

University of Colorado's President's Teaching and Learning Collaborative  
Progress Report, Spring 2008  
Carnegie Academy for the Scholarship of Teaching and Learning

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The University of Colorado President's Teaching and Learning Collaborative (PTLC) participates in the System-wide Collaboration cluster of the Carnegie Academy for the Scholarship of Teaching and Learning (CASTL). Accordingly, we introduce this report on the second half of our second year of operation with a discussion of what we have learned about collaboration across our three campuses.

*Context*

The University of Colorado has three universities, the University of Colorado at Boulder, the University of Colorado at Colorado Springs, and the University of Colorado at Denver and Health Sciences Center. The latter was formed recently by merging previously a separate campus in downtown Denver with the Health Sciences center. PTLC is a system-wide program fostered by the President's Teaching Scholars Program, a system-wide program reporting to the System Vice President for Academic Affairs and Research. The Steering Committee for PTLC includes faculty from all three universities. Funding for the program comes in part from the system president's office and in part from chancellors of the three universities and was founded the University President's Teaching Scholars Program 1989-present the sponsor of the Collaborative and the original fundraiser.

*Importance of Assessing Learning in Undergraduates*

As public resources for support of higher education are increasingly strained, it is especially important that institutions work to maximize the value students receive from their educational experiences. A growing share of support is likely to come from alumni, and support is more likely when students feel that their alma mater has made their education a top priority. As progress in physics education in particular has shown, improvements in teaching driven by ongoing assessment of student learning can have real impact in making more students successful. More work of this kind can increase retention, student satisfaction, and student success, leading to increased support for the institution.

The PTLC faculty researchers work on projects that aim primarily at assessing student learning at the undergraduate level. Through their research on teaching and learning, we hope to improve the undergraduate experience at the university. This may occur through changes PTLC faculty researchers make in their own teaching after conducting their research. In addition, other faculty beyond PTLC participants may work to enhance their classrooms as a result of the dissemination of PTLC research.

*System-wide Operations*

PTLC recruited faculty investigators for research projects on teaching and learning at each university through a "Call for Proposals" (see Appendix A). Investigators are supported by coaches (faculty knowledgeable about education research process) and mentors (faculty knowledgeable about the investigator's discipline.) Investigators, coaches, mentors, and steering committee members met four times in the spring and two times in the fall to discuss research in teaching and learning and scholarship and project progress: issues and successes.

### *Documenting the Impact of System-wide Operations*

One product of PTLC at the system has been that faculty at all three universities have opportunity to carry out research in teaching and learning projects with collegial support. Faculty from all three universities participated in a pilot program in 2006 that led to the launch of PTLC in 2007 and helped to establish the program. It is very doubtful that the leadership available at any one of the universities would have created a teaching and learning research initiative on an individual campus because of the small number of faculty with the necessary experience and availability to create such a collaborative.

Some have urged that the program present itself as much as an activity of the separate universities rather than a system-level program. They believe that some faculty is more likely to respond to what they see as a “home” or campus initiative. They may also be responding to former President Brown’s directive in system administration to de-emphasize system level programs.

The collaborative promotes sharing of information resources. In the spring, librarians from two of the universities collaborated to identify library resources about educational research for the participants. There were presentations to the group by experienced teaching and learning researchers and a researcher on educational theory from the university at Boulder. It is unlikely that participants from the other universities would have had access to this opportunity outside the PTLC framework.

Partly because the program is in its infancy, there have been only a few collaborations among researchers, however, across university boundaries developing. There have been a few cross-university contacts outside the group meetings but no sustained interactions have developed to date. Participants have indicated they hope to witness or be part of “cross university” collaborations in the future. Participants, however, report that they greatly enjoy learning about student’s learning, cultures and pedagogy from the other campuses.

Interviews and surveys document the impact of the small-group discussions among investigators, coaches, and mentors at the PTLC Progress Report meetings. There is no specific evidence that attendees coming from different universities is uniquely valuable. In theory, an educational research activity at any one university could possibly draw nearly the same range of disciplinary participation. Interest in and knowledge of the assessment of learning in higher education is thinly spread. A system-wide collaboration has drawn together a critical mass of faculty. This spring participants were asked about what benefits they gain from being a system-wide collaborative. Their responses are included in this report.

### *Program Description*

The President’s Teaching and Learning Collaborative (PTLC) is a University of Colorado system-wide program serving faculty at three campuses. The disciplines involved are:

- Applied Mathematics
- Behavior Science
- Business
- Communication and Evaluation
- Communications
- Computer Science
- Ecology and Evolutionary Biology
- Education
- Educational Administration
- Electrical and Computer Engineering
- English
- Environmental Studies
- Geography

- Journalism and Mass Communication
- Keyboard
- Mechanical Engineering
- Medical Oncology
- Medicine
- Music and Entertainment Industries
- 
- Nursing
- Organic Chemistry
- Pharmacy
- Psychology
- Rhetoric and Composition
- Sociology
- Spanish and Portuguese
- Visual and Performing Arts

The goals of the PTLC are to promote educational research about the assessment of learning, classroom, and teaching practices in an effort to improve teaching, learning, and classroom assessment in undergraduate education and to publish research in a refereed journal (see Appendix A). The scholarship of teaching and learning is the “creation and dissemination of original work that makes a useful contribution to knowledge and practice of other teachers” ([www.carnegiefoundation.org](http://www.carnegiefoundation.org)). The program director, Dr. Mary Ann Shea, and coordinator, Prof. Clayton Lewis, requested proposals in the fall of 2006. Participant-researchers accepted to the program were matched with coaches (faculty with knowledge and the practice of educational research and trained in the Carnegie coaching process) and mentors (faculty with expertise in the disciplines being examined). In cohort 2008 not all mentors and coaches were from the faculty researchers campus. Thus, new networking between campuses began. Participant-researchers received modest funding for student research associates support for data collection and analysis from the Program and from their Chancellors and provosts. In addition, researchers received some funding for travel to conferences where they make public their work and contributions in educational research. This report records the first half of the PTLC’s second year (SPING 2008).

Participant-researchers met with coaches and mentors and attended whole group Progress Report meetings on five occasions. The purposes of the meetings were:

- to attend to administrative tasks
- to share literature resources
- to report on educational research progress
- to problem solve regarding research difficulties and
- to discuss relevant topics in teaching and learning
- to discuss library and Internet research resources

While the meetings, establishing personal connections and learning about teaching and learning were the foremost resources provided by the PTLC, additional resources included:

- research articles sent via mail and discussed in meetings
- a library resource web page with links to educational research journals, online communities and investigations of pedagogy initiatives at other campuses
- access to mentors with discipline expertise and coaches with educational research expertise
- faculty presenters and former faculty researchers from the Collaborative

#### *Descriptions of Progress Report Meetings*

The 2008 cohort first met with in December 2007. The purpose of this meeting was to introduce participants to each other and to describe the PTLC to participants. The meeting began

with introductions of everyone present. Each researcher had brought copies of short summaries of their research proposals, and these were available for all participants to read and take with them. Next each researcher met with her/his individual mentor and coach. Mary Ann Shea then called the group back together and explained the structure and purpose of PTLC, which she followed with the reading of an inspirational quotation from Professor Carl Weiman. Mary Ann explained that the purpose of researchers in PTLC is the “assessing of classroom learning.” She continued by offering the three characteristic of research about teaching and learning: peer reviewed, public, and susceptible to critical review. She described that educational research is held to the same standards of research within a discipline, which means it must include rigor, data, analysis, method, and relevance. Professor Clayton Lewis then spoke about the roles of the coaches and the roles of the mentors. Professor Lewis also explained that the Progress Report meetings were intended to be somewhat informal conversations about research for PTLC and also topical discussions about subjects relevant to educational research. The meeting concluded after a discussion about HRC/IRB approval.

The January Progress Report meeting began with Mary Ann Shea offering her thoughts on the national movement of research on teaching and learning. The next segment of the meeting was dedicated to a round table discussion about HRC/IRB. The discussion was led by Mary Geda from COMIRB at UCHSC and facilitated by Yvonne Kellar-Guenther of Communication & Evaluation at UCHSC. Also taking part in the round table was Professor Joe Rosse, the Director of the Office of Research Integrity with the Boulder Campus’s HRC. Following the round table discussion, participants divided into small groups to heard progress reports from faculty researchers. The meeting ended with miscellaneous announcement from Mary Ann Shea.

The February Progress Report meeting was divided into three parts. First, Mary Ann Shea made several announcements and distributed accompanying handouts. Participants then spent about an hour meeting in groups of four to discuss researchers’ progress on their projects. Each researcher was given time to talk about her/his project, and the other researchers, mentors, and coaches in the group offered suggestions and encouragement. During the final portion of the meeting, Professor Noah Finkelstein gave a presentation about teaching and learning. Professor Finkelstein spoke about educational research within the context of the Physics Education Group on the Boulder campus. Participants responded enthusiastically to Professor Finkelstein’s ideas and eagerly asked many questions, which prompted a discussion about educational research.

The April 1 Progress Report meeting began with the first hour dedicated to small group discussions with groups of faculty researchers, mentors, and coaches. After the small groups discussed individual project progress, the whole group reconvened and took part in a large group discussion for about 45 minutes. The meeting concluded with announcements pertaining to travel requests being due, student research associate funds requests, and various other details related to the Collaborative.

The April 30 Progress Report meeting opened with everyone introducing themselves to Alison Graber, a CU librarian present at the meeting. Mary Ann Shea then distributed an article by Robert Barr and John Tagg, which was entitled “From Teaching to Learning.” It was determined that faculty researcher Peter Blanken will work on finding a publication venue for a collection of articles by all PTLC participants. Participants then spent the remainder of the meeting listening to researchers share their progress. All researchers also distributed a handout of their current progress to the group.

The PTLC will hold a final Progress Report meeting in mid-May at the conclusion of the Spring semester. The purpose of this meeting is to encourage researchers to continue their

educational research during the summer. In addition, Professor Randy Bass of Georgetown University will present the national perspective about research on teaching and learning. He will also speak about the practical perspective of working with campus liaisons and directors of campus teaching centers.

*Change within the Collaborative*

The intent of the PTLC and of the Carnegie Foundation to sustain this effort was to support and promote research in aspects of learning and teaching in the discipline in undergraduate education. Note that the research questions are focused primarily on teaching and learning not on the development of research skills. The theory of change developed and nurtured in the Carnegie Foundation for the Advancement of Teaching is that through research, professors develop insight into their teaching and their students' learning. Research in pedagogy informs teaching practice and is based on data analysis. Professors then refine their teaching and/or their assessment of student learning. This research adds new knowledge in a specific area of pedagogy and thereby contributes to the research literature while developing a community of faculty learners.

*Formative and Summative Evaluation Questions*

Evaluation research questions included the following:

1. How do professors best increase their understanding of pedagogy and how students learn via participation in the PTLC program?
  - a. How does PTLC program help professors understand their function and role as a teacher?
    - i. How does the PTLC program help professors define their role as a teacher?
    - ii. How does the PTLC program help professors view and understand learning and their students as learners?
  - b. How does the PTLC program help professors understand the art/science of teaching? How does the PTLC program help professors understand different instructional methods?
    - i. How does the PTLC program help professor participants improve their own instructional methods?
2. How do professors best increase their understanding of the concept of learning via participation in the PTLC program?
  - a. How does the PTLC program help professor participants understand their students' learning needs?
  - b. How does the PTLC program help professor participants understand different types of learning?
  - c. How does the PTLC program help professor participants understand how people learn?
3. How do professors best improve the learning of their students via participation in the PTLC program?
  - a. How does the PTLC program support professors to help improve the academic achievement of their students?

This report is organized around themes that emerged in the qualitative data with quotes drawn directly from interviews, survey, reports, and meetings in an effort to express the PTLC participants' ideas sometimes verbatim. We will illustrate that change has occurred in professors' perspectives, perceptions, and understanding through their educational research. In their own words, professors speak of how they have developed insights into their own teaching and into the assessment of student learning through their PTLC educational research projects.

### *Evaluation Method*

Qualitative and quantitative data for this evaluation has come from interviews, surveys, and observations of participants in PTLC meetings. Participants were self-selected for both the survey and the interviews: not all chose to be interviewed. Nineteen interviews were conducted (see Appendix for interview questions). All researchers, coaches, and mentors were asked to complete a survey. Eight researchers and 13 coaches or mentors responded to the survey (see Appendix for questions). Survey responses were anonymous. Data was read repeatedly and systematically allowing for themes to emerge. An effort was made to allow participant voices to tell the story of the Collaborative. Quotations have been included in this report.

## Findings

### *Changes in Faculty Researchers*

- ° Participants have expressed changes in their perceptions and understanding.

<p>"I have developed assessment tools that are so helpful. One of the biggest things that has happened is in terms of my testing. I now use all reflective tests and quizzes instead of the traditional tests and quizzes. Then I can tell what they have really learned. It's not just about content, but my teaching is about the creative aspect too. And I now assess that differently." Judith Coe, UCD</p>
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<p>"I found yesterday at the meeting that talking in small groups that we talked about things I had never thought through before. Things that didn't seem relevant to my work before now seem relevant to me. There are many different forms of education and teaching, like we could do things like discussions or seminars. I hadn't thought of those formats before. It's great to be in a group with other people who seem so open to new ideas." Lynne Bemis, UCHSC</p>
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<p>"I am just really excited about trying different ways of teaching because different people learn in different ways. I myself as an adult learner have taken things that didn't make sense to me in the past. It had a lot to do with the teacher or instructor I had. So that has made me very aware of how people teach in different ways. They can present the same material but in very different ways." Jane Kass-Wolff, UCHSC</p>
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<p>"In terms of my own teaching, the way I think about teaching, well, that has changed as I think about this project more. That is for sure. In my assessment of the students I teach, that has changed through what I am seeing in this project. It has changed already. My class this semester is totally different from the class I ran last semester just because of thinking about these ideas and questions. So I am doing things in that class now that I wouldn't have done before just because I am thinking about these things. It's more, you know, active learning, discussions, participation, hands-on demonstrations, a lot more of those things." Peter Blanken, CU Boulder</p>
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<p>"What has changed though is my thinking about how to assess student learning. I can't say</p>
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I have come to a conclusion, but I have spent a lot of time thinking about the theoretical aspects of student learning and how to assess it. I am questioning the idea of student self-assessment. It's making me question a whole lot of things about my teaching. I am thinking about students learning and what helps them to learn. I am questioning myself – what do I want them to learn or to take away from my course?" Stefanie Mollborn, CU Boulder

"I feel like it has expanded my theoretical basis for my pedagogy. It has been intellectually stimulating. I have a broader view of learning now." Gail Armstrong, UCHSC

- ° PTLC participants have expressed changes in their perceptions and understanding, which is most often expressed through changes they have made in their classrooms. Researchers have begun to change the way they teach and the way they assess student learning. These changes in classroom practices are rooted in changes in how the researchers now understand student learning and assessment of student learning. Participants reflections on their practice have resulted in their utilization of classroom practices that are expected to benefit their students.

- ° Participants have also expressed changes in their perspectives.

"I would hope that the learning [in my classroom] would become more inclusive in the future." Suzanne MacAuley, UCCS

"I have been able to weave together my methods, processes, and conclusions. This project has helped me tie those ends together and create a really meaningful place for me as an educator. I understand so much better why I want to do this and I understand how to do it in a better way. It has been about refining, depending, and enriching my practice. Now I really get it. I really understand it. It's an entirely different level of consciousness in self-understanding in my own processes as a creative person and as an educator. I think everyone should have this opportunity. So many are suspicious, thinking that teaching can't be scientific and research-based. If everyone could experience one semester of this kind of engagement, it would be amazing." Judith Coe, UCD

"I realized, after talking to the medical evaluator Robin introduced me to, that I can encourage students more to participate in things like poster sessions here on campus. I had thought it was good just for them, but then I realized it will help us evaluate the program as well. So it's win-win." Lynne Bemis, UCHSC

"We have smaller classes and I think using clinical scenarios and problem-focused kind of teaching situations would make an interesting comparison to see if students come out in the end with the same knowledge they would if they were taught in a more traditional way. We should look and see if our traditional ways are good or if they maybe should be changed." Jane Kass-Wolff, UCHSC

"I have always understood Bloom's taxonomy, how students proceed up the cognitive ladder, but I've gotten much clearer about the way in which the outside experiences need to help feed in and ways to sort of trigger moments of dissonance, gently hopefully, to help them make a shift to seeing the world from a different perspective. I think, in many respects, the classroom boundaries have become much bigger and will probably continue to do so. When I first started teaching a long, long time ago I thought much more about just sort of the cognitive aspects. So that has been the big shift for me, to think about the student as a whole and what is going on outside the classroom and how that can be utilized in some sense." Kendra Gale, CU Boulder

"If not for PTLC, I wouldn't otherwise have professional dialogue with someone in music, literature, or writing. So it really provides a venue for ongoing interprofessional dialogue.

Before the PTLC, I had not been involved in cross campus work before. I work with a group trying to develop educational models but that is concerned only with the health sciences.” Gail Armstrong, UCHSC

“I have tried to do a little more this semester, but I have always tried to enlist students in this way. I guess I have been more explicit in why I am teaching them something. You know, telling them why we are doing something and why they might want to care about it or why it might be useful to them. So I have been trying to be more explicit about that. So that is a shift about trying to be more cognizant about them needing a structure.” Cindy White, CU Boulder

“My intent had been to help the PTLC to frame problems as research that had.... Well, to frame the work such that it is research that was clearly conceptually publishable work rather than just exploring things going on in teaching. I wanted to help set up scholarly work that could be peer reviewed and published. So my intent was to help start conversations that get away from reflective and exploratory work and toward strong publishable work. Administration needs to see this is a research group not a peer mentoring or teaching circle. We are not just exchanging ideas about teaching because that sort of thing doesn’t have the compelling legitimacy of peer reviewed research, which is what is going on in PTLC.” Debra Dew, UCCS

- Faculty researchers have also experienced changes in their perceptions of teaching and learning. They often speak of connections between their research and the research of others, and they have learned about these connections through conversations and by reading research about teaching and learning. One participant noted the “professional dialogue” that is offered to those in the PTLC, which she noted as being especially beneficial to her work. Researchers also spoke of a “shift” in their perceptions about students or of being “more cognizant” of the needs of students.

#### *Faculty Growth in their Educational Research*

- Faculty researchers in the 2008 PTLC cohort are in various stages along the continuum of growth in their research on teaching and learning. Based on a chapter by Weston and McAlpine (2001) in *New Directions for Teaching and Learning*, each faculty researcher has been placed into one of the three phases identified by the authors. Phase One is about researchers’ growth in their own teaching and is for researchers who have extended their knowledge about their teaching and about their students’ learning. In Phase Two is defined by researchers’ ongoing dialogue with colleagues about the topics teaching and learning. Here researchers are engaged in conversations with others and have become involved in
- In Phase Three, researchers have increased their scholarly knowledge about teaching and learning. They have moved beyond dialogue and have made their work public through publications and presentations.
- We found that two of the 2008 faculty researchers have achieved Phase Three along the continuum as defined by Weston and McAlpine (2001). Eight researchers are in Phase Two and are engaging in meaningful dialogues and collaborative work about teaching and learning. The seven researchers who are in Phase One are applying their knowledge about teaching and learning to their own classrooms.
- This report focuses on the first of two semesters of faculty researchers’ involvement with the PTLC. We hope to see movement along the continuum during the remainder of 2008 as the researchers continue their work with in the PTLC.

*Individual Campuses*

- Faculty believes their participation in the PTLC will change teaching, learning, and assessment of learning on their campuses.

- UCCS

<p>“Well, I think that as we learn more about how university students learn, we help them increase their learning. That is an asset to my campus.” Elaine Cheesman, UCCS</p>
<p>“Pedagogical practice is something we all value, so whatever we can learn from other people’s experiences is valuable. There aren’t too many opportunities for talking about how people teach. Something that could grow out of this is faculty opportunity to sit around and swap stories about how we teach.” Suzanne MacAuley, UCCS</p>
<p>“There are a number of things going on here now that make this appealing. One thing is that faculty senate is reviewing the definition of scholarship in relationship to tenure promotion and teaching and learning. This is a campus wide review and revision of the tenure promotion criteria. We are moving toward the Iowa model. At some point, it will come to a faculty vote. If they say yes to a broader and more inclusive definition of scholarship it will change a lot of things. I may have luncheons where people share their PTLC projects to let people know what scholarship means in relation to teaching and learning because I think people outside PTLC aren’t sure what that even means. It’s happening at the same time as this criteria review process. And both are aware of each other. The task force reviewing and revising these tenure promotion criteria knows about PTLC. They are both going on at the same time.” Debra Dew, UCCS</p>

- UCD

<p>“Well, I won the College of Art and Media award for excellence in teaching last year while I was in Ireland. Part of the reason for that is the work I have done with PTLC and how it has impacted my syllabus design and my FCQs. People in my college now know I am a good teacher but that there is more to it than that. They know there is a systematic thing going on with my teaching. Some of the younger assistant professors have been coming to ask me questions and to ask for help, and some want me to mentor them in projects they are doing. I don’t think anyone else in my college is doing anything like this and I don’t know why.” Judith Coe, UCD</p>
<p>“That kind of goes back to why I got involved in the first place, to build network across campuses and seeing teaching improve on the Denver campus. I am also interested in learning about assessing learning and in research going on in higher ed about higher ed. People are at the very least thinking about ways to assess and evaluate teaching. At a higher level, perhaps people are increasingly actually engaged in educational research. I think this is an important future, especially for DDC [Downtown Denver Campus].” Deborah Thomas, UCD</p>

- UCHSC

<p>“I am working on developing a curriculum with the person who sponsored me in the proposal for the collaborative. It would be a series of trainings. And I would want to know how to assess that class in the best way. That is a potentially large impact of my research because we expect about 100 people per year to be part of that training series.” Yvonne</p>
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Kellar-Guenther, UCHSC
“We are beginning to talk about having physician assistant students and the advanced practice nursing students go through the teaching associate training at the same time and to begin to evaluate that too at some point. Physician assistants start out at a very different place than nurses. Nurses already have experience in the nursing field. Oftentimes physician assistants have none. They may come in with a completely different degree. So to evaluate the clinical background or the nursing background or the medical background and whether it affects their ability to move through the advanced assessment course would be interesting.” Jane Kass-Wolff, UCHSC
“To some extent, yes, my campus will be impacted positively. Like with my project, once something is published in a journal, others may inquire about how to set up a program like this. If I find that our objectives met through the program that will bring interest in this program as a model for other programs.” Mary Jane Rapport, UCHSC
“Jane [Kass-Wolff] and Ernestine’s [Kotthoff-Burrell] work is potentially a study that could impact all the ways we use standardized patients with PTLC. Cathy Thompson’s work is looking at providing content via video streaming, and we do a lot of distance teaching in College of Nursing. Her work could have a lot of implications for that distance learning.” Gail Armstrong, UCHSC

o CU Boulder

“The students will benefit, for one thing. I guess just creating, in my case, an awareness of how important it is to improve the teaching. Not just a focus on research but to do research about the teaching. I can see the future impact though from me and from others collectively on my campus.” Alejandro Cremaschi, CU Boulder
“I plan to apply some of what I am learning to my other courses. I am also in the process of developing a faculty orientation program that brings in some of what I have learned, not necessarily through the PTLC but through physics engineering research and education research and try to put that together in a more coherent package for people who are starting out their teaching careers, specifically here in mechanical engineering. Then maybe we will expand. It could have a wide impact though I am not sure I can contribute that work to the PTLC.” Jean Hertzberg, CU Boulder
“I think ultimately it will make it better, it’s going to start raising the bar. In this program, as I said, there is a real strong emphasis on teaching, so I don’t think there are many people in this program at all who think we need to get the student stuff over with and just move on. But I think that more and more there is going to be attention drawn to it. I certainly hope that will happen.” Kedra Gale, CU Boulder
“I definitely think so. Not only the projects going on now, but my guess is that a lot of it happens because people are falling into it like I did. More and more people are getting engaged in it.” Stefanie Mollborn, CU Boulder
“If we find that there is a reason for why people don’t do well teaching a large class, we could offer concrete examples of things to do to improve teaching large classes.” Peter Blanken, CU Boulder
“I really think the potential is there. I don’t know the other projects very well though, partially because I couldn’t make it to the last meeting. FTEP has had a great impact on this campus, so I think PTLC has the same potential. FTEP has offered a new level of understanding of pedagogy that reaches across disciplines. FTEP has also offered new

information about curriculum.” Deborah Haynes, CU Boulder

- ° Faculty have expressed that they see each of the campuses experiencing growth in the educational research at each campus via faculty’s immersion in research that assessing learning and classroom practices. Though the PTLC is a system-wide collaborative, participants have clearly articulated the value they see PTLC bringing to each individual campus. They spoke of the emphasis on research about teaching and learning as improving teaching on their campuses through the systematic evaluation of teaching and learning. Several projects on the Health Sciences campus in particular are expected to impact other programs on those campuses.

*Value of the Progress Report Meetings*

- ° Faculty has repeatedly voiced enthusiasm about the Progress Report meetings that are held throughout the year.

“I live with an imagined audience most of the time, and I get kind of tired of it. So I look for opportunities to interact with other.” Suzanne MacAuley, UCCS

“I’ve certainly found it interesting and, in some cases, though-provoking hearing about what other people are doing.” Clayton Lewis, CU Boulder

“It was energizing and motivating to hear about the work of others.” Alejandro Cremaschi, CU Boulder

“This meeting today has been fascinating. I mean, I can’t wait for the next one. What it does is just stimulate me to improve what I am doing even in other classes. And it’s nice to see others who are struggling in the same way I am and to think about how to increase learning in the students. Like I was telling Noah [Finkelstein] today, we tend to teach in a very traditional way in the School of Nursing. I tend to think we need to begin to experiment and try new things. So PTLC is a very exciting opportunity and it has come at a really good time.” Jane Kass-Wolff, UCHSC

“I think that it’s really helpful to have other people to talk to about a project you are working on. And so the group meetings are useful for that and I guess for me it’s been good to have a mechanism to say that this is legitimate to work on. Though it’s not to say my department disregards research on teaching at all. I would say I am in a pretty supportive department in that respect, though other kinds of research are valued more. But people certainly do see it as legitimate to interrogate how learning works and how teaching works and so forth.” Cindy White, CU Boulder

- ° PTLC participants appreciate the regular Progress Report meetings that serve as a time for them to check in with their colleagues and to learn about research on teaching and learning. At the meetings, researchers are able to talk with their colleagues about the work in which they are engaged. They are also able to hear presentations by experienced scholars who talk about new ways to pursue research on teaching and learning. The interactions with fellow PTLC participants offer opportunity to have scholarly conversations about their own teaching, student learning, and the assessment of student learning.

*Support and Accountability*

- ° Faculty has said the PTLC provides support for their educational research that they had not found elsewhere.

“It’s kind of awkward going to faculty asking for help. But if they are part of this initiative,

then it's built in." Elaine Cheesman, UCCS
"It's not because I wouldn't have wanted to do it or that in some definite sense I would have lacked the means to do it, but I would have lacked the social support to do it. I find that it's important for me to yoke what I am doing to some sort of structure that makes me do it. So it accomplished that, so it was very successful in that way. And then the other thing was that I did get very valuable input from my mentors." Clayton Lewis, CU Boulder
"I had a project that I was already starting to collect data on, but I wanted some guidance and funding to improve and expand it." Anonymous survey response
"The most important aspect was to work with a mentor and coach. This also makes me work because there are deadlines" Alejandro Cremaschi, CU Boulder
"Pressure to publish quickly will be a good motivator." Anonymous survey response
"I would never have used Mitch Handelsman as a mentor without being involved with PTLC. It encouraged me to go out and look at other people in my own school who could help me. I think the most important thing that PTLC did for my project was actually to keep me moving on it. We have those fairly regular meetings. So, overachiever that I am, I didn't want to show up without anything done." Scott Grabinger, UCD
"This project is something I have been wanting to do for some time. So it was a good catalyst for me." Jean Hertzberg, CU Boulder
"It met my needs for the research that I wanted to do and the mentoring process was great." Anonymous survey response
"The main thing for me is that I wanted to do research on pedagogy and I didn't really know much about it. I was really, really drawn in by the idea of having a mentor. I wanted to do this project and had it mapped out in my mind already, but I didn't have the structure or the resources to make this project a priority. Meetings and having to report provide me with the structure I need to get it done. The PTLC is really helpful in that way for me." Yvonne Kellar-Guenther, UCHSC
"The mentoring and the coaching keep me moving along. So the structure and formality are kind of a means that would keep me going on this project. Otherwise it would probably be just another idea that I probably wouldn't do. This gave me the structure that I needed. Coaching and mentoring are key. I mean, that is what you get through this program that you don't if I just submitted this to a research proposal somewhere else. So getting access to the networking and the resources of the coaching and mentoring are huge. I like the tight deadlines for publication in a year. It's pressure to get things done." Peter Blanken, CU Boulder
"I also like the external deadlines the PTLC provides me with. It is helpful to have that rather than relying only on internal motivation." Stefanie Mollborn, CU Boulder
"I had a project that wasn't going anywhere and I thought this group would help me move it along." Anonymous survey response
"That is really the biggest impact so far is that it kind of has pushed me forward. I have worked on it and thought about it more often because of the PTLC. My personal goal was to get it done and published anyway, but the PTLC makes me more accountable. Plus I can talk to a coach and mentor and hire a research assistant. It has made this project rise higher up on priority list." Mary Jane Rapport, UCHSC
"Having the meetings helps to encourage me to get things done." Kendra Gale, CU Boulder
I chose to apply to the PTLC because of the "support for research in unfamiliar territory." Anonymous survey response

“The value of PTLC comes not only in the form of professional experience but also because of the helpful professional accountability. I mean, I knew I had to report to peers on regular basis.” Gail Armstrong, UCHSC

“The main thing for me was that I really wanted to do some more focusing on teaching and so this was an opportunity for me to formalize that. And both my role in my department and my own career development put me in a place where I thought by doing this I could make, yeah, I could make it more central to what I wanted to think about. And so PTLC could create a structure for me to do that. To have a structure, as I said to help me kind of work through the process and hold me accountable. I really also was looking for a place that offered opportunities to talk about learning and pedagogy on campus. This seemed to provide that.” Cindy White, CU Boulder

“The monthly meetings are useful for keeping the project on track.” Anonymous survey response

- Several participants said they would not have worked on their projects if they had not been part of the PTLC because of the system of support and accountability created by the Collaborative. The mentors and the coaches provided by the PTLC assist and encourage faculty in their research. Faculty has also said that the PTLC provides a system of accountability for them. The Progress Report meetings provide a specific time and place for them to report on their progress. Knowing they will have to report on their progress at an upcoming meeting and knowing they are on a one-year time line encourages faculty researchers to work on a regulated schedule and to make continual progress toward the goal of publication in a peer-reviewed journal.

*Disseminating Research Results*

- Participants in the Collaborative have published and presented research related to their PTLC project in a variety of settings. Appendix A contains a table that shows this information in further detail.
- In addition to publications and conference presentations, participants have disseminated information about their PTLC projects in conversations with other faculty, their departments, and others.

“I have talked to my entire college about this project, several times actually. I have talked to people when I gave workshops in Europe last year, in Ireland, Scotland, the UK, Italy, and Paris” Judith Coe, UCD

“I have talked to the editor of the online peer-reviewed journal, *Piano Pedagogy Forum* from the University of South Carolina. I have had maybe four of five conversations.” Alejandro Cremaschi, CU Boulder

“After I presented the idea that I am doing this research at that conference [American Physical Society, Division of Fluid Dynamics Annual Meeting] a couple of people came up to me and said they were interested in what I am doing and what happens.” Jean Hertzberg, CU Boulder

“We will probably begin to talk with the physician assistant program about combining the nurse practitioners and the physician assistants in training for the advanced assessment. And then I was also talking with Lynne Bemis about health disparities and she would like to pull nurses into that. So maybe we can begin to facilitate some of those collaborations too.” Jane Kass-Wolff, UCHSC

“I was at a teaching workshop a month or so ago. A bunch of us were invited to get together

and discuss issues about teaching introductory physical geography and that kind of stuff. And things like class size of course come up and other issues with large classes. I mentioned to that group what I was working on with PTLC. Instantly everyone was excited about it and wanted to know what I found. So yeah I have talked about it even outside the university.” Peter Blanken, CU Boulder

“I will at some point, probably in a month or so, probably do a mini-presentation at a faculty meetings. I have talked informally with some colleagues particularly those whose classes I am using as control groups for my class. Because we are an accredited program, we have to do assessment on particular kinds of issues so there has been conversation there particularly if I am going to start doing pre- and post-testing on a regular basis. We have been talking about ways we could feed that into some of the work that needs to happen with assessment here.” Kendra Gale, CU Boulder

“Sue Byerly from the library has a project inside our department. I am working with her to integrate this research and instructional subset into a research and writing course for freshman. So you could call that a collaborative. So she is working with her research project to teaching students information literacy, as it’s called. It’s about searching for and designing library research questions. It’s how you use the databases for research and how to use them most effectively and efficiently. I guess it’s like her teaching a mini course inside a writing course. Well, sort of an instructional unit inside a writing course. I direct the writing program and I have 20-some faculty who teach that course.” Debra Dew, UCCS

- PTLC participants have had numerous conversations about their projects in a variety of formats. This ground level or grass roots dissemination has spread information about the PTLC and about research on teaching and learning throughout the campuses and beyond. One participant has shared about her work in Europe, several have presented outside the university, and some have presented within their departments. Almost all participants have reported having at least a few conversations with fellow faculty members within their departments. Most who reported having conversations outside the PTLC about their PTLC projects reported having between 4 and 10 conversations.

*PTLC as a System-wide Collaborative*

- Researchers generally responded very enthusiastically when asked, “What different, if any, do you think it has made to you that PTLC is a system-wide collaborative?”

“I think it’s extremely important. We get to interact with people from different fields.”

“It makes a huge difference. It’s a bigger sandbox. There are lots of people in there. It’s fantastic to meet people throughout the system and to learn that each campus functions in different ways. It opens up your world.” Judith Coe, UCD

“I really think it’s important because it really expands the type of people and projects you are exposed to. It makes you think it’s more worthwhile because it is cross-campus work. It seems more important because we are involved with several institutions together. Being able to talk with people from other campuses is exciting. I like being exposed to things that are new. I mean, being involved exclusively in your own campus is almost incestuous. Cross-campus participation allows you get an idea of what is going on in other places. It expands my knowledge and my points of contact.” Scott Grabinger, UCD

“It broadens my perspective. I never think of the social sciences, so now I have them in sight. I just would never been exposed to something in those fields. My whole school is health sciences.” Lynne Bemis, UCHSC

<p>“We have so many different disciplines in here that I just see so much capability or ability for us to work in an interdisciplinary way with other schools.” Jane Kass-Wolff, UCHSC</p>
<p>“I think it’s certainly been interesting to hear what has come up in health sciences or whatever, the way in which they are different and the way in which they are the same.” Kendra Gale, CU Boulder</p>
<p>“I am able to meet people from a lot of different places. They are doing all different things. I am hearing about the creative energy going into teaching and learning.” Mary Jane Rapport, UCHSC</p>
<p>“To have professional exchange with other faculty on other campuses is great. To be honest, I think it’s a really, really important aspect of the PTLC. The Health Sciences Center was almost like a satellite campus that couldn’t be part of the larger CU community before, though our move has changed some of that. But still, being on PTLC gives me the opportunity to talk with people from other campuses. It gives me a much more expansive university. It has been really rewarding. Mary Ann invited me to an ISSOTL [International Society for the Scholarship of Teaching and Learning] conference in Wisconsin. We had some really interesting dialogue about teaching and culture on the different CU campuses. Being on PTLC gives me a whole different sense of being part of university faculty.” Gail Armstrong, UCHSC</p>
<p>“This is the first time I have worked with someone from another campus. I think that is a fantastic dimension of it. But it does make it a little harder for us to get together. Oh, and I should say that meeting Rod Muth at the Denver campus has been fantastic. He is very knowledgeable.” Deborah Haynes, CU Boulder</p>
<p>“Most specifically, I have gotten to know people from across the system. That is one thing this project does is get people out of our own little holes and outside our own individual disciplines. I have made contacts with others and I have learned about the CU system. I have goals of talking to and working with people from across the system. It’s good for people from UCCS to talk with people from Boulder. It has been amazing. I would love for us to use some of their ideas, like the woman in Calculus at Boulder who has improved the rate of students passing the course. That is amazing work. We could use more of it here at UCCS. I think of it as cross-pollination in terms of teaching and learning we can share across the institution. And of us not being in competition with each other.” Debra Dew, UCCS</p>
<p>“I think this is important for interaction and seeing what is happening on other CU campuses. However, it is a challenge for pairing people between campuses, I think. We are all so busy and trying to make it to another campus is challenging.” Deborah Thomas, UCD</p>

- Participants responded positively when asked whether the system-wide aspect of the PTLC has affected them or their work individually. They spoke of the value of being exposed to new ideas and gaining a broadened perspective. Participants said they enjoyed meeting new people and gaining new contacts for future collaborations. They also mentioned the benefits from having “professional exchange with other faculty on other campuses” because they sometimes feel separated on their individual campuses.
- Researchers also responded positively when asked, “More generally, how does the value of the PTLC relate to or depend on its being a system-wide collaborative?”

<p>“It’s the idea of collaboration across distance, with the PTLC acting as a nexus.” Suzanne MacAuley, UCCS</p>
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<p>“The value absolutely comes from it being system-wide. My mentor is recognized widely for her research. Here at UCCS, all the tenured professors haven’t published because they don’t have to. They don’t help us, they can’t help us. But Boulder is a Research 1 university, so they have great people there.” Elaine Cheesman, UCCS</p>
<p>“As a system-wide collaborative, there are enough people involved to make it work. There is not the critical mass to make something like this go, yet, on any one of the campuses.” Clayton Lewis, CU Boulder</p>
<p>“I think the system-wide part of it... I think you should always be thinking outside your own institution. Because of the way our system is set up, our campuses are very separate. We don’t think of ourselves as part of a system even. It’s hugely important for a place like Colorado Springs to be involved because they are even smaller I think. I think PTLC is a very important place for us each to feel important. Some of the tensions between the Denver campus and the Health Sciences campus could possibly be alleviated. Most people don’t understand the work we do, and we don’t understand their work. This could bridge some of that.” Lynne Bemis, UCHSC</p>
<p>“Oh, it absolutely benefits from being system-wide. For one thing, a lot of us don’t know what is happening on those other campuses and we don’t know people on them either. We become very insulated in our own campus. I think it’s been very helpful to me to begin to converse with people from other disciplines.” Jane Kass-Wolff, UCHSC</p>
<p>“For whatever reason, it is almost like four different universities. You know, we really don’t talk to each other. So we almost... Even though we are under the same system, we almost operate in isolation.” Peter Blanken, CU Boulder</p>
<p>“I think the system-wide initiatives are really good. We can all get a better understanding of how things work when we can see across campuses and across programs.” Mary Jane Rapport, UCHSC</p>
<p>“I think it would be a real loss if it were to be isolated on each campus. The richness is from a variety of disciplines. Really the teaching process is remarkably similar across disciplines and across departments. We have every rank of faculty in this collaborative too. But really the nature of the educational questions crosses all those differences.” Gail Armstrong, UCHSC</p>
<p>“I think it does help to build bridges across the campuses. Like other system-wide programs, I think it is very important for us to get together even though we usually exist on our own campuses. We isolate and forget we are one system.” Deborah Haynes, CU Boulder</p>
<p>“These interactions are really important and provide a great deal of different perspectives and examples.” Deborah Thomas, UCD</p>
<p>“Yes, absolutely because you need outside perspectives from people at different institutions. There are a variety of projects that in some ways speak to things other of us know about and in some ways are different. It can help us learn about things that we can transfer to our own campuses.” Debra Dew, UCCS</p>

- Participants also responded positively when asked about how the PTLC as a collaborative is strengthened by being system-wide. They mentioned the isolation of the individual campuses and how much more diverse and rich the PTLC’s work is because of the variety of perspectives. For example, Boulder has a strong tradition of research, while the other campuses do not necessarily share that emphasis.

*A Model Collaboration: Enthusiasm for the PTLC*

- ° Faculty participants have been extremely vocal in their enthusiasm for the PTLC.

“It has been rewarding to have an ongoing discussion about the scholarship of teaching and learning with colleagues from so many diverse departments within the University.” Anonymous survey response
“I like the feeling of being part of a group.” Suzanne MacAuley, UCCS
“The program is great. I have had great communication with my coach and mentor.” Elaine Cheesman, UCCS
“The big thing actually was being able to publish the results, to carry out the project, gather the data, analyze it, and then actually bring it to fruition. So, that stands out. I feel good about it.” Clayton Lewis, CU Boulder
“I’ve learned about the impressive knowledge and research skills of my colleagues – inspiring!” Anonymous survey response
“It’s nice to have other people who are interested in what I am doing to talk to about it. That’s kind of the basis of a lot of things. And so it provides a community and it provides a little bit of recognition so I can tell my chair that I have a grant to do this and therefore it is okay for me to devote time to it. It gives it a bit of validation as well. There is a community within the PTLC, people I can talk with about what I am doing. I am definitely enjoying it. It’s providing good support structure.” Jean Hertzberg, CU Boulder
“I think it’s better than I ever expected. It’s just pretty cool to know that this is going on.” Lynne Bemis, UCHSC
“I think the more people out there who come through this program the more impact it will make on university. When I finish with this I will strongly encourage others within our school to take advantage of this. The more we can be stimulated and learn, the more we can impart to our students too. I am really excited about all of this.” Jane Kass-Wolff, UCHSC
“I think in some ways I am kind of an archetype that joins the PTLC in that I am not a researcher by training. I have a clinical background and I am a clinical educator. But I have also had questions about my teaching for a long times. I wanted to do pilot work on own classes but I am not a formal researcher so not part of my job per say. Still I was very interested in investigating teaching and my teaching in particular. I wanted to ask questions that are supported by the PTLC. So you could say that it was a good fit. I had been involved in a couple of educational research projects previously but not as the PI [Primary Investigator].” Gail Armstrong, UCHSC
“The main thing is that I have found a like-minded community of people who are thinking about how students learn. That is what I love about PTLC. We can learn from people across a variety of disciplines. We can have these conversations where we are almost talking past each other because what we are talking about is so different, but really it’s great to interact and get to talk through these types of ideas.” Stefanie Mollborn, CU Boulder
“I was very excited when I heard about PTLC because it is the first time in the state of Colorado that I saw something that promotes ideas like what Boyer writes about in <i>Teaching Reconsidered</i> [actually <i>Scholarship Reconsidered</i> ]. It is exactly what I wanted to do. Most universities don’t recognize this as legitimate intellectual work. For most, only research in the discipline is valued. But for me, much of work I do fits this collaborative completely.” Debra Dew, UCCS
“Keep doing what you’re doing – it’s great!” Anonymous survey response

- Participants have repeatedly emphasized how unique PTLC is within the University of Colorado system. Nowhere else is there a program with an emphasis on scholarly research of teaching and learning. Participants receive benefits from the Collaborative that they have not found elsewhere within the system. They have enjoyed being part of a group, receiving support from mentors and coaches, and being able to complete their educational research projects.

## Discussion

### *Changes in the Program*

- The Call for Proposals for the 2009 PTLC cohort will contain more specific information about the commitment required to be part of the PTLC. Those who apply will be committing to attending monthly meeting on Wednesday afternoons at the Anschutz UCHSC campus. The Call for Proposals will also emphasize that faculty research projects should focus on assessing student learning so there is no confusion about the intent of the Collaborative.
- Mentors and coaches will be encouraged to hold at least “team meetings” with their faculty researchers so all three team members will be able to talk together about the researchers’ individual projects. These team meetings will be in addition to PTLC Progress Report meetings and should take place at least one time per semester.

### *Recommendations*

- Because of the large number of publications and conference presentations that have resulted from the research on teaching and learning from faculty participation in the PTLC, we recommend continuation of the program. Participants are engaging in scholarly work in the form of research dissemination and professional dialogue about teaching, learning, and the assessment of learning.
- Many faculty researchers have requested travel funds to present their research at conventions. Unfortunately, the PTLC is unable to meet all of these requests and must instead fulfill only a small number of requests in limited ways. An increase in travel funds would aid researchers in disseminating their research on teaching and learning to a wider audience.
- Progress Report meetings will continue to be held regularly during the spring and fall academic semesters. Participants appreciate monthly meetings because they provide additional structure and motivation for researchers to continue to persist in their work in a timely manner.
- Semi-annual reports will continue to be produced to show University of Colorado leadership the progress of the PTLC in developing educational research scholars and in disseminating research about teaching and learning.

### *Conclusions*

#### ***How do professors best increase their understanding of pedagogy and learning via participation in the PTLC program?***

Because of their PTLC involvement, faculty spend time reading literature on teaching and learning. Participants also hear presentations about educational research at CU, such as when Physics Professor Noah Finkelstein presented at a PTLC Progress Report meeting this spring semester. Also during Progress Report meetings, PTLC faculty researchers participate in small-group and large-group discussions of their PTLC research projects during Progress Report. Thus,

faculty are able to learn about various perspectives of educational research and apply new concepts in their own classrooms.

***How does PTLC research spread to other faculty beyond the Collaborative?***

The PTLC has affected individuals beyond those involved directly with the Collaborative. Three faculty participants (two from UCCS, the other from UCHSC) stated that Boulder is the hub of research for the university system, and the system-wide aspect of the collaborative has been of particular importance to them as researchers. One stated that they appreciated being involved with a system-wide initiative because it offers access to “widely recognized” researchers from the Boulder campus. Another noted some innovative teaching methods being used in Boulder that could strengthen teaching at UCCS.

Researchers, mentors, and coaches who are PTLC participants have had numerous interactions with peers outside the PTLC about their research projects. Some of these interactions have been in informal settings such as conversations and some have interacted with fellow faculty by giving presentations about their research at faculty meetings. In addition, many PTLC participants have published articles or given presentations at conventions.