider some of these options and consolidate these ideas.

### Update on Complete College America Grant/Dana Center Grant

We are entering the second year of CCA/Dana Center resource grant. Susan Wood (Virginia) has connected us to excellent resources. Those introductions are easier if there is a connection to the Dana Center already. Starting this fall, we'll be entering into the "pathway" grant with English and Mathematics.

### Subgroup Homework/Follow-Up (if any):

#### Presenters' Kit

- Starter slide deck (update, include reference slides; Michelle Younker will handle slides and Crystal Clough will proofread)
- Local conferences (Glen Lobo will be researching deadlines for professional societies; MathFest)
- Subgroup contact information (community tab on website)
- List of co-leads
- OMI executive summary (reference write-up in success summit, summarize to one page and update it, Jim)
- Print-ready logos (OMI, ODHE, Michelle B)
- Newsletter (Complete and available on website)
- Fast Facts (Complete and available on website)
- Short videos (overview of initiative, Jim)
- Press release template
- Frequently asked questions
- Statistics from Subgroup 4 (Enyinda)
- Guiding Questions for Chairs (Phil and Angela, and Jim will create a template to begin)

### Next Meetings:

- Friday, November 6, 2015 at 9:30am for an online meeting.
- Friday, December 18, 2015 at 9:30am for an online meeting.