

University of Colorado's President's Teaching and Learning Collaborative (PTLC)
Progress Report, Fall 2009
Carnegie Academy for the Scholarship of Teaching and Learning

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Executive Summary

The University of Colorado President's Teaching and Learning Collaborative (PTLC) is an extension of work begun as an institutional participant in the Campus Program of the Carnegie Academy for the Scholarship of Teaching and Learning (CASTL), 2006-2009.

Context

The University of Colorado has four universities, the University of Colorado at Boulder, the University of Colorado at Colorado Springs, the University of Colorado Denver Downtown Denver Campus, and the University of Colorado Denver Anschutz Medical Campus. The President's Teaching and Learning Collaborative 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 President's Teaching Scholars Program recognizes exemplary teaching and research in faculty members on all four University of Colorado campuses. 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 four universities and was founded by the University President's Teaching Scholars Program, both the sponsor of the Collaborative and the original fundraiser.

Importance of Assessing Learning in Undergraduate Education

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 to higher education 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. The PTLC faculty researchers work on research projects that aim primarily at assessing student learning at the undergraduate level. Work of this kind can increase retention, student satisfaction, and student success, leading to increased support for the University of Colorado.

Goals of the PTLC

The goals of the PTLC are to promote research on assessing classroom learning and scholarly teaching in an effort to improve teaching, learning, and classroom assessment in undergraduate and graduate education (including professional schools) and to publish research in a refereed journal (see Index).

Impact on Teaching and Learning:

- Faculty researchers have garnered new perspectives on teaching and learning.
- Participants have made changes to their pedagogy and plan to make more changes in the near future.
- Many faculty researchers have undertaken projects that assess particular teaching methods. The results of their projects may lead to further changes in their curriculum or teaching practices.

Impact on Faculty: The Effect of the PTLC on Research Projects

- Many faculty researchers said they would not have pursued research on teaching and learning without the support of the PTLC.
- Most faculty researchers reported that they view the regular progress report meetings as beneficial and enjoyable.
- Most participants had never undertaken research on teaching and learning, and some had not completed research with human subjects before at all. The PTLC works to provide information about education research to participants, and many have noted that the resources of the PTLC fill their need for such information.
- One particular resource the PTLC provides is a support system of experienced researchers to guide faculty researchers in their work. We assign a coach (an experienced education researcher) and a mentor (a disciplinary expert) to each faculty researcher.
- All participants have been enthusiastic about their work with the PTLC this semester. Many have expressed their enjoyment of the project and how beneficial they think their experience has been so far.

Toward Future Directions

- Faculty researchers have produced far more publications and given more conference presentations than we are able to feature in this report. We have now created a separate document, the PTLC Index, to track information about the dissemination of PTLC research projects.
- Faculty researchers have expressed their appreciation for presentations by guest speakers at PTLC progress report meetings. In response, the PTLC scheduled a faculty speaker for each of the 2009 progress report meetings.

Conclusion

The Carnegie Foundation for the Advancement of Teaching has a new president Anthony S. Bryk, with new priorities. Although the directorship has changed from Lee Shulman to Anthony S. Bryk, the University of Colorado and other research institutions are still part of the Carnegie foundation. It is likely that national activities of the scholarship of teaching and learning will soon reside in the International Society for the Scholarship of Teaching and Learning (ISSOTL) currently based at Indiana University. In any case, the University of Colorado President's Teaching and Learning Collaborative will continue to develop and strengthen as more University of Colorado faculty participate and continue to research and publish on scholarly teaching in their disciplines. The PTLC is committed to establishing the University of Colorado as a leader in research on teaching and learning (see Appendix for PTLC Goals 2008-2011).

Overview of the President's Teaching and Learning Collaborative

The University of Colorado President's Teaching and Learning Collaborative (PTLC) is an extension of work begun as an institutional participant in the Campus Program of the Carnegie Academy for the Scholarship of Teaching and Learning (CASTL), 2006-2009.

Context

The University of Colorado has four universities, the University of Colorado at Boulder, the University of Colorado at Colorado Springs, and the University of Colorado Denver. The latter was formed recently by merging a previously separate campus in downtown Denver with the Health Sciences center. The President's Teaching and Learning Collaborative 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 President's Teaching Scholars Program recognizes exemplary teaching and research in faculty members on all four University of Colorado campuses. The Steering Committee for PTLC includes faculty from all four universities. Funding for the program comes in part from the system president's office and in part from chancellors of the four universities and was founded by the University President's Teaching Scholars Program, both the sponsor of the Collaborative and the original fundraiser.

Importance of Assessing Learning in Undergraduate Education

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 to higher education 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 Boulder's physics education in particular has shown, improvements in teaching driven by ongoing assessment of student learning can have true 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 University of Colorado.

The PTLC faculty researchers work on research projects that aim primarily at assessing student learning at the undergraduate level. The PTLC does involve professional schools as well (e.g., Pharmacy, Nursing, Education). Through their research on teaching and learning along with course changes in instruction and curriculum, the program is improving the undergraduate and graduate learning experiences at the university. This occurs 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.

Support for Faculty Researchers

PTLC recruited faculty investigators for research projects on teaching and learning at each university through a call for proposals (see Appendix). Investigators are supported by coaches (faculty knowledgeable about the educational 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, both issues and successes.

Institutional Support

Faculty researchers are supported by funding that allows them to hire student research associates. Faculty researchers are free to choose their assistant, who may be a graduate or undergraduate student. Research associates aid faculty researchers in data collection and analysis, to name two.

Travel funds are also offered to faculty researchers. Faculty researchers must complete an application. Funds typically support researchers attending discipline specific conferences to formally present their PTLC research projects as scholarship and to represent the university.

Development across Campus Boundaries

A product of PTLC in the system is that faculty at all four universities have the opportunity to carry out research in teaching and learning projects with collegial support, often for the first time. Faculty from all four universities participated in a pilot program in 2006 that led to the launch of PTLC in 2007 and established the program. It is 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 on any one campus.

Some PTLC participants have suggested that the program should present itself as much as an activity of the separate universities as a system-level program. They believe that some faculty members are 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 PTLC distributed leadership model suggests both campus and system collaborations. The distributed leadership model includes campus faculty directors who act as liaisons for each of the campuses. Program director Mary Ann Shea maintains contact with the campus faculty directors who are expected to be in direct contact with the PTLC faculty researchers on their respective campuses. The PTLC’s current faculty directors come from a variety of disciplines:

University of Colorado at Boulder

- **Computer Science:** Professor Clayton Lewis
- **Sociology:** Stefanie Mollborn

University of Colorado at Colorado Springs

- **Geography and Environmental Studies:** Professor Thomas Huber
- **Teaching and Learning Center:** Professor Kathy Andrus
- **Visual and Performing Arts:** Professor Suzanne MacAulay

University of Colorado Denver, Anschutz Medical Campus

- **School of Medicine:** Professor Robin Michaels
- **School of Pharmacy:** Professor Christopher Turner

University of Colorado Denver, Downtown Denver Campus

- **Education and Human Development:** Professors Rod Muth and Ellen Stevens

The collaborative promotes distribution of informational resources. In the spring of 2008, librarians from two of the universities collaborated to identify and present library resources in education research for the participants. An experienced teaching and learning researcher presented on educational theory from the University's Boulder campus. It is unlikely that participants from the other universities would have had access to such information outside the PTLC framework. These presentations were repeated in the spring of 2009 as well, and will be repeated for each new incoming cohort of faculty researchers.

So far there have been only a few collaborations among researchers across university boundaries. There have been a few cross-university contacts outside the group meetings. More sustained interactions are developing. Participants have indicated they hope to witness or be part of "cross university" collaborations in the future. Participants report that they greatly enjoy descriptions of varying student 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 little data thus far that having attendees from the different universities is uniquely valuable in teaching and learning, but it is valued in relation to understanding our campuses' visions and students. In theory, an education research activity at any one university could possibly draw nearly the same range of disciplinary participation. But 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.

Breadth of the PTLC

The President's Teaching and Learning Collaborative (PTLC) is a University of Colorado system-wide program that serves faculty at four campuses: CU-Boulder, CU-Colorado Springs, UC Denver Downtown Denver Campus, and UC Denver Anschutz Medical Campus. The faculty researchers from 2006 through 2009 have come from a variety of disciplines:

University of Colorado at Boulder

- **Applied Mathematics:** Professor Mary Nelson
- **Art and Art History:** Professor Deborah Haynes
- **Astrophysical and Planetary Sciences:** Professor Michael Shull, Professor John Stocke
- **Civil, Environmental, and Architectural Engineering:** Professor Paul Chinowsky
- **Communication:** Professor Cindy White
- **Computer Science:** Professor Clayton Lewis
- **Ecology and Evolutionary Biology:** Professor John Basey
- **Education:** Professor Susan Jurow
- **Electrical and Computer Engineering:** Professor Alan Mickelson
- **English:** Professor Mary Klages
- **Geography:** Professor Peter Blanken
- **Integrative Physiology:** Professor Janet Casagrand and Professor Robert Hermanson
- **Journalism and Mass Communication:** Professor Kendra Gale
- **Mechanical Engineering:** Professor Michael Hannigan; Professor Jean Hertzberg; Professor Shelly Miller

- **Music:** Professor Alejandro Cremaschi
- **Sociology:** Professor Stefanie Mollborn
- **Spanish and Portuguese:** Professor Anne Becher
- **Writing and Rhetoric:** Professor Anne Bliss, Professor Erik Ellis, Professor Rosalyn Zigmund

University of Colorado at Colorado Springs

- **Chemistry:** Professor Allen Schoffstall
- **Education:** Professor Elaine Cheesman
- **English:** Professor Debra Dew
- **Geography and Environmental Studies:** Professor Brandon Vogt
- **Kramer Family Library:** Professor Sue Byerley
- **Mathematics:** Professor Gene Abrams, Professor Radu Cascava
- **Visual and Performing Arts:** Professor Suzanne MacAulay, Professor Curtis Smith

University of Colorado Denver

- **Business:** Professor Kenneth Bettenhausen
- **Communication and Evaluation:** Professor Yvonne Kellar-Guenther
- **Education and Human Development:** Professor Scott Grabinger, Professor Rodney Muth
- **Mathematical & Statistical Sciences:** Professor Diana White
- **Medicine:** Professor J. John Cohen, Professor Joe Huggins, Professor Lynne Bemis, Professor Jeffrey Druck
- **Music and Entertainment Industry Studies:** Professor Judith Coe, Professor Chris Daniels, Professor Storm Gloor, Professor Sean McGowan, Professor Paul Musso
- **Nursing:** Professor Gail Armstrong, Professor Gayle Preheim, Professor Jane Kass-Wolff, Professor Ernestine Kotthoff-Burrell, Professor Mary Jane Rapport, Professor Cathy Thompson, Professor Jacqueline Jones
- **Pharmacy:** Professor Christopher Turner, Professor Brian Hemstreet, Professor Wesley Nuffer
- **Psychology:** Professor Richard Allen

Goals of the PTLC

The goals of the PTLC are to promote research on assessing classroom learning and scholarly teaching in an effort to improve teaching, learning, and classroom assessment in undergraduate and graduate education (including professional schools) and to publish research in a refereed journal (see Index). Thus the PTLC promotes the scholarship of teaching and learning, the “creation and dissemination of original work that makes a useful contribution to knowledge and practice of other teachers” (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 Foundation coaching process) and mentors (faculty with expertise in the disciplines being examined). Beginning with that first cohort, not all mentors and coaches were

from the faculty researchers' campus. Thus, new and interdisciplinary networking between campuses began. Participant-researchers received modest funding for student researchers to support data collection and analysis. The funding came from two sources: the program and campus provosts. In addition, researchers received partial funding for travel to discipline conferences, where they disseminate their professional work and contributions in educational research publicly.

Participant-researchers meet with coaches and mentors and attend whole group progress report meetings on several occasions during their year with the Collaborative. The purposes of the meetings were:

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

While the meetings, establishing personal connections, and discussing teaching and learning are the foremost resources provided by the PTLC, additional resources include:

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

Through our campus faculty directors, we have created a structure that can support faculty researchers on each campus by symposia and workshops, group meetings with researchers, and meetings with researcher-coach-mentor triads. Faculty researchers are also important to institutional change. One way they affect their colleagues is through their involvement in policy and administration.

Change within the Collaborative

The intent of the PTLC and of the Carnegie Foundation is to support and promote research and scholarship in specific aspects of learning and teaching in the disciplines. The research questions are focused primarily on teaching and learning, not on the development of education 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 teaching in their discipline and their students' learning. Research in pedagogy informs teaching practice and is based on data analysis. Professors then refine their teaching, their course curriculum, and how they assess student learning to design ways to specifically assess learning in units of the course. The research adds new knowledge in a specific area of pedagogy and learning, thereby contributing to the research literature while developing a community of practice.

Central PTLC Activities of the 2009 Cohort

The 2009 cohort reconvened for the fall semester on September 16, 2009. Professor Jennifer Knight of the Boulder Campus's Department of Molecular, Cellular, and Developmental Biology presented her research on teaching and learning. Professor Knight spoke with meeting participants about her experiences with and the results from her classroom research. After the presentation, participants met in small groups to discuss the progress of their research projects. The meeting was attended by 7 faculty researchers and 9 others (director, research assistant, campus faculty directors, coaches, and mentors).

The 2009 cohort met for the final time on November 12, 2009. Professor Chris Turner of the Anschutz Campus's School of Pharmacy spoke about being a scholar of teaching professor. After Professor Turner's presentation and discussion, faculty researchers reported to the whole group about their work on their research projects (see PTLC 2009 Project Summary Slides document). Ten faculty researchers and nine others attended the meeting.

Evaluation

Formative and Summative Evaluation Questions

Evaluation research questions included the following:

1. How do professors best increase their understanding of pedagogy and how do students learn via participation in the PTLC program?
 - a. How does the PTLC program help professors understand their function and roles as teachers?
 - i. How does the PTLC program help professors define their role as teachers?
 - 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 concepts 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 improve the academic achievement of their students?

This report is organized around themes the report's authors discovered in the qualitative data with quotations drawn directly from interviews 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 education 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 education research projects.

Evaluation Method

Qualitative and quantitative data for this evaluation have come from interviews and observations of participants in PTLC meetings. Participants were self-selected for the interviews: not all chose to be interviewed. Seventeen interviews were conducted (see Appendix for interview questions and transcripts). Data were 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, some edited for clarity, have been included in this report.

Relevant Findings: PTLC 2009 Cohort

Faculty Growth in Educational Research

- Faculty researchers in the 2009 PTLC cohort are in various stages along the continuum of growth in their research on teaching and learning. Based on work by Weston and McAlpine (2001) in *New Directions for Teaching and Learning*, we find each faculty researcher in one of the three phases identified by the authors.
 - **Phase One** describes researchers' growth in their own teaching and illustrates researchers who have extended their knowledge about their teaching and about their students' learning.
 - **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 collaborative work in specific topics in teaching and learning.
 - In **Phase Three**, researchers have demonstrated their increased scholarly knowledge about teaching and learning through dissemination of their scholarship. They have moved beyond dialogue and have made their work public through publications and presentations.
- Based on interviews with and presentations by PTLC researchers, we have made determinations about where the 2009 faculty researchers lie along the continuum as defined by Weston and McAlpine (2001).
 - In Spring 2008, we had 7 researchers in Phase One, 8 in Phase Two, and 2 in Phase Three.
 - In Fall 2008, we determined that all of the 2008 faculty researchers had moved beyond Phase One, 12 were in Phase Two, and 5 had achieved Phase Three.
 - In Spring 2009, we saw 6 researchers in Phase One, 9 in Phase Two, and 6 in Phase Three this semester.

- At the conclusion of the Fall 2009 semester, we find that 2 of the 2009 faculty researchers are in Phase One, 11 are in Phase Two, and 8 are in Phase Three.
- This report focuses on the second of two semesters of faculty researchers' involvement with the PTLC. We are pleased to have seen movement along the continuum as researchers continued to participate in scholarly teaching in their discipline.

Impact on Teaching and Learning: The Effect of the PTLC on Education at the University

- Faculty researchers are working to **improve student learning** on all campuses, and they have mentioned a variety of ways that their research will benefit students. Participants have also talked about the changes they have made to their pedagogy and about changes they may make in the near future.
 - "The PTLC has absolutely challenged me to think more about learning. This whole project is about assessment, so I am certainly focusing on assessing student learning." Wesley Nuffer, UC Denver, School of Pharmacy
 - "I think it's already affected my students and their learning. I am asking my students to reflect on their progress in an active way through periodic recording, self observation, and written reflections." Sean McGowan, UC Denver, Music and Entertainment Industry Studies
 - "I believe a future student will have the benefit of alumni feedback. By alumni, we think of nice people in coats and ties who give money. I am going after a new vision though. My vision of the alumni is of people working in the industry. Future students will have the benefit of a feedback loop." Chris Daniels, UC Denver, Music and Entertainment Industry Studies
- Faculty researchers have told us about the **new perspectives on teaching and learning** they have garnered through their PTLC involvement.
 - "The most significant thing is that I have used this project as a learning tool for my own teaching. It forced me to think deeply about these things as they pertain to the students' needs. This project has increased my understanding about what the students understand and how they learn." Sean McGowan, UC Denver, Music and Entertainment Industry Studies
 - "My work with the PTLC has changed the way I am doing some things. It has forced me to write a book. I just realized all the material out there is so drastically dated." Chris Daniels, UC Denver, Music and Entertainment Industry Studies
 - "I have been thinking more about learning. I have been thinking specifically about how to help my students learn more and learn better. I think the overall program has really elevated my perception of teaching to a whole different level. It really can be thought of in a scholarly way." Shelly Miller, CU-Boulder, Department of Mechanical Engineering

Impact on Faculty: The Effect of the PTLC on Research Projects

- We asked faculty why they submitted a project proposal to the PTLC, and many commented on the **structure of the PTLC**. They noted that they needed the structure of regular meetings and the support of PTLC resources to engage in research on teaching and learning.
 - Many faculty researchers said they would not have pursued research on teaching and learning without the support of the PTLC.

- “I don’t know that this idea any would have gotten anywhere without the PTLC.” Janet Casagrand, CU-Boulder, Department of Integrative Physiology
- “I am not sure I would have worked on this project at all.” Shelly Miller, CU-Boulder, Department of Mechanical Engineering
- Most faculty researchers have reported that they view the regular progress report meetings as beneficial and enjoyable.
 - “Having to stay on a timeline and having to give you feedback has helped keep me motivated. PTLC has showed me that this actually isn’t that hard. I understand the process now.” Wesley Nuffer, UC Denver, School of Pharmacy
 - “It’s good to have the motivation of knowing I have just one year to do this. It has forced me to focus on the project. I appreciate the support the PTLC has provided.” Janet Casagrand, CU-Boulder, Department of Integrative Physiology
 - “It was powerful and inspiring to hear everyone talk about their projects. It was great to hear what they are all doing.” Sean McGowan, UC Denver, Music and Entertainment Industry Studies
 - “I hate to miss the meetings because they are fun and energizing.” Storm Gloor, UC Denver, Music and Entertainment Industry Studies
- Most participants had never undertaken research on teaching and learning, and some had not conducted research with human subjects before at all. The PTLC works to provide information about education research to participants, and many have noted that the resources of the PTLC fill their need for such information.
 - “What stands out the most is the process of putting together the project. I ran into all these logistics of what is necessary. There were just so many logistical problems regarding assessing learning that I did not anticipate. For example, COMIRB was daunting, but I was helped through it.” Wesley Nuffer, UC Denver, School of Pharmacy
 - “The HRC presentation and the library presentation were great.” Shelly Miller, CU-Boulder, Department of Mechanical Engineering
- One particular resource the PTLC provides is a support system of experienced researchers to guide faculty researchers in their work. We assign a coach (an experienced education researcher) and a mentor (a disciplinary expert) to each faculty researcher. Some participants commented generally on the assignment of coaches and mentor to faculty researchers as a helpful resource. Other faculty researchers named their particular coach or mentor as someone who has been especially valuable within this research process.
 - “I asked Joannie Dunlap to be my mentor. I did not know her before, and I literally did not know what I was getting myself into. Joannie and I talk about teaching more than anything else.” Storm Gloor, UC Denver, Music and Entertainment Industry Studies
 - “Gretchen reviewed the paper and gave suggestions. She was also involved in data analysis. She helped me to think of some good ways to analyze the data. Gretchen was very helpful throughout the research, analysis, and writing process.” Mary Jane Rapport, UC Denver, School of Medicine

- Many participants have stated that they **appreciate the PTLC as a system-wide collaborative**.
 - “It is great to be part of something that reaches across so many disciplines.” Janet Casagrand, CU-Boulder, Department of Integrative Physiology
 - “The diversity of the people within the group makes you have a much better perspective. I am always a believer in broadening our perspectives by interacting with people outside our own immediate environments. People in music and education are so far away from the type of work I usually do. There are themes that carry across the disciplines, and one is that it turns out that we are all interested in improving students’ learning.” Wesley Nuffer, UC Denver, School of Pharmacy
 - “Meeting new people from different areas has been important.” Storm Gloor, UC Denver, Music and Entertainment Industry Studies
- All participants have been **enthusiastic about their work with the PTLC**. Many have expressed their enjoyment of the project and how beneficial they think their experience has been.
 - “I just really appreciate having been involved in this process. It’s been a really good growth opportunity, and I am really excited about this project. I am really glad I was able to do it.” Janet Casagrand, CU-Boulder, Department of Integrative Physiology
 - “You all are so helpful. I cannot compliment you enough.” Chris Daniels, UC Denver, Music and Entertainment Industry Studies

Recommendations: Ways to Improve the PTLC

- Participants have expressed the **need to raise awareness of the PTLC** on all campuses. This awareness relates to recognition of the value of PTLC research projects in addition to wanting to encourage more faculty members to apply to be part of the Collaborative.
 - “The PTLC needs a marketing department. Person to person contact has been how it has worked, but you need greater visibility. I don’t think mass emailing will work.” Wesley Nuffer, UC Denver, School of Pharmacy
 - “Maybe each campus could report on the SOTL research being done. That might attract more interest. You could also have each department highlight SOTL research on their websites.” Janet Casagrand, CU-Boulder, Department of Integrative Physiology
 - “I think departmental chairs have to push this as hard as possible. A personal invitation to the program would be good.” Sean McGowan, UC Denver, Music and Entertainment Industry Studies
- We have also received **other comments about changes** that could be made the various aspects of the PTLC.
 - “I am wondering if there is a way to have more local, on-campus resources. That could include brown bags or conferences. A way to chat with people on a more routine basis would be helpful. The Air Force Academy has a whole department or SOTL program with a library and people to talk with about how to work on projects. That would be so great on this campus.” Janet Casagrand, CU-Boulder, Department of Integrative Physiology
 - “She should tell us immediately that we will need IRB approval. That could be distilled into her short presentation at the very beginning. Simplification would be helpful. That

is my only criticism.” Chris Daniels, UC Denver, Music and Entertainment Industry Studies

- “The meetings are great. Really the problem is the scheduling. Oftentimes it was at times when I was teaching. I had a lot class conflict. That was really a drag. I missed important meetings. You all might consider a time that works.” Chris Daniels, UC Denver, Music and Entertainment Industry Studies

Disseminating Research Results

- Participants in the Collaborative have **published and presented research** related to their PTLC project in a variety of settings. In addition to these publications and conference presentations, participants have disseminated information about their PTLC projects in conversations with other faculty, their department meetings, and others. The PTLC Index document contains this information in detail (see Index document). The PTLC is sustained by the success of its faculty researchers through dissemination such as publications and presentations.
- Faculty researchers have also commented on ways they hope their research projects can **affect people beyond their immediate departments**.
 - “I think this research could open the door to other programs following our model. There is already a lot of interest in our model. If we can demonstrate strongly that this is a strong patient care model and a strong education model, I see impact far beyond the local.” Wesley Nuffer, UC Denver, School of Pharmacy
 - “I have zoomed out a bit and tried to talk and learn about improvisation more generally, as opposed to honing in on technical language that is specific to my discipline of music.” Sean McGowan, UC Denver, Music and Entertainment Industry Studies
 - “It’s always good to have publications that come from our program. They make us more visible. I mean that not only on this campus but across the country. It would raise the visibility of our community volunteer program so there would probably be a lot of interest from other physical therapy education programs.” Mary Jane Rapport, UC Denver, School of Medicine

Discussion

Toward Future Directions

- The call for proposals for the 2009 PTLC cohort contained more specific information about the commitment required to be part of the PTLC, and we have striven to make the 2010 call for proposals even more specific and detailed. Those who applied are committed to attending regular meetings on weekday afternoons at the UC Denver Anschutz Medical Campus. The call for proposals emphasized that faculty research projects should focus on assessing student learning so that there is no confusion about the intent of the Collaborative.
- The roles of coach and mentor will be collapsed into one coach/mentor role for the 2010 cohort. The coach/mentor must have experience with classroom research and with the Institutional Review Board (IRB) process.
- The PTLC is moving to an academic-year cohort system in two phases. First, we will welcome the 2010A cohort in January 2010. This group will continue in their work as we

then welcome the 2010B cohort to the PTLC in September 2010. The two cohorts of faculty researchers will meet together through the 2010-2011 academic year.

- Faculty researchers have expressed their appreciation for presentations by guest speakers at PTLC progress report meetings. However, they have also appreciated time to present briefly about their work to the whole group. For 2010, some meetings will have guest speakers at some meetings with time to meet in small groups, and we will have presentations of research progress to the entire group at other meetings (such as at the beginning and end of each semester).
- In response to feedback about the difficulty in attending progress report meetings because of conflicts with teaching and department meetings, 2010 progress report meetings will occur on Thursday and Friday afternoons in hopes that more participants will be able to attend.

Conclusion

The Carnegie Foundation for the Advancement of Teaching has a new president Anthony S. Bryk, with new priorities. Although the directorship has changed from Lee Shulman to Anthony S. Bryk, the University of Colorado and other research institutions are still part of the Carnegie foundation. It is likely that national activities of the scholarship of teaching and learning will soon reside in the International Society for the Scholarship of Teaching and Learning (ISSOTL) currently based at Indiana University. In any case, the University of Colorado President's Teaching and Learning Collaborative will continue to develop and strengthen as more University of Colorado faculty participate and continue to research and publish on scholarly teaching in their disciplines. The PTLC is committed to establishing the University of Colorado as a leader in research on teaching and learning (see Appendix for PTLC Goals 2008-2011).