

On Research and Leadership UPDATE



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Editor's Note: This edition of *UPDATE* focuses on several unique approaches to improve students' transition into postsecondary education, with a particular focus on the Pathways to Results (PTR) initiative. The framework for PTR is grounded in the Equity Scorecard™ work of Estela Bensimon and the Center for Urban Education and in developmental evaluation, a framework developed by Michael Patton. This issue begins with an in-depth look at equity mindedness in an interview with Dr. Bensimon. She discusses the concept's development and application in educational settings. Following this article, Debra Bragg provides an overview of PTR. To elaborate, this issue looks at the state's perspective as well as the perspectives of several PTR participants. This edition of *UPDATE* also looks at two other potential solutions for improving student transition outcomes, STEM Learning Exchanges and curriculum alignment. The newsletter concludes with a book review of Michael Patton's (2011) *Developmental Evaluation*. We are appreciative of the many authors who contributed to this edition of *UPDATE* and we hope readers are as excited as we are about these approaches to improving student outcomes.

The Equity Scorecard™: An Interview with Dr. Estela Bensimon

by Stacy Bennett

In 1999, Dr. Estela Bensimon founded the Center for Urban Education (CUE) at the University of Southern California (USC). CUE's goal is to produce academic research about the importance of equity and equity-mindedness in higher education and to create tools for practitioners that lead to equitable student outcomes. Dr. Bensimon's work has resulted in the development of the signature Equity Scorecard™, a unique action research model. In March 2011, Stacy Bennett, OCCRL Research Assistant, interviewed Dr. Bensimon about her work.

UPDATE: What led you to create the Center for Urban Education?

Dr. Bensimon: The Center for Urban Education was launched almost 12 years ago as part of a university-wide initiative to advance the goals of USC's strategic plan, one of which focused on the urban paradigm. My colleagues and I submitted a proposal to create a center that would engage in work that would bring about change in urban education. Much to our surprise, we were awarded \$900,000 from the USC Provost's Office. We initially thought our work would involve K-12, but it has primarily focused on higher education because there was little attention being paid to equity in student outcomes at that time.

CUE has evolved tremendously since its inception. Of all the projects that were awarded money from the provost's initiative, CUE is the only one that succeeded in leveraging the initial investment with additional funds from private foundations as well as contracts. Over the last 12 years we probably have raised more than 10 million dollars.

UPDATE: Where did the concept of "equity mindedness" come from?

Dr. Bensimon: When the Center was launched, one of my goals was to figure out how we could do research that would close the racial-equity gaps in higher education. As researchers we typically do research to publish in peer-reviewed journals or present at

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conferences, and we tend to write for our own colleagues. If we want to do research that is going to bring about change, whether in a single community college or an entire system of higher education, we have to use a different approach.

I was also concerned that while all institutions of higher education were talking a great deal about diversity and diversifying the student body, educational outcomes in higher education were just as unequal as they were prior to the civil rights victories 50 years ago. The issue, then, is not about diversity; rather, it is about creating equity in opportunities and outcomes for those students who were making diversity possible at higher education institutions across the country. I felt the diversity agenda, as well-intentioned as it was, was taking our attention away from equity, particularly for a state like California where many colleges do not have a diversity problem. We are already very diverse as institutions, but that diversity has not necessarily translated into equity in outcomes.

UPDATE: What do you mean by “equity mindedness”? What is its significance?

Dr. Bensimon: When we started observing campus teams talking about their own data disaggregated by race and ethnicity, I became aware that equity gaps were being attributed to students or their characteristics. It was common to hear that students came to college unprepared for the workload, that they lacked motivation, did not take advantage of the resources offered by the university, did not value education, or faced cultural barriers that impeded their success. To these college teams it was student characteristics that led to their academic failures. That’s when I started thinking about the notion of shifting people’s sense-making and perspective from a deficit model – one that blames students – to one that is more about becoming equity-minded. Instead of focusing on what students are lacking, we should be examining institutional practices as well as the knowledge and beliefs of the practitioners as potential factors contributing to inequitable outcomes.

UPDATE: How do you teach “equity mindedness”?

Dr. Bensimon: We teach it through the process we use for facilitating the examination of data at the institutions and systems where we work, which includes conceptual and theoretical discussions as well as activities that distinguish equity-minded versus deficit-minded language. For instance, when our teams are looking at data they might say, “African American students are dropping out at a higher rate than other groups because they are not ready for college.” We would proceed to ask them how they knew that; after all, it’s about asking questions. We also construct our evidence teams to maximize the likelihood that there will be at least one individual whose research or campus reputation will bring an equity-minded perspective to the group.

We knew we couldn’t talk about equity just by doing workshops or having a presentation; we had to approach it in a way that was aligned with the interests of the leaders and institutions.

Recognizing the importance of accountability to this audience, we developed the Equity Scorecard™ and use quantitative metrics. We know that many people are interested in how to measure outcomes, especially now with the President’s college completion agenda. While our work focuses on equity-mindedness, the Scorecard shows how everyone is doing, and I think that is part of our success. We are not doing sensitivity training, human relations training, or assessing campus climate, which are the primary tools of diversity initiatives. We are providing a very practical tool for institutions and systems to measure and improve student success.

UPDATE: What criticisms have you received about this way of thinking?

Dr. Bensimon: Since this way of thinking is based on the notion that institutions are structured in ways that create inequities, higher education needs to understand and accept the fact that institutions – because of their history, traditions, and values – may have unintentionally produced racist outcomes. This is very difficult for people to accept and openly discuss. Most people think of race and inequity as being an individual issue, not an organizational one. Though many resist it at first, we have noticed that they are still able to engage in the Scorecard process and eventually accept it.

There are different levels of resistance. At the highest level, someone may refuse to participate or refuse to disaggregate data by race and ethnicity. Some institutional researchers have done this. There is also a more passive resistance, in which people feel that we don’t need to talk about race because the problem is really about social class.

UPDATE: How do you know when someone “gets it”?

Dr. Bensimon: One way is by the use of language. When the teams analyze their data, we observe whether they present potential solutions as something that needs to happen to the student or at the institutional or practice level. I’ll give you an example. We were just in Wisconsin and we were starting to work with two new campuses. We had a kick-off institute with the team leaders and there were two faculty members who felt they didn’t have the time or commitment to be a part of this process. I didn’t think they were going to come back the next day, but they did. Interestingly, they had driven home separately, and each had an “a-ha” moment. One realized that she had never had an African American student in any of her classes, and the other realized that she only had African American students in the introductory courses and never in the major courses. These realizations seemed to have enough of an impact on them to decide that this process was important and they wanted to continue their participation.

Those types of attitudinal changes are another way of knowing when someone “gets it.” I’m not suggesting that these faculty members were now equity-minded; rather, they were now more likely to question why they do not have many African American

students, something they had not asked before. If they start asking this question in meetings and share it with other colleagues, they can bring about change in institutional or departmental culture.

UPDATE: You have mentioned the Equity Scorecard™ several times. Could you talk a little more about it and what went into developing it?

Dr. Bensimon: Before CUE was established, I was Associate Dean for USC's Rossier School of Education and one of my responsibilities was to prepare a report for the provost based on metrics of excellence that were selected by each school. Rather than produce a laundry list of metrics, I formed a committee to consider how we could frame these metrics of excellence in a way that would really have some meaning to us in terms of what we wanted to accomplish. A committee member, Harry O'Neil, came across the balance scorecard in an issue of the Harvard Business Review. The balance scorecard is a model frequently used in the business world, and we decided to convert it into an academic scorecard as a way of organizing our metrics of excellence. When we started CUE, I realized the scorecard should be based on equity, so we turned it into the Equity Scorecard™ and changed the perspectives and the metrics.

Because of this, I would say we have developed a theory of change. We concentrated on developing the method and the tools for facilitating the use of data, and moved from data collection to data interrogation to organizational change. We didn't have that 12 years ago, nor did the balance scorecard.

Our mission at CUE is to create the social action tools that enable institutions to create equity in educational outcomes. We build the tools that help people who are not accustomed to using data to interpret it, and that is our strength. A lot of the national initiatives focusing on evidence-based decision-making or college completion goals often lack the tools to help people who need to make the changes understand and use those data.

UPDATE: Why is data so important?

Dr. Bensimon: Data are important, but what are more important are the questions that are raised to interrogate what is behind the data. Higher education is very good at collecting data and building massive databases, but data alone don't bring about change. We should focus on knowing which questions to ask in order to make the data useful for organizational learning and change.

UPDATE: What do you consider to be the major achievements of the Center?

Dr. Bensimon: One of our biggest achievements is that we have been able to sustain and expand our efforts. We started out in California and have grown to become a national center with work in several states. Another achievement is that others want to use our methods and model their work after ours. For example, Tia McNair, formerly with the National College Access Network,

attended one of our summer institutes where she learned about participatory critical action research and the concept of equity-mindedness. This experience had such an impact on her that she wanted to pilot test the Scorecard in two Boston high schools after receiving a major grant. Another example is the University of Wisconsin System, which has invested its own funds to use the Scorecard for its campuses over the last four years, and we now have other colleges that are willing to invest their own resources to work with us. This is a very important validation of the quality of our work, because most institutions of higher education only implement new approaches that are externally funded.

I also think we are pioneers in doing research at two different levels: action research, when we work directly with our campuses, and traditional social science research, in our observations and writing related to how people change. We are showing that you can do research of the traditional kind that responds to the need to be part of the academic community, as well as research that responds to ground-level needs and brings about change in a rigorous manner.

UPDATE: What's next for the Center and your research?

Dr. Bensimon: We have a grant from the Carnegie Corporation to document all of our work and develop a leadership academy that will build institutional capacity to implement and sustain our Scorecard process. We have a staff team that is writing a handbook about the Equity Scorecard™. In the next few years, we envision the creation of an academy to train institutional teams of practitioners who are interested in using the Scorecard. We will visit their institutions or system offices to implement the process, but they will come to Los Angeles periodically for continued training. Right now we work primarily at the college sites, but eventually we hope to perform sufficient training so that the processes can be sustained without us.

We also have a partnership with the Western Interstate Commission for Higher Education (WICHE). We are working with them to expand the Scorecard to other states at the system and policy level. We hope to work with more states and higher education systems and continue to study the process of change.

UPDATE: Is there anything I missed or that you would like to add?

Dr. Bensimon: I would like to say more about the theory behind our work and how it is different from other approaches to organizational change. We believe that in order to bring about change in higher education institutions, you need to involve the faculty whose practices affect the outcomes of students. One way to do that might be through professional development, participation in conferences, or the use of consultants. However, you also need to involve individuals in a continuous process of inquiry of their own practices, so that they know what is not working. We want them to ask, "why is it that what I do does not seem to work for African American students or Hispanic students?" and then be moved to take action. We want them

to revise their practices and consider new ways of doing what they have always been doing, which is a different way to think about change.

Typically, change is mandated externally through a new policy or program or by establishing a new office. Rather than rely on change based on adopting a new best practice, we engage practitioners in a process of self-change. Our emphasis is not best practices, but rather, how practitioners can become best practitioners. In sum, the inquiry model maintains that if people become researchers of their own practices, they are much more likely to reframe institutional problems as solvable problems of professional practice. ♦

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Pathways to Results in Illinois

by Debra Bragg

Pathways to Results (PTR) is an outcomes-focused, equity-guided process to improve student transition to postsecondary education and employment. Its development in Illinois has focused on programs of study (POS) and adult career pathways, but the potential to apply PTR to a wide range of programs that facilitate transition to postsecondary education and employment is limitless. The 5-phase process capitalizes on collaboration among partners, including education, business/industry, community-based organizations, and students, to engage in a systematic problem-solving process that identifies sustainable solutions to improve student outcomes.

A key tenet of PTR is its focus on achievement gaps between diverse learner groups to improve students' future education and employment outcomes. Lessons from the Center for Urban Education's Equity Scorecard™ about ways to critically examine data and uncover inequities that go unnoticed in day-to-day practice are critical to PTR's method of identifying equity gaps and creating solutions that enhance student transition. The five phases that PTR teams undertake, with support from state partners such as OCCRL, the Illinois Community College Board (ICCB), and the Illinois Center for Specialized Professional Support (ICSPS) are:



Phase 1.

Engagement – Team members and partners collaborate to focus on critical problems that need to be addressed to improve student outcomes and enhance program quality. Analysis of existing data on student outcomes and Programs of Study quality feed into initial decisions about the PTR project's focus.

Phase 2.

Outcomes and Equity Assessment – The PTR team uses student-level data to examine outcomes and identify gaps in results between racial, ethnic, low income, and other groups and special populations. Using these data, teams identify areas where outcomes are especially successful and areas where short- and long-term improvements are needed.

Phase 3. Process Assessment

The PTR team analyzes core processes (e.g., recruiting, advising, teaching, learning, assessing) that relate to the problem the team has decided to address. Teams interrogate and probe existing processes to understand why desired results are not being produced.

Phase 4. **Process Improvement** – Teams reach consensus on solutions and determine implementation strategies based on the solutions' potential to make change and improve student outcomes. The team develops implementation and evaluation plans to improve equitable student outcomes and Programs of Study quality over time.

Phase 5. **Review and Reflection** – Team members individually and collectively review and reflect on lessons learned from engaging in the PTR process. The team develops a plan to ensure that solutions are sustained and determine the feasibility of applying the PTR process to other Programs of Study.

Funded by the ICCB from 2009 or 2010 to the present, 18 Pathways to Results (PTR) projects are operating in the state of Illinois in fiscal year 2011, and these teams address a diversity

of issues in a wide range of Programs of Study to improve the transition, retention, and completion outcomes of diverse learners. These 18 teams are playing a critical role in designing, carrying out, and evaluating the PTR process. They are pioneers who deserve OCCRL's deepest thanks for their willingness to participate in PTR, even before it was fully developed or tested, and provide feedback to make it successful. ♦

For more information about the PTR project please visit <http://occrl.illinois.edu/projects/pathways>

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State Perspective on Student Transition

by Brian Durham

In today's workforce, 91 million jobs require some form of higher education (Carnevale, Smith and Strohl, 2010). Because of this high demand for postsecondary credentials, states are constantly examining ways to more effectively engage partners around the development and improvement of quality Programs of Study leading to industry recognized credentials. This is precisely the purpose of the Program of Study provisions in the Carl D. Perkins Career & Technical Education Act (Perkins IV). This act requires states to develop Programs of Study that are rigorous, relevant, and aligned to industry standards. These Programs of Study must be non-duplicative and consist of content that is aligned across secondary and postsecondary education according to the federal Carl D. Perkins Career & Technical Education Act, passed in 2006 (often referred to as Perkins IV because it is the fourth piece of federal legislation named after Carl D. Perkins, the late Kentucky Senator who championed career and technical education during his long tenure in the U.S. Senate.).

A few years ago, the State of Illinois was struggling with the implementation of Programs of Study. Fortunately, the Illinois Community College Board (ICCB) had a long-standing relationship with the Office of Community College Research and Leadership (OCCRL) at the University of Illinois Urbana/

Champaign. The OCCRL has assisted the state in previous implementation efforts involving career and technical education and tech prep programs and has also worked directly with the agency on many other initiatives, including dual credit reform and the Shifting Gears project, funded by the Joyce Foundation.

Together with OCCRL, we recognized the need for a vehicle for implementation. Working collaboratively across the Illinois State Board of Education (ISBE) and the ICCB (the two education entities responsible for full implementation of Perkins IV), and the OCCRL, a systemic approach to implementation emerged that included the development of Guiding Principles, Design Elements, and tools for use by practitioners across the state (OCCRL, 2008; Jankowski, Kirby, Bragg, Taylor, & Oertle, 2009). Perhaps the most important tool to emerge was the Pathways to Results (PTR) initiative, developed and implemented by the OCCRL through a grant from the ICCB.

To successfully implement PTR, the ICCB and the OCCRL recognized that important philosophical changes were needed. The first was the development of a Program of Study is never done. That is, for Programs of Study to be truly viable for career and technical education reform, educational programs and services have to be developed and improved continuously.

Second, by adopting this position, the state effectively lowered the stakes for participating by giving institutions the opportunity to experiment. This approach allows institutions to examine problems, develop solutions, and potentially make mistakes. Third, the state embraced the notion that this philosophy of improvement could only be realized through the use of measures that allowed for data-driven examination and change. Through PTR, it is no longer good enough to simply identify a perceived problem. Instead, programs must use data to make sure the problem is real and to make improvements.

Perhaps the most important aspect of PTR is its focus on using an equity lens to examine problems at institutions. This focus on equity is consistent both with Perkins IV and the larger community college mission. The examination of equity is not purely theoretical. For instance, in addressing equity goals, the Illinois Central College Partnership supported a career day for high school students aimed at women and minorities, drawing 561 students from 20 different high schools (OCCRL, 2011). Lakeland College saw great disparity in the number of women in their Maintenance, Installation, and Repair program, and they addressed this disparity through targeted marketing that included using social media and identifying same-sex role models (OCCRL, 2011).

Another important aspect of the PTR process is the focus on explicit, formalized partnerships. PTR cannot work if the partnerships are not committed to working through the entire process and engaging at each stage with the information and the data to assist in addressing their identified problem. Across the projects, high schools and industry partners are especially prevalent. For example, Southwestern Illinois College Health Sciences and Manufacturing partnerships included more than ten of their feeder high schools and a diverse set of industry partners (OCCRL, 2011).

For Fiscal Year 2011, the ICCB intends to fund up to three demonstration sites that will make still larger strides in PTR and up to ten additional sites that will learn lessons from both OCCRL and the previously funded sites. Additionally, PTR is now part of the Perkins IV 2011 guidelines, with the ICCB asking each college to identify a problem that could potentially be the subject of a PTR focus. The next step for PTR

includes wider inclusion in Perkins IV implementation. In a time of extreme fiscal austerity, PTR's focus on data driven decision making, formalized partnerships, and the equity lens provides an important vehicle for demonstrating outcomes in Programs of Study. Its wider inclusion in Perkins IV in Illinois will ensure that, when asked, Illinois CTE will be able to demonstrate results at many different levels. ♦

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Pathways to Results Projects at Southwestern Illinois College

by Sherry Hott, Julie Muertz, and Bradley Sparks

Southwestern Illinois College (SWIC) was part of the inaugural class of PTR teams and currently has three teams involved in PTR projects. The two original teams are working in the Manufacturing and Health Science clusters and have completed the five phases of the PTR process. The third team has begun work in the Architecture and Construction cluster.

The problem the Health Sciences Partnership at SWIC focused on was communication of the application requirements for admission into the health science programs. Students interested in health science programs often seemed confused about the requirements and how to be best prepared for selection by the application deadlines. This lack of understanding and planning left students frustrated and delayed their transition into a health science program by a full year at least since applications are generally only accepted once a year.

In addition to institutional data, the Health Sciences PTR team used surveys and focus groups to collect additional information. Through surveys of Health Science applicants, high school counselors, and SWIC counselors, the partnership learned about this group's awareness of the available resources, their ability to find answers to questions, and their willingness to use materials. Focus group meetings with students and individual meetings with high school counselors provided guidance about how to revise communication materials including the website, brochures, catalog, and application planning guides.

The revisions to the communication materials have been well received by students and counselors. A follow up survey conducted of the 2011 Health Science applicants revealed that more students have the pre-requisites for the application completed and are utilizing the website and the planning guide to prepare them for the application period. This success is due in large part to having the process owners heavily involved in developing the solutions and taking the time to check in with the users of the materials and services as we worked on the solutions. To ensure that these solutions are sustained, the division has adopted a policy of continuous review of materials, training, and processes.

The Manufacturing team had a different array of issues to address in the PTR process. Layoffs, companies moving overseas, downsizing, etc., have created a negative perception nationwide of the manufacturing industry and its related occupations. SWIC's manufacturing programs, particularly its Precision Machining Technology program, face these same perceptions even though the college has invested large amounts of money into new, state-of-the-art equipment and hired highly qualified

personnel to teach the curriculum. To counter these perceptions, industry-recognized educational pathways are needed to build a pipeline of highly-skilled scientists, engineers, technologists and analytical mathematicians.

The Manufacturing team chose the marketing and recruitment processes for intensive study. The PTR process was an excellent means of collecting the data needed to make informed decisions about why certain organizational functions have not been working. The team's goals were to improve the image, awareness, and understanding of educational and employment opportunities in the construction and manufacturing programs; define educational paths for students from their 9th grade year through at least two years of college; and market careers in construction and manufacturing to students. The team developed a comprehensive marketing plan that will enable recruitment of high school students from the district into the construction and manufacturing programs. The plan specifically targets those students who have been traditionally underrepresented in SWIC programs including minority, low income and special needs populations who could benefit most from a career pathway.

The sustainability and expansion of the Manufacturing team's PTR solutions were a focus from the beginning of the process. Solutions such as a division recruitment calendar and faculty summer camp will serve as valuable recruitment and marketing tools in other areas as well. The data analysis conducted by the College's Institutional Research Office was done in such a way that it can be replicated each year as requested for different populations. The revitalized connection with the local industry advisory committee has evolved into meaningful partnerships that are now centered around the PTR process. SWIC's relationships with both industry and high school personnel will continue to be beneficial as the team markets new offerings, seeks donations, solicits internship and employment opportunities, and asks for advice on curriculum and equipment. Based on the success of the Manufacturing team's project, college administrators in other technical departments throughout the division plan to implement lessons learned from these initial PTR projects. ♦

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Lessons from the Frontlines of the PTR Process

by Stacy Bennett

This article details responses to questions OCCRL posed to representatives of several PTR projects across the state. Each person was given the same series of questions. The responses highlight the unique ways in which the PTR process can be applied. We are grateful for the variety of perspectives our respondents shared. Our respondents are:

Ali O'Brien, the College of Lake County (**CLC**)
Judy Dietrich, Illinois Central College (**ICC**)
Rick Bunton, Kishwaukee College (**KC**)
Diana Glosser, Lake Land College (**LLC**)

How did your goals/ideas change throughout the PTR process?

CLC: We have stayed on a fairly consistent path in terms of our goals for the project. Going in we knew our nontraditional participation numbers were low, labor market projections were high for our area, and that targeted recruitment efforts could help address building a pipeline from secondary to postsecondary to workplace. Our ideas about the current student population did change as we reviewed data in Phase 2, which enlightened the team about patterns in enrollment and successful completion by special populations and race/ethnicity groups.

ICC: Illinois Central College's problem/opportunity was to examine and analyze manufacturing students entering our programs to see if they were academically prepared for college level mathematics and reading courses, or if they required remediation. We looked at course sequences from high school through college by completing several transcript studies with the aid of teams from two of our local high schools, along with educators and staff from the college. In addition to the transcript studies, we also wanted to increase high school students' participation in a Manufacturing Expo-Career day that had been started a year prior to this grant. Our goals and ideas lead us through the PTR process rather quickly. Ideas and innovations were documented and prioritized for each project according to the PTR process. It made us stop and think about the details of the project. The equity and outcomes data supported what we already knew. I think our goals remained the same throughout.

KC: We began this process with a very short lead time, so initially I felt that I was in over my head. I think that the core members of our team felt that way as well. Our goal was to look for ways to increase the enrollments in our Applied Engineering Technology (AET) program. When we began the process it seemed that we were not making the progress we expected and that we were looking at issues that did not seem relevant at that

point in time. But, as we continued through the process and became more familiar with it, we began to see the value of what we were doing in the initial phases. As we continue through the process it has become clear that the process we are using with AET should be used with each of our programs.

LLC: The data provided a framework that opened new questions and drove additional data needs. Although it did not change our goals and ideas conceptually, it did validate the goals and required us to look at them from additional perspectives. As we progressed through the PTR process, goals were refined, focused and prioritized. In terms of recruitment and retention of nontraditional students, the process validated that we were not actively and effectively recruiting women into manufacturing programs. We examined the root causes document and literature on current career development and recruitment practices, and we hosted local focus groups. We have embarked on a long-term recruitment/marketing plan that provides potential students from middle school through adults with a comprehensive approach. It focuses on marketing manufacturing career opportunities and the knowledge and skills needed in the manufacturing pathways, while also featuring women in the occupations. This is patterned after a local 10-year effort, "*Are YOU Man enough to be a Nurse?*" campaign, which has resulted in an increase in secondary and postsecondary enrollments in nursing and other allied health programs.

What have you learned through the PTR process?

CLC: We have learned that dissecting your data on a Program of Study from both the secondary and postsecondary perspective tells a story you may have never been aware of prior to PTR. For example, the breakdown by special population and race/ethnicity was data historically viewed from the institutional level, not the departmental level. Our team has agreed that all CTE programs would benefit from a departmental level analysis of equity and outcomes data and plans to integrate this review into annual processes. In addition, we've learned that in spite of our collaborative relationship, both the secondary and postsecondary partners have gaps in recruitment efforts that would benefit by combining resources.

ICC: At the high school level, administration support was key to working successfully throughout this process. For our Manufacturing Expo, the support of the industry-led Manufacturing Strategy Group was key. The Manufacturing Expo saw tremendous growth and opportunity for introducing students to the modern world of manufacturing career paths. The transcript study turned out to be a catalyst for a wide range of innovative practices that

could be implemented at the high school level. Although we had activities and possible solutions in mind, we consciously slowed down in order to document the process for the grant. We followed the process and learned patience.

KCC: We have learned how to look at specific issues systematically and to break those issues down into component parts. Once the parts have been identified and studied it becomes much easier to pinpoint strengths and weaknesses.

LLC: Our team is greater than the sum of our individuals. Our partnership members stepped in to provide expertise and out-of-the-box thinking at every step. The PTR process allowed us to share the workload and effectively engage business, high school, community college, and university expertise. We were able to tap into those unique points-of-view and contributions at discrete times. Although we did not end where we had envisioned, we are highly satisfied with the end product.

Which phase was most enlightening?

CLC: Phase 2 (outcomes and equity analysis) was the most enlightening because the team gathered data above and beyond the grant requirements. This data painted a more complete picture about the Programs of Study. For example, our area career center (Lake County High Schools Technology Campus) pulled data on enrollments by member high schools that send students to the secondary level Auto Collision Repair program. Prior to collecting the data, we presumed we knew where in the district we were pulling enrollment, but we were surprised by some of the results as they did not match the major demographics for certain areas of the county. This information provides us an opportunity to target recruitment to member high schools based on their enrollment patterns and our recruitment goals.

ICC: Phase 5, Review and Reflection. Now that we have worked through the phases we can see the process and expectations more clearly.

KCC: I think the entire process has been enlightening. Each phase brings out new and different information. The most enlightening element to this point has been the discovery that Sun Tzu identified the phases used in PTR when he wrote *The Art of War* in the 6th century BC. Granted he used a military context, but his five steps match very closely the steps of PTR.

LLC: The PTR process highlighted the commonalities of the challenges each partner balanced and opportunities for new projects that have resulted.

What advice would you provide to a team beginning the PTR process?

CLC: Our advice would be to engage your secondary education partners at the very beginning of the process by including them in the decision to utilize the PTR framework. We are fortunate to have a highly successful relationship with our secondary partner and this was not our first collaboration. Despite past successes, it was important that both secondary and postsecondary organizations participated in the decision to even apply for the grant, knowing the extensive time commitment required throughout the year long process. Another consideration is being flexible to bring in team members during the phase(s) where their participation is most effective and impactful. Involving every team member at every meeting is not realistic and you need team leadership that can assess these varying levels of participation throughout the entire process.

ICC: The PTR process should not be taken lightly. Organize your staff and calendar for a big project and talk to others who have been through the process already. Articulate what your plans are in the most specific terms and follow the data. Make sure you have the right people at the table to keep it sustainable and get administrative approval. Develop the improvement suggestions together and communicate and document everyone's responsibilities. Take the time for reflection and keep motivation high for the next round!

KCC: Keep an open mind as you begin the process. It is easy to slip into the "cynical educator mode" but in time you will see the benefits of the process. Form your team carefully and be sure you have a core group that is committed to the process and is aware of the task before them. Remember that OCCRL and ICCB are there to help you and can provide valuable assistance through their staff and consultants.

LLC: Choose a project that people are enthusiastic about and select team members that are influential and decision makers. Keep an open mind when reviewing the data and look for new opportunities the data may reveal. Be sure to prioritize your findings. ♦

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STEM Learning Exchanges

by Jason A. Tyszko¹

In 2010, as part of the State of Illinois' Round 1 and Round 2 Race to the Top (RTTT) proposals, science, technology, engineering, and mathematics (STEM) Programs of Study were identified as one of the key education reform initiatives that would help promote college *and* career readiness for all learners. Originally developed and implemented as part of Career and Technical Education (CTE), Programs of Study serve as a model for bridging programs across P-20 education institutions and are demonstrated to improve academic achievement, increase graduation rates, and improve transitions to postsecondary education and employment.

Aligned to the National Career Cluster Framework, Programs of Study enable the State's education institutions to align their curriculum, assessments and career counseling with the State's growing economic development sectors thereby ensuring successful transitions to employment and a stronger economy for Illinois. The nine STEM cluster areas identified in Illinois' RTTT application include: 1) Health Science; 2) Agriculture; 3) Information Technology; 4) Finance; 5) Architecture & Construction; 6) Transportation, Distribution, & Logistics; 7) Manufacturing; 8) Research & Development; and 9) Energy.²

Fundamental to the Program of Study approach is the ability to build education program capacity to provide opportunities for learners to choose and explore a program related to their academic and career interests while also providing opportunities to demonstrate real-world skills through applied learning. In addition, Programs of Study provide a way to promote public-private partnerships between schools, communities, and business and industry as part of a larger P-20 talent pipeline. Also, Programs of Study are designed to improve access and success for underrepresented populations in STEM fields, such as women, minorities, low-income, and disabled students.

¹ The author would like to acknowledge the thoughtful review of this article by Mark Williams, Illinois State Board of Education; Brian Durham, Illinois Community College Board, and Karen Helland, Illinois Board of Higher Education.

² Eight of the nine identified areas are consistent with the National Career Cluster Framework with the exception of "STEM," which has been renamed "Research & Development" for the purposes of Illinois' STEM initiatives. In addition, the Information Technology (IT) Task Force of the Illinois Workforce Investment Board (IWIB) recommended changing the national IT pathway model to reflect changes in the IT sector. Given the increased investment, policy focus, and emerging occupations related to the energy sector, "Energy" is listed as a separate career cluster based on the recommendation of the Illinois Workforce Investment Board's State Energy Sector Partnership. The "Energy" working group will use this opportunity to identify career cluster pathways specific to the energy sector that can further inform changes to the National Career Cluster Framework.

One of the key challenges to scaling up Programs of Study for all learners is addressing the capacity issues associated with increasing the number of opportunities available to students in any given district. In smaller or more rural districts there are often resource constraints in terms of teacher training or curriculum and equipment. In other districts a highly focused "college for all" strategy leaves little room in terms of elective opportunities to offer career cluster pathway course options. Given these and many other constraints it was necessary to develop a parallel strategy in RTTT to assist districts with launching and implementing STEM Programs of Study.

STEM Learning Exchanges were envisioned as a solution for supporting capacity building and scaling up Programs of Study by forming open-collaborative, public-private statewide networks in the career cluster areas identified above. Using best practices among agriculture partnerships in the state as a model, Learning Exchanges would help connect a network of P-20 education institutions and related education partners--including museums, federal laboratories, after school programs, and community-based organizations--with employers, industry associations, labor organizations, workforce development systems, and others. Learning Exchanges would exist outside of government, business and education, but would provide a new infrastructure that mediates the relationship of all three sectors by voluntary association.

The purpose of this network would be to reduce the transaction costs in identifying a wide range of partners in a given cluster areas as well as to share resources to assist with local implementation of Programs of Study. The nine identified functions of the Learning Exchanges are identified below:

1. Provide e-learning curriculum resources, including on-line courses, assessments and feedback systems, reference materials, databases, and software tools.
2. Expand access to classroom and laboratory space, equipment, and related educational resources necessary to support programs of study through regional partnerships and other strategies.
3. Support student organizations and their major activities, including conferences, internships and professional networking experiences, competitions, and community projects that build leadership, communication and interpersonal skills and provide professional and peer support networks.
4. Provide internships and other work-based learning opportunities that connect students with adult mentors.

5. Sponsor challenges and project management resources for students to work in collaborative teams addressing real-world interdisciplinary problems.
6. Provide professional development resources for teachers and school administrators integrated and aligned across middle school, high school, and community college instruction, including STEM externships, support for web-based networks, and integrated professional development for academic and CTE instructors.
7. Provide career development and outreach resources to expand awareness of STEM-related programs and careers to K-12 students.
8. Provide tools and resources to assist students and schools with implementing personalized education plans and transitions to postsecondary academic and training programs, including establishing course articulation and dual credit opportunities.
9. Review performance of STEM Programs of Study through assessments and work with school partners to continuously improve performance.

To assist with connecting cluster partners across the nine identified functions, the State proposed that STEM Learning Exchanges be integrated as part of the development of a statewide instructional improvement platform referred to as a Learning and Performance Management System (LPMS). The LPMS would house, in a cloud computing environment, integrated State and local data off of which applications can be efficiently built, innovations can quickly spread, and students and educators can access information and tools to improve student outcomes. The LPMS would enable districts to focus their efforts on use of data rather than technology infrastructure.

Originally envisioned as a K-12 system, the LPMS will now be designed to support P-20 education institutions and support both lifelong and lifewide learning. The LPMS will be designed to support the personalization of student learning through full data integration based on interoperability standards and a common data infrastructure that enables students, teachers, administrators, and other learning partners to:

1. Access and Integrate the full array of commercial and non-commercial e-learning resources;
2. Use learner data from multiple sources to drive instructional improvement and education and career planning and management;
3. Participate fully in global open-collaborative communities (e.g. STEM Learning Exchanges) for student learning, professional development, and continuous improvement; and
4. Improve the business functions of education including financial, human resources, and information technology management.

Shortly after learning that Illinois would not be a recipient of RTTT funding, the State of Illinois announced that the application remains the State's blueprint for education reform, including scaling-up Programs of Study, forming STEM Learning Exchanges, and implementing an LPMS instructional improvement system. The State identified that in order to continue moving forward with scaling-up Program of Study opportunities, public-private working groups in each of the designated sectors would need to be formed in order to develop consensus around model P-20 Programs of Study based on industry clusters.

The goal of the working groups is to develop a model course sequence within a designated STEM industry cluster area and provide a general model that reflects the P-20 components of a Program of Study. This model is designed to help establish a series of expectations, assumptions and definitions that will support statewide networks and facilitate connections between public-private networks in each of the nine cluster areas identified through the Illinois STEM Reform Agenda. In addition, the working groups will identify existing public-private support resources and review existing capacity and labor demand in their respective cluster areas.

The product for each cluster area will form the foundation for convening the STEM Learning Exchange. To the extent that a partner can match their local program or support activities to any of the clusters they will have access to a broad-based public-private statewide network in their cluster area.

The State will be convening partners on April 28th in Chicago to review progress on the above mentioned STEM reforms. It is estimated that the Program of Study working groups will submit their models by the end of June with Learning Exchanges forming in the second half of the year. The initial cluster areas will be determined based on demand within the education and employment sectors, available resources through the public-private partners, and the degree of consensus regarding the governance and direction of the Exchange. The State has also been developing a technical specifications report for the LPMS in partnership with the National Center for Supercomputing Applications based at the University of Illinois at Urbana-Champaign. ♦

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Significant Discussions: A Guide for Secondary and Postsecondary Curriculum Alignment

by Larry Warford

A well-educated population is critical to the economic vitality and stability of a nation. Educational attainment is critical to our standing in the world. Currently, too few of our nation's young people graduate from high school and successfully transition to higher education. We can no longer be satisfied with the low percentage of young adults with college credentials. This issue is of great concern, so much so that President Obama was motivated to establish the American Graduation Initiative. This initiative calls for a 50 percent increase in student completion rates at community colleges over the next decade. Many private funders and numerous national initiatives like the National Governors Association have also focused resources on increasing student success and completion.

So why are too few young people completing high school and seamlessly transitioning to higher education? Youth who follow all the rules, do well in school, meet state content standards, pass high stakes exams, and complete high school graduation requirements arrive at college and learn that they have deficiencies in reading comprehension, writing, or math skills and thus require remedial or developmental courses before they are prepared for college-level work. Coursework and curriculum between secondary and postsecondary educational levels is disconnected and misaligned. Essentially, these young people graduate under one set of rules then enter college and encounter an entirely new set of expectations.

This misaligned coursework is devastating and expensive. Currently, a majority of students entering community colleges need remedial coursework. One source (Alliance for Excellent Education's *Paying Double: Inadequate High Schools and Community College Remediation* – 2006) estimates that the annual cost to provide remedial education for community college students who have recently completed high school is \$1.4 billion. The cost continues to mount. Students required to take one or more remedial courses are less likely to continue their education and complete a degree or certificate of value than are those students who enter college without the need for remediation. According to National Center for Education Statistics (2006) data, just slightly more than half of entering community college freshmen return as sophomores. When students stop-out or drop-out, it increases time to completion, potentially escalates student loan debt, and has a demoralizing impact on confidence and motivation.

The national spotlight on completion goals inspires us to develop or search for ways to make secondary and postsecondary student success the norm. For this reason, the League for Innovation in the Community College, with generous funding support from the MetLife Foundation, led a year-long action research project that has resulted in the *Significant Discussions Guide*—a helpful tool for local educators who are well-positioned to guide a grass roots movement to improve student success by improving student transitions from one education system to another.

Nine community colleges were selected to lead *Significant Discussion* groups. Listed here are the participating community colleges:

- Anne Arundel Community College (MD)
- Central Piedmont Community College (NC)
- Lehigh Carbon Community College (PA)
- Maricopa Community Colleges (AZ)
- Miami Dade College (FL)
- San Diego Community College (CA)
- Southwestern Oregon Community College (OR)
- Sinclair Community College (OH)
- St. Louis Community College (MO)

The project was further advised by a national review panel of six prominent professionals with expertise in secondary and postsecondary education.

The resulting publication, titled *Significant Discussions*, is a culmination of the work of discussion groups at these community college sites and promising practices identified through research. More than 150 secondary and postsecondary faculty and administrators along with business and community partners were involved. These collaborative partnerships provided content for the guide and advice on the value of the guide as a useful tool.

The *Significant Discussions Guide* is designed to help local partnerships collaborate to improve curriculum alignment between their secondary and postsecondary education systems, reduce the need for remediation, and improve student success leading to employment opportunities.

Listed here are the major components of the *Significant Discussions Guide*:

- **Getting Started.** This section offers assistance to identify the right people to bring together for this important work. These collaborative groups must understand the issues and challenges and have the support of high level leaders to establish and achieve goals.
- **Gap Analysis.** During this phase, partners review curriculum to identify when and where (secondary or postsecondary level) the knowledge, skill, or standard is delivered. This process exposes gaps, when critical elements are missed along the instructional continuum.
- **Curriculum Alignment.** Results of the gap analysis are examined in this phase as curriculum is revised to close gaps in knowledge, skills, or standards. Overlaps or duplications are acceptable as long as depth of knowledge becomes more complex and of a higher order of thinking.
- **Assessment.** In this phase, the curriculum is evaluated to determine whether or not the revisions produced the intended outcomes – to close curriculum gaps. Results of this assessment phase will inform subsequent Gap Analyses and Curriculum Alignment work creating a continuous improvement cycle.
- **Next Steps.** This section offers recommendations at a systems level as well as action steps for institutions and individual stakeholders.

To be successful in improving the current conditions, it will take the work of many – from the grass roots instructional level to the policy level. Additionally, it will require that business and industry become more invested in and engaged with educational systems. Accountability across systems cannot be left to volunteer or ad hoc committee work. It will take the time and dedicated efforts of faculty members, curriculum specialists, and community partners. This is hard work that will involve incremental steps over time before noticeable changes will become apparent. *Significant Discussions* provides a context within which to accomplish this work.

None of this can occur without support from the highest-level college and community leadership. This high-level support sends a message that this is important work and justifies the dedication of time and resources.

Significant Discussions describes next steps that must be taken in order for the results of this important work to be realized. Roles are described for both institutions and individuals including faculty members, counselors and advisors, administrators and business and community partners. You can view the entire report at http://www.league.org/league/projects/Significant_Discussions/files/SignificantDiscussions2.pdf. ♦

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Book Review: Patton, M. Q. (2011). *Developmental Evaluation: Applying Complexity Concepts to Enhance Innovation and Use*. New York, NY: The Guilford Press.

by Jason Swanson

The framework OCCRL utilizes to better understand its systemic approach to forming partnerships, assessing evaluation models, supporting innovation development, guiding adaptations, emergences and bifurcations in the Pathways to Results (PTR) process builds on the developmental evaluation model described in this book. Michael Quinn Patton offers an alternative framework to perceive complex systems, dynamic interactions and chaos. He is not interested in supplanting the traditional roles of formative and summative evaluations with developmental evaluation, rather he is offering a more adaptive and sensitive system that acknowledges a complex and interconnected world. The phrase “language matters” is repeated throughout the text, so with this advice, I will first distinguish developmental evaluation from the more traditional forms of formative and summative evaluations.

Evaluation is an incredibly diverse field with countless models, approaches, methods, and purposes. For the sake of simplicity, I will make the distinction between traditional models and complexity-sensitive developmental evaluation models. With this simplistic reduction, I understand that I am prone to making overgeneralizations, but the contrasts will be helpful in serving as guidelines and thematic tendencies. From the perspective of traditional program evaluations, the purpose is to demonstrate how to improve the model from formative evaluations, and validate, test, prove and enforce accountability through summative evaluations. These models would be appropriate to use in stable conditions where the root cause of the problem is being addressed, interventions are reasonably well conceptualized, goals are easily distinguished, and key variables are expected to affect outcomes (which are controllable, measurable and predictable.) The evaluator would approach this system to focus on effectiveness, efficiency, impact, and scalability. An example of this traditional model of evaluation would be a series of formative and summative evaluations to measure the efficiency of assembly line workers in their efforts to build automobiles.

In a complexity-sensitive developmental evaluation, the purpose is to support the development of innovations and adaption of interventions in dynamic environments. This form of evaluation is appropriate in complex, dynamic environments where no known solutions to priority problems exist, and multiple pathways to move forward are possible. Innovation is a necessity, while explorations and social experimentations are vital to deconstruct complexity. An example of using complexity-sensitive developmental evaluation would be assessing a local

organization that is committed to eliminating poverty within its community. This differs from the assembly line workers example because poverty: is difficult to define, has multiple and interconnected causes, involves the politics of diverse values, concerns the interests and positions from an innumerable count of stakeholders, is relative (poverty in the United States is substantially different than poverty in Bangladesh), is constantly evolving, and has no obvious answers or measures of success. This distinction serves as the primary focus for the first two chapters.

In chapters three through five, Patton pushes the reader to stretch the limits of his or her imagination. Through a series of detailed personal experiences, Patton effectively communicates his abstract conceptions of “thinking outside the evaluator’s box”, demarcation between simple, complicated and complex tasks and rich descriptions of systems thinking. One narrative that permeated the first two chapters was Patton’s experience working with Tom Henderson, the director of the Caribbean Agricultural Extension Project. This project aimed at improving agricultural extension systems in eight countries in the Leeward and Windward Islands, from Antigua to Grenada, plus Belize. Patton and Henderson aimed to develop a method of evaluation that “makes sense” to their particular project in this specific context. By unearthing the economic, production, farm management, political instability (nationally, regionally, internationally), infrastructure, social, dire weather and organizational uncertainties of leading and managing an agricultural organization in the Caribbean, the evaluators garnered a richer understanding of their situation to appropriately engage issues as they emerge.

Chapter five focuses on six interconnected concepts of complexity that undergird evaluation: nonlinearity, emergence, adaption, coevolution, dynamic interactions and uncertainty. Nonlinearity recognizes the metaphor of the “butterfly effect”; the actions of an object on one side of the planet could have profound implications on the other. The “black swan” metaphor also falls into the category of nonlinearity. For instance, events can seem to be mundane and methodical or time, but occasionally, surprises can spontaneously occur. Emergence is described as the process of patterns emerging from self-organizing interacting agents. Or in other words, what patterns or themes *emerge* from interactions? Elements and agents that respond to each other, in their environment are adaptive. This demonstrates that the content is inextricably linked to the context and

is a sensitive and organic process. Acknowledging that certain processes are unpredictable, uncontrollable, and unknowable defines uncertainty. Plotting the course of a hurricane barreling across the Atlantic would be one such example. The ever-changing interactions within, between, and among subsystems and parts is dynamical. Gauging the social aptitude of a third grade student illustrates this point. Coevolutionary can be defined as the interaction and adaptation of self-organizing agents and ongoing connections that emerge and evolve together. A student learning a foreign language gains both confidence and fluency and become dependent upon each other—an example of coevolutionary.

The next few chapters describe the dualistic nature of the world. Patton illustrates this by describing the two opposing political positions: stakeholders of an organization may believe the most effective method to lead is top-down or bottom-up. He evades this duality by recommending a closer inspection of the middle ground. It is the middle, Patton argues, where knowledge and interests, intersect, collide, get entangled and battle to find common ground. In the context of developmental evaluation, relevant question would include “how are the model’s principles and practices being implemented” as opposed to the more traditional summative question, “has the validated (best practices model) been fully and faithfully implemented.” The former question recognizes differences and compromises. Chapter seven continues this notion of dualism and reframes it by defining it as an “adaptive cycle.” The weather, presidential elections, the ecosystem, the economy and countless other examples follow this natural waxing and waning period. Patton describes how this natural oscillation can be captured in the evaluation. He recommends analyzing baseline fundamentals and system dynamics, testing applications of new fundamentals and system dynamics, determining the tipping point to new fundamentals and system dynamics balance and finding sustainable adaptive balances of new fundamentals and system dynamics in shifting contexts.

The final three chapters offer a hodgepodge of ideas, approaches, examples, rants and pointed topics to stimulate vibrant discussions on how to engage partners in developmental evaluation. Patton uses the metaphor of bricolage (French term used to describe a work, particularly visual arts, which was created using a variety of mediums or techniques) to point to this wide array of possibilities. From reflective practices, sensitizing concepts, action research, abductive reasoning, systems change, and retrospective developmental evaluation, are all valid approaches to developmental evaluation. Sometimes these aspects are used in tandem, and often these approaches overlap and are interdependent. Utilizing these methods unearth and support the development of innovation, creativity and divergent thinking and provide the flexibility for a dynamic and adaptive system.

I find Patton’s notions of developmental evaluation to be quite compelling. This framework provides an insightful resource to approach our chaotic, messy and ambiguous organizations. By providing a plethora of vivid, detailed recollections of lived experiences, Patton demystifies the difficulty of developmental evaluation by illustrating numerous practical examples. He clearly demonstrates that developmental evaluation is not the dream of an idealist; this is one of the greatest strengths of the book. The readily accessible conversational language communicated highly complex and confusing terms, often with supplementary and easy to read graphs and tables. The original terms he coined were not lofty “academese”, rather intuitive and obvious; the “adaptive cycle” is one such example. This book is a highly innovative and creative approach to examining an organization, and I wonder to what extent that implementing these unique ideals to an organization will be met with conflict and resistance. Patton would note that it would be inevitable and it is fertile ground for compromise and development. Of course adoption would not be easy, but many of the examples he provides describes partners who were open and willing to adopt these methods. Working in organizations is an inherently political process and adversity, of some sort, is inevitable. What happens when conflict arises, how is the developmental evaluation compromised or amended? I am not asking Patton for a cookbook of recommendations or prescriptions, but rather a set of guidelines to be cognizant of when facing conflict.

Michael Quinn Patton’s *Developmental Evaluation: Applying Complexity Concepts to Enhance Innovation and Use* is an unusual marriage between social innovators and evaluators, a co-created, dynamic and ever-emergent relationship. Patton reminds us of the famous Woody Allen line, “Relationships are like sharks; they have to keep moving forward or they die.” And it is with this invitation that I invite you to discover the breadth and wisdom of this text, to contribute to the ongoing development of your organization, and continue moving it forward. ♦

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The Office of Community College Research and Leadership (OCCRL) was established in 1989 at the University of Illinois at Urbana-Champaign. Our primary mission is to provide research, leadership, and service to community college leaders and assist in improving the quality of education in the Illinois community college system. Projects of this office are supported by the Illinois Community College Board (ICCB) and the Illinois State Board of Education (ISBE), along with other state, federal, and private and not-for-profit organizations. The contents of our briefs and bi-annual UPDATE newsletters do not necessarily represent the positions or policies of our sponsors or the University of Illinois. Comments or inquiries about our publications are welcome and should be directed to OCCRL@illinois.edu. This issue and back issues of UPDATE can be found on the web at: <http://occrl.illinois.edu>.

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