

## Math Pathways Task Force

October 31, 2014

11:00am-2:00pm

Colorado Department of Higher Education  
1560 Broadway -Suite 1600 - Denver, CO 80202

Call-in Number: 1-877-820-7831; Access code: 473156#

To join the webinar: <http://connect.enetcolorado.org/gecouncil/>

### Meeting Notes in Red

**Objective:** Organize and establish Task Force, confirm membership, plan logistics & prep team members, setting the context for the math pathways project in Colorado.

1. Greetings and Introductions (Dean & Ian)  
In attendance: Dean Allison (UNC), Alexander Hulpke (CSU), Rick Miranda (CSU), Steve Aldrich, (ASU), Sandy Gilpin (FLC), Rick Ott (CMU), Dave Ruch (MSU Denver), Casey Sacks (CCCS), Rob Tubbs (UCB), Alexis Venter (ACC), Ian Macgillivray (CDHE)
2. The general question is how can we increase success rates in gateway math courses? (Dean)
  - a) Our general sense of the work required in Colorado--three main goals:
    - i. Convene math faculty leaders to decide how well gateway math courses are aligned with programs of study. For example, are there programs that require college algebra when that might not be the best gateway math course?
    - ii. Identify alternative gateway math courses that are more appropriately aligned with the math skills students need to succeed in their programs of study.
    - iii. Work with representatives from academic disciplines to review their math requirements and adopt alternative courses to college algebra for non-calculus based majors.
  - b) How project ties in with Attachment: *MAA\_Committee on the Undergraduate Program in Mathematics.pdf*  
Dean briefly discussed roles of Chair and Members and how members were selected.  
Rick gave highlights from National Association of System Heads (NASH) and that their work is largely aligned to the task force's work. NASH promotes for math:
    - Gateway math courses being aligned with programs of study;
    - Co-requisite remedial education;
    - Focus on problem solving; and
- Faculty being open to new teaching methods and tools.
3. Review of the national / state context for the Building Math Pathways project
  - a) Presentation: *Building Mathematics Pathways to Programs of Study Project* (Amy Getz, The Charles A. Dana Center; getz\_a@austin.utexas.edu)

- b) Related initiatives in the state (Ian & Casey):
  - i. revision of gtPathways competencies & content
  - ii. revision of developmental education in the community colleges
  - iii. supplemental academic instruction at four year institutions

Ian discussed i and iii, as well as possible revision to the CCHE Remedial Policy to update cut scores on math placement tests. Also mentioned that institutions/systems that are implementing a co-requisite remedial model are CCCS, MSU Denver, FLC, WSCU and Aims.  
Homework: Suggest cut scores for gateway math courses in the Remedial Policy table.

4. Lunch

5. Draft Overall Goal & Mission Statement (group discussion)

- a) DRAFT Overall goal (Copied directly from the Ohio Mathematics Initiative)

*Develop expectations and processes that result in each institution of higher education in Colorado offering pathways in mathematics that yield (1) increased success for student in the study of mathematics; (2) a higher percentage of student completing degree programs; and (3) effective transferability of credits for students moving from one institution to another.*

- b) DRAFT Mission Statement

*The mission of the Colorado Math Pathways Task Force is to*

- a) Convene math faculty leaders to decide how well gateway math courses are aligned with programs of study;*
- b) Draft a public statement on the importance of better alignment of gateway math courses with programs of study;*
- c) Identify alternative gateway math courses that are more appropriately aligned with the math skills students need to succeed in their programs of study; and*
- d) Work with representatives from academic disciplines to review their math requirements and adopt alternative courses to college algebra for non-calculus based majors.*

Homework for the Task Force: Let Dean know your thoughts on the draft Goal and Mission Statements.

6. Goals & Challenges Identified Thus Far: (group discussion)

Short-term Goals & Challenges ("low hanging fruit")

- a) Common definition/shared understanding of gateway courses
- b) Degrees with Designation – gateway math courses
- c) Revise data pulled for the institute in Texas. Disaggregate by IHE and confirm accuracy
- d) Connect this work with Fac2Fac revision of gtPathways content and competencies
- e) How do algebra with modeling math courses fit into the alternative math gateway? Which institutions have these courses? Are they in gtPathways? Do they transfer and apply to programs of study?
- f) What to do with April 24, 2015 Fac2Fac? Who are right people to invite and try to get Uri Treisman?

### Long-range Goals & Challenges

- a) Data on what happens to students who are funneled into College Algebra?
  - i. College students with no declared major
  - ii. Concurrent Enrollment high school students
  - iii. What percent of students completing college algebra go on to complete a non-business calculus course?
- b) Which programs require which gateway math course and pre-reqs (by major)?
  - i. Institutional Transfer Guides that GE Council is working on can help answer
  - ii. Add a question/note on the template regarding the math pathway of the major?
  - iii. Is College Algebra “hidden” as a pre-req?
  - iv. Is college readiness in mathematics defined by intermediate algebra?
  - v. AS degree requirements at CCCS don’t allow Intro to Stats (3 cr.) to fulfill gen ed math requirement.
- c) Which IHEs/programs use College Algebra vs. Pre-Calc vs. another option as preparation for calculus?
- d) How do we loop advisors into this work?
- e) Are faculty (in majors that require it) satisfied with student outcomes for *Math for the Liberal Arts* (including support, mentoring and supervision for adjunct and other faculty)?
  - i. How do we ensure rigor of this course so that when more students are funneled into it, they are well prepared for their programs?
- f) The “fate” of College Algebra
- g) Students transferring math from Emily Griffith, Delta-Montrose or Pickens Technical Colleges (either into CTE or academic degrees)
- h) Consult with professional/accreditation organizations to see what mathematics they are interested in their students learning
- i) Meta-majors with math pathways
- j) These majors a good place to start?: nursing & allied health; business, communication/journalism; criminal justice; social sciences

Dave and Casey: Please send notes you took during these group discussions to Ian.

Alexsis’ notes:

#### **What are the major challenges?**

Communication & Perception of requirements

Committing to the Implementation

Staffing for courses other than algebra track - maintaining quality

Advising College Algebra as the safe bet

Be careful not to close off the option to STEM too soon

Majors across institutions needing to communicate with one another

#### **What should be the goals?**

Determine where we stand and look for outliers:

Align the majors with the courses (four possibilities: take any math class, we recommend this specific class, one specific class is required, major course with required math prereq)

Maintain rigor of courses through standardized learning outcomes

During Implementation – Develop best practices for advising that can be disseminated.

Enunciate as part of our statement the task force's recommendations for best practices

- Disaggregated options - what is the suite of recommended options
- Mapping the courses to degrees (meta majors/themes)

**What should be the highest priorities?**

Data Collection:

What are all of the options for 100 level courses (GT Math page on web)

7. Data: Are there data we need that support the goals, identify problems, and would allow us to build faculty support for this common cause? Identify the preliminary data that will be most helpful for the initial meetings. (Small group discussions led by Dean, Robb, Alexis, & Dave)
  - a) Survey institutions for gateway math by discipline to get lay of the land.
  - b) How many sections of Math for the Liberal Arts (or comparable course) and Introductory Stats and College Algebra do you typically offer each year?
  - c) How are the redesigned dev ed courses working now? (MAT 050 and 055)
  - d) How are undeclared major students advised?
  - e) Is College Algebra recommended as the safe bet for undecided students?
  - f) Do your advisors use the idea of meta-majors as a way to advise students into math classes?
  - g) What is your perception on what math class students will need when transferring from a two year to a four year school?
  - h) What percentage of "100 level" students are in College Algebra vs. Statistics vs. Math for Liberal Arts vs. Finite Math?

Homework for the Task Force: Let Dean or Ian know if you think anything is missing from this list or should be removed. Also, if you have a list of math courses by degree program (to identify common gateway math courses), please send to Ian. If not, let Ian know where is the best place to search for this information and Ian will get CDHE staff to help out.

8. Other Business?

NEXT MEETING: November 21, 2014, 10:00AM - 12:00PM, CDHE

After the November 21 meeting, an idea is to meet less frequently but for a slightly longer meeting time.