

## Math Pathways Task Force

February 27, 2015

10:00am - 2:00pm

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

Call-in Number: 1-877-820-7831; Access code: 215368#

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

### NOTES

Objective: Vet proposed solutions across working groups

Outcomes:

- Ensure a common understanding of the proposed strategies, advantages and disadvantages. Now is the time to be persuasive.
- Determine whether any strategies are missing or should be combined
- Vote to prioritize strategies.
- Establish responsibilities and process/assign homework for Solution Revision.

10:00 – 10:15	<p>Process Check-In</p> <ul style="list-style-type: none"><li>• Greetings &amp; Introductions</li><li>• Review of process and goals</li><li>• Approve notes from January 23, 2015 meeting</li><li>• Check in with members</li></ul>
10:15 – 11:00	<p>Review</p> <ul style="list-style-type: none"><li>• <i>Summary of defining problems_CO_2015_01-12.docx</i></li><li>• Linking Problems, Drivers and Solutions worksheets (each group takes 5 minutes to give quick overview of strategies and field questions for clarification)<ul style="list-style-type: none"><li>○ Curriculum (Rob, Rick O., Rick M., Shelly)<ol style="list-style-type: none"><li>1. Calc</li><li>2. Stats (terminal, progressive?). Would be difficult for smaller schools to offer progressive (2 courses)</li><li>3. College Algebra. 2 versions (one modeling) might not transfer well.</li><li>4. Math Liberal Arts<ul style="list-style-type: none"><li>• Thoughts: More complexity (more gateway math courses) won't help with simplifying advising. Do other states have 2 versions of stats and how does that work? Do other states offer a modeling course? (Georgia does). 4-years do a good job accepting in transfer math courses overall. Modeling course may have more critical thinking so if took students away from Math for Lib Arts would be good for those students.</li></ul></li></ol></li></ul></li><li>○ Advising/Placement/Transfer (Casey, Alexander, Dave, Steve)<ul style="list-style-type: none"><li>• Focus on plans of study/meta majors/advising</li></ul></li></ul>

	<ul style="list-style-type: none"> <li>• Don't want to see placement scores be the primary driver for math choice.</li> <li>• Revisit transfer agreements that require college algebra. Give guidance statewide so future agreements don't default to Coll Alg.</li> <li>• Systematic math department meetings with client disciplines at program review. Might be responsibility of client discipline to bring up with math dept.</li> <li>• Math courses should not be a filter for a program. Math should not be an afterthought, at end of major (should be completed w/in the first 30 credits). One way to approach this discussion with client disc is to ask "what are the skills you want your students to have?" as a way to tease out what it really is they want students to know and be able to do and use that info to select appropriate course and if there should be pre-req. MPTF has some obligation to help inform this discussion and help the client disc understand what they need/should want.</li> <li>• Help with understanding different math readiness indicators (not just cut scores on an assessment). CCHE Remedial Policy could help with clarity here? And how to handle non-trads returning vs. fresh out of high school? What's our state data on GPA and can we include in the policy? Look at North Carolina for example (Bruce).</li> </ul> <ul style="list-style-type: none"> <li>○ Andragogy/Pedagogy (Shelly, Frank, Lynn) <ul style="list-style-type: none"> <li>• Adults need to be involved in the planning of their instruction. Need to keep in mind differing needs of adults vs. traditional just out of high school.</li> <li>• Resources/info/supporting materials/PD for advisors and faculty.</li> <li>• Revision of gtPathways competencies and rubrics with signature assignments may shape different assessment strategies and thinking about curriculum design.</li> <li>• Does traditional lecture model fit with theories of adult learning? How inspire teaching that reaches more types of student learning styles? Some IHEs/departments are more cohesive than others, insofar as all sections of a course agreeing to same/similar teaching/curriculum.</li> <li>• Addressing student engagement, making sure right faculty are teaching the right courses, curriculum development.</li> <li>• How respond to the "quality argument" that we're lowering rigor by having math pathways?</li> <li>• Start gtPathways revision of content with "What are 4-6 big learning outcomes you want students to get out of this course?" and then start thinking about content so it's not just a long laundry list. Go deeper, not wider.</li> </ul> </li> <li>○ Communication/Information Sharing (Alexsis, Dean, Sandy, Ian) <ul style="list-style-type: none"> <li>• Communication bridges across the other groups.</li> <li>• Regular communication from CDHE to provosts/asst. provosts and does that trickle down once back on the campus?</li> </ul> </li> </ul>
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	<ul style="list-style-type: none"> <li>• Fac2Fac email lists for disseminating info.</li> <li>• Organize sessions on math pathways at state/national conferences and state groups like CFAC.</li> <li>• Utilize websites and other online platforms better.</li> <li>• PD opportunities for faculty, staff and advisors.</li> <li>• Use advisor distribution list at CDHE and advisor conferences.</li> <li>• Need a framework to share information on a statewide basis with all IHEs/faculty.</li> <li>• Institutional Transfer Guides need to get done!</li> <li>• Leadership at institutions need to make change happen. Chair and academic dean buy-in is critical.</li> </ul> <p>Discussion</p> <ul style="list-style-type: none"> <li>• Do we agree on (have common understandings of) possible solution strategies, advantages and disadvantages?</li> <li>• Are any strategies missing?</li> <li>• Should any strategies be combined before voting to prioritize?</li> </ul>
11:00 – 12:00	<p>Prioritizing Solutions to Identify Task Force’s Top Priorities, Pt. I</p> <ul style="list-style-type: none"> <li>• Break into the 4 small groups outlined above to prioritize solutions</li> <li>• On each group’s Linking Problems, Drivers and Solutions Template, each member of the group votes on each Possible Solution Strategy using 1= Top priority, 2=Second Priority, 3=Third Priority. No votes should be cast for lower priorities.</li> <li>• Tally up the votes for your strategies. Reflect on the group discussion. Identify the highest priority issues (1-3) for your subtopic. Is there consensus about the solution?</li> </ul> <p>Now use <i>Template for Solution Revision</i></p> <ul style="list-style-type: none"> <li>• For the high-consensus areas, draft a short paragraph for each. Be sure to consider who has authority over whether change happens? Who at system-level? Who at the campus-level?</li> <li>• Are there any issues that are very high priority but about which there is not group consensus? Identify these areas and outline the tensions you heard in the discussion.</li> </ul>
12:00 – 12:45	<p>Lunch</p> <ul style="list-style-type: none"> <li>• Come to some closure on Pt. I above and start thinking about Pt. II, which comes next.</li> </ul>
12:45 – 1:30	<p>Prioritizing Solutions to Identify Task Force’s Top Priorities, Pt. II</p> <ul style="list-style-type: none"> <li>• Large group discussion and voting <ul style="list-style-type: none"> <li>○ Each of the 4 groups takes 5 minutes to share their top 3 priorities and then Task Force discusses.</li> </ul> </li> </ul> <ol style="list-style-type: none"> <li>1. Curriculum: Rick M. <ol style="list-style-type: none"> <li>i. Design STEM track so that most students get to CALC 1 in 1<sup>st</sup> year</li> <li>ii. De-emphasize “terminal” STAT class: 1<sup>st</sup> STAT class should open doors to more STAT, upper-division classes</li> </ol> </li> </ol>

iii. Incorporate Modeling Class (with or without Algebra) in non-STEM options

iv. humanities math that could/should also have modeling

- Thoughts: Business relies heavily on College Algebra but option iii above could meet this need. Rather than having one of these modeling classes for each type of program, have one that incorporates everything (to extent possible) student needs for any type of program.
- Some engineering and architecture students need trigonometry.

## 2. Advising/Placement - Casey

i. Metamajors linked with gateway math courses and have scripts for advisors. (aimed at students)

ii. Placement using multiple indicators of college readiness and pathway different placement scores. Clean up CCHE Remedial Policy and include HS GPA as an indicator. (aimed at departments and advising centers)

iii. Client Discipline Education: revisit STAA/DwDs and future agreements (GE Council, statewide groups, college, departments, faculty), program review competency conversations.

- Thoughts: Some CC advisors know almost any major will accept College Algebra so often becomes default if student isn't sure what major they want to do at 4-yr.

## 3. Teaching & Adult Learners (Andragogy) - Shelly

i. Professional Development to help faculty meet needs/styles/experiences of adult learners too: course specific website/repository of information/teaching and curricular resources where instructors can access what other instructors are using. Promote active learning and best practices in classroom. Utilize Fac2Fac Conferences?

ii. Staffing: if we move students more towards Stats or Lib Arts Math, are there faculty/adjuncts with the background to teach them? PD for Stats instructors needed?

- Thoughts: Concerns about uniform standards across different sections within an institution. GE Council/CDHE's role in ensuring adherence to gtPathways content and competencies? Analyze data on transfer students to identify patterns in unpreparedness? UCD's pass rates for Stats as example (Lynn) because of PD. How do we push for best practices and motivate IHEs to put more resources into PD for best practices? Lynn wants data that demonstrates that incorporating best teaching practices improves completion rates.

## 4. Communication - Dean

i. MPTF members are designated lead communicators with their institutions through the rollout of the task force recommendations. They are charged with identifying those individuals are in leadership positions in their institutions.

ii. We should use multiple venues and communications including emails/distribution lists, in-person meetings such as town Hall meetings, conferences and state summits.

	<ul style="list-style-type: none"> <li>• <b>Thoughts: Identify key student services folks/advisors. Link Student and Academic Affairs. Engage advisors more proactively in how information given to students is organized and communicated. Need sustainable structures for communication. Put some guidance in CCHE Policy I, L: Statewide Transfer and gtPathways so that in the future folks don't forget to choose appropriate math course for the program. OH is developing a communication strategy (Bruce will dig).</b></li> <li>• Members of the 4 groups record (add notes to the <i>Template for Solution Revision</i> documents for each of the top 3 solution strategies)</li> <li>• Is there consensus amongst the Task Force members that the small groups chose the best priorities? Why or why not?</li> <li>• Turn in all <i>Template for Solution Revision</i> docs to Ian to be typed up (or type up soon after the meeting and email to Ian).</li> </ul>
1:30 – 2:00	<p>Next steps</p> <ul style="list-style-type: none"> <li>• Work assignments <ul style="list-style-type: none"> <li>○ Work in small groups (via email) to the <i>Templates for Solution Revision</i> due back to Dean and Ian by March 13? <b>Homework sent to groups on March 2, 2015.</b></li> </ul> </li> <li>• Who should be invited to the retreat to vet the draft recommendations? <b>We started a list.</b></li> <li>• Next meetings <ul style="list-style-type: none"> <li>○ April 3, 10am-2pm, CDHE</li> <li>○ RETREAT: May 18, 9:00am – May 19, 5:00pm, Grant-Humphreys Mansion, Denver (*Really important everyone be here in person please.) 8 hotel rooms reserved for May 18. <b>(1. Dean, 2. Frank, 3. Rick O., 4. Lynn &amp; Alexsis, 5. Sandy?, 6. Steve?, 7. Shelly?, 8. Rick M. or Alexandar?)</b></li> </ul> </li> </ul>