RAMPING UP: Action Lab 1

STEM Guaranteed Transfer Student Program Partnerships

Interim Report

PAST FOUNDATION
Knowledge Capture Program

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INTERIM REPORT

Introduction

This report provides ethnographic analysis of a one-day workshop entitled "Ramping Up: Action Lab 1," conducted by the Association of American Colleges and Universities (AAC&U) on October 1, 2011. The report presents a summary of discussion themes regarding transfer student program partnerships among 2-year and 4-year institutions for six state groups.

A total of (36) individuals participated in breakout sessions that included (19) individuals from 4-year institutions, and (17) individuals representing 2-year institutions. Morning and afternoon breakout sessions were designed to support structured discussion between 4-year institutions and their 2-year community college partners for a total of (6) morning and (6) afternoon group sessions. The morning session topic focused on "*Lessons Learned in STEM Transfer*." The afternoon session was devoted to group development of "*Action Research Plans*."

The central theme underlying state group discussions focused on identifying mechanisms to better serve community college students aspiring to transfer from the 2-year to the 4-year college or university in a STEM field. The primary focus of this ethnographic analysis centers on issues regarding different strategies in terms of current or planned program development between 4-year institutions and 2-year community college partners. The range of experience includes states that have existing articulation and formalized agreements with multiple partners, to those just initiating a planning process to formalize partnerships for guaranteed transfer program agreements.

This analysis reports on a broad range of issues discussed by the state groups, and presents findings on the commonalities and differences across states in their views of the challenges for developing and sustaining successful, guaranteed transfer programs. This information is presented in a bullet point format highlighting the key observations and experiences of work underway, both in current planning efforts and/or implementation of programs. Tabled data is presented in the appendices and includes potential future actions identified by each state on ways to advance development of their institutional partnerships, ways to

support STEM program alignment, as well as approaches to develop STEM career pathways that can enhance future transfer student success. The report identifies a total of 201 data points across the 12 breakout sessions that are presented in the bullet point section (n=50) and the tabled data (n=166).

Ethnographic Documentation and Analysis

Ethnographic documentation was conducted to record the discussions held during morning and afternoon breakout sessions. Ethnographic observers included the PAST Foundation staff, and five anthropology students from Indiana University/Purdue University at Indianapolis. Ethnographic protocols support a systematic method of inquiry that ensures individual views and perspectives are captured through careful documentation. However, the identity of individual discussion participants was recorded using a number code format. In this manner, ethnographic documentation creates a robust representation of understanding and perceptions about critical issues in the form of an anonymous record that provides perspectives and insights on real problems, and critical gaps and challenges without linking these to any single individual or institution.

Documentation of the breakout session was created both in real time by ethnographic observers, and through transcription of audio recordings made at the time of the breakout session. Each Action Lab 1 participant was provided with a written description of the purpose of the study and documentation methods, and was asked to give their verbal consent for the ethnographic observation and audio recording (see *Appendix A: Verbal Consent*). Verbal permission for audio recording of breakout sessions was given by each participant at the start of the audio recording as part of the recorded session. Additionally, ethnographic observers took notes during the session using laptops. On completion of this work, including transcription of the audio recording, the ethnographic observers were required to submit all files to the PAST Foundation. At the completion of their work, the five anthropology students were required to destroy their electronic files. All existing records remain in a secured file with the PAST Foundation. All electronic files are stored in pass code protected archives, accessible only by the ethnographic research staff, and may not be used for any other purpose beyond this study.

In the bullet point section of the report, references to expressed views and participant statements are indicated with a code that is presented as a set of three numbers, each separated by a dash. For example, a typical citation such as **10-3-115,** represents the code set for the state (10 to 60), the participant number for that state group (3), and the reference to the comment from the transcript of the breakout session (comment number 115). A summary statement followed by a series of code sets indicates agreement of the general idea or theme by two or more individuals. This format allows for attribution as well as quantification of the qualitative data analyzed and is intended to provide context for interpretation of data presented in this report. Tabled data appearing in *Appendix B* identifies comments by state code (10-60), and also indicates statements by session

(Session 1=morning session; Session 2=afternoon session), and by 2-year and 4-year category.

Organization of the Report

The format of the bullet point section utilizes a style of presenting data in which major discussion themes have been identified and used to organize significant sub-themes. The bullet point section incorporates 50 data points that represent summarized views on what is currently known about transfer student characteristics through observation and experience, as well as different actions that have occurred in an effort to address specific program gaps, or other measures that have been explored to meet the needs of transfer students.

Table A presents the major themes and sub-themes identified in the bullet point report and includes two overarching themes:

TABLE A: STEM Transfer Student Program Discussion Themes (n=50)	
Main Themes	Major Sub-themes
1. Institutional Change Essential for STEM Transfer Student Program Success	1.1 Building/Growing Partnerships (n=11)
	1.2 Program/Pathway Alignment (n=12)
	1.3 Assessments/Core Competencies (n=6)
2. Program Components Essential to STEM Transfer Student Success	2.1 Advisory and Guidance (n=10)
	2.2 Transition to the 4-Year School (n=11)

These two main themes are also presented in *Table 1: Potential Actions that Require Institutional Change*, and in *Table 2: Potential Actions to Enhance STEM Transfer Student Success (*see *Appendix B*). These two tables are intended to provide a list of potential actions that were discussed by the state groups and are organized by the Major Sub-themes identified above. In some instances, the actions listed were described as planned coordinated efforts or projects being developed for future implementation. In other cases, the ideas listed are the result of brainstorming among the group. These are included for their potential value to the process of identifying strategic actions to advance changes that support initiating or expanding student transfer programs. A third table also presented in *Appendix B*, *Table 3: Data Needs to Better Inform Development of Transfer Student Programs,* includes three key sub-themes: *3.1 Student Demographic Data*; *3.2 Comparative Program Data*; and, *3.3 Data Sharing*. A total of 166 data points are presented in the three tables. A summary of *Table 1* and *Table 2* are presented in the following section, "*Major Sub-Themes.*"

Two additional issues were identified by several states that are integral to transfer student program success and are discussed here briefly as a prelude to the focus of this report. The first issue concerns questions raised by one state group regarding the potential range of

disciplines that could or should be considered within the STEM fields beyond specific courses in science, technology, engineering and mathematics. Discussion included a brief exploration of ideas about allied health and nursing, computer science, instructional technology, as well as teacher education, and the relevance and importance of these fields in creating STEM career pathways (50-4-59).

A second important theme emerged for some states that have embarked on actions supporting curricular alignment for mathematics, chemistry, physics or engineering. For these states, the discussion included reference to specific actions under way to address unique elements of their programs, including committee work and anticipated next steps to support continued progress with vertical course alignment between their respective 2-year and 4-year programs. These issues are presented in summary form in this report and do not reflect specific details of individual school program needs that could identify the state college or university.

While both issues highlight fundamental aspects of the alignment needs for those individual partnerships, of greater value to this analysis is the broader set of issues related to understanding the process by which institutional agreements are structured as a holistic enterprise. From this perspective, group discussions centered on ways to jointly develop agreements that maximize the full resources of the partner institutions as well as consideration of who needs to be involved. These ideas included innovative involvement of administrators, faculty, and counselors to more effectively engage transfer students prior to, during and following entry to the 4-year school. More specifically, what we seek to understand are the relevant insights offered from the experience of these six state groups that inform ways in which formal partnerships are structured within the context of a regional or statewide framework for institutional transfer program alignment. The essential issues identified by the six state groups include two main actions: first, the need to better understand the characteristics of transfer students in order to better meet their particular needs; and second, the way in which programs can potentially be reorganized to support a seamless advancement for transfer students from the 2-year to the 4-year learning institution.

Major Themes and Sub-Themes

The two main discussion themes identified in the analysis are "*Institutional Change*," and "*Transfer Student Support*." These two general concepts help to frame many of the issues associated with transfer student programs both in terms of potential actions presented in Tables 1 and 2, and in sharing observations and experiences of work underway presented in the bullet point section of the report. These two main themes provide an organizing context in which to further explore the views expressed by the six state groups. *Table B: Summary of Potential Actions Identified in Action Lab 1*, presents a comparative summary of the major-subthemes and relevant issues considered by the state groups for future action (see *Appendix B*).

TABLE B: Summary of Potential Actions for STEM Transfer Student Program Development						
DESCRIPTION	STATE CODES					
	10	20	30	40	50	60
1. Potential Actions That Require Institutional Change (Table 1 Total n=56)						
1.1 Building/Growing Partnerships (n=16)						
1.1.1 Leadership and Stakeholder Engagement		•			•	•
1.1.2 Joint 2-Year/4-Year Institutional Action	•	•			•	•
1.2 Program/Pathway Alignment (n=32)						
1.2.1 Need Both Vertical and Horizontal Alignment	•	•				•
1.2.2 Create Transfer Student Pathway Based on Programmatic Alignment	•	•	•		•	•
1.2.3 Strategies to Incentivize Completion of the Associate Degree	•				•	•
1.2.4 Create STEM Certificate						•
1.3 Assessments/Core Competencies (n=8)	•	•				•
2. Potential Actions to Enhance Transfer Student Success (Table 2 Total n=40)						
2.1 Advisory/Guidance (n=16)						
2.1.1 Joint Advisory	•	•	•			•
2.1.1 Early Advising	•		•	•	•	
2.1.2 Online Advising	•	•				•
2.2 Transition to the 4-Year School (n=24)						
2.2.1 Summer Bridge Programs and Early Enrollment	•	•		•		
2.2.2 Create Transfer Student Learning Communities	•	•			•	•
2.2.3 Create Applied Learning Opportunities Targeted to 2-Yr Students	•			•	•	
2.2.4 Financial Support					•	•

(See Tables 1 and 2 in *Appendix B* for a more detailed presentation of these potential actions. Note, also found in *Appendix B* is *Table 3: Data Needs to Better Inform Development of Transfer Student Programs*, Total n=70; Total n=166 for all three tables.)

A brief review of these themes is presented here in terms of concepts and actions that were discussed by at least four of the six states including existing observations and experiences that are presented in the bullet point section.

Building/Growing Partnerships: In *Table B*, we see that the most widely discussed issue across the six state groups was "*Program/Pathway Alignment.*" Issues centered on understanding vertical alignment beyond specific STEM course curriculum, to the broader framework of program alignment between partner institutions. The salient observations of both 2-year and 4-year administrators and faculty is underscored by the trends reflected in both anecdotal observations and statistical reports cited by participants regarding the consequences of programmatic gaps between institutions that often lead to a "misalignment of programs" (10-1-118, 10-4-164, 10-6-136). From the perspective of both 2-year and 4-year schools, it was noted that "misalignment" outcomes can lead to major challenges for transfer students, both in extended time to completion of the baccalaureate, and in added costs of repeating courses. Together these challenges can result in a transfer student losing momentum and ultimately dropping out of the 4-year degree program.

Advisory/Guidance: Early advising on required STEM coursework (prerequisites) as well as guided assistance in preparing for university or 4-year college placement tests (e.g., math or English) was identified and widely discussed as another effective measure for reducing time to degree completion. Citing success with early advising, additional interest in developing joint advisory programs by partner institutions was also identified as an important element of early advising. This includes ideas about developing joint 2-year/4-year teams, bringing faculty into the process, and developing peer and other mentoring opportunities for transfer students before they transfer to the 4-year school.

Another important aspect of meeting transfer student needs involves bringing high schools (10-5-80, 30-3-64b) and junior high schools into the alignment process. Also noted in this view is recognition that underserved high school student populations are best reached through early advising at a point when math and science are typically avoided by high school seniors for a range of reasons, including counseling that promotes low risk courses for maintaining a competitive GPA (20-4-130). Additionally, one state noted that when early college high school students take college level courses, even if they are not ready for college level study, there is still the potential that the experience helps the student to better understand how to prepare for transfer to the 4-year school (50-3-41).

Transition to the 4-Year School: The view that transfer students can benefit from opportunities to build a social context for success was based on existing, successful small-scale efforts to organize the formation of peer "learning communities." Creating learning communities where students can join together with fellow transfer students, faculty and others who can help guide the initial transition to the 4-year school provides transfer students critical support in ways similar to the experience of freshmen students entering the 4-year institution directly from high school. In this view, a fuller, richer experience including mentoring and multiple ways to connect students with their field of interest helps develop essential motivators that encourage students to persevere to degree completion.

A last point to consider is the value of creating opportunities for transfer students to participate in faculty-student research projects, or gain direct experience in learning about STEM professions through mentoring or internships. The involvement of faculty of both 2-year and 4-year schools was identified as a key factor in providing meaningful opportunities for students to gain first-hand knowledge of the STEM potential for career development.

Next Steps

The insights expressed across state groups reflect a range of potential actions that in some cases have already been put into practice with demonstrated effective outcomes. A number of these actions were reported to provide stronger support mechanisms for transfer students. However, for the most part these actions were conducted on a small scale through short-term grants and other targeted pilot efforts that are now ready for expanded implementation. As one administrator commented, "institutional change has to come" in ways that will "move from small scale transfer student projects to operationalize the changes needed at full scale (10-6-101).

The participants in "Ramping Up: Action Lab 1" contributed their knowledge and shared experience with other higher education learning institutions in a process initiated by AAC&U and supported by a grant from the Bill and Melinda Gates Foundation. This effort is intended to help jump-start actions of leading states in efforts to establish successful transfer student programs. In March 2012, the AAC&U will hold a second meeting, "Ramping Up: Action Lab 2." This meeting will build on the work of Action Lab 1, further exploring the issues and actions underway that are targeted to better serve the goals of community college students who desire to complete a 4-year degree.

AAC&U Action Lab 1 participants hold a shared view, whether early in the process of creating transfer student partnerships or midstream in expanding early, small-scale efforts. The expressed view in most instances was that these challenges could be solved through jointly supported action to implement significant, broad-scale changes for improving higher education. Based on the work of early states leading these efforts, transfer students may soon see the types of changes that will allow them to achieve a dearly held dream of attaining a professional degree. In that achievement, they will join the ranks of the national STEM workforce essential to the future of each state and of the nation as a whole.

1. Institutional Change Essential for STEM Transfer Student Program Success

1.1 Develop Working Partnerships:

- Conduct joint 2-year/4-year effort to align programs leading to pathways with both vertical alignment (across 2-yr and 4-year programs) and horizontal alignment (across 4-year programs); work jointly to create a systemic framework of vertical and horizontal program alignment at the regional level if not statewide; develop committees that include both administrators and faculty (10-1-94, 10-4-147, 10-4-164, 10-4-183, 10-6-193, 20-4-116, 20-7-84, 20-7-97a)
- Conduct joint 2-year/4-year administrator meetings to assure support for faculty in their efforts to establish data sharing and program alignment actions focusing on jointly identified learning outcomes and student success strategies; Deans need to be involved because they must lead the articulation process (20-2-258, 20-3-3b, 20-7-115, 60-2-7a)
- Hold joint 2-year/4-year meetings to create coordinated solutions addressing low-enrollment including identifying ways to consolidate enrollment across different campuses through summer session courses (20-8-87)
- Conduct a joint faculty effort to create STEM program certifications (60-4-88, 60-3-96)
- Enhance communication between 2-year/4-year institutions to facilitate data sharing to support transfer student success, e.g., the 2-year could provide more than transcript data, expanding information to include advisory notes or other markers that identify transfer students who are "at risk"; communicate progress on transfer student program development through presentations to partner institutions (10-1-58, 20-3-266)
- Address the issue of competition across campuses to foster collaboration and support for systemic change (50-5-34)
- Establish leadership in organizing and coordinating formalized joint discussions, and in facilitating joint actions essential to successful outcomes; work jointly to create a sense of urgency for STEM transfer student programs (20-3-107, 20-3-101, 20-7-97, 50-1-54, 60-5-12a)
- The 4-year school needs to formalize the stakeholder process and determine essential changes; coordinate with the 2-year school to identify different resources available across schools to implement those changes (20-2-99, 20-3-103, 20-5-178, 20-7-98)
- Determine key stakeholders who can participate in developing transfer student programs; include faculty and students; develop incentives for faculty to engage; identify people who can sustain a commitment of involvement, minimizing setbacks related to bringing new people into the process (20-1-56, 20-1-80, 20-4-84, 20-7-57, 50-5-39)

- Conduct annual meetings with staff, not just administrators, to develop solutions that address gaps and needed improvements; annual meetings could address and eliminate duplication of work (20-4-4, 30-2-36)
- Build partnerships across the state with government and industry in ways that will support programs and encourage students to pursue STEM careers; create joint research projects among 2-year and 4-year faculty and industry that offer community college students opportunities to engage (10-6-13, 40-1-58, 50-8-64)

1.2 Program/Pathway Alignment

- Address program alignment issues beyond curriculum to consider alignment of entire programs; consider scheduling for "program level alignment" to eliminate conflict in accessing courses; program-level alignment is leading to a major cultural shift in how we see ourselves; program alignment can better serve transfer students who are at a "pre-professional" stage of their education (10-1-182, 10-7-28, 20-7-26b)
- Formalize alignment agreements to assure the alignment is institutionalized and builds on faculty-to-faculty agreements; program alignment can increase development of distance learning courses offered across institutions to help fill the gap; systemic articulation agreements will allow students to have options without having to take multiple core courses to qualify for admission (10-1-192b, 20-7-86, 20-7-125, 50-4-51)
- Consider how program "misalignment" affects transfer student decisions; consider what alignments will encourage choosing the best time for transfer; misaligned programs can cause students to transfer before they are ready; misalignment can occur when programs are trying to serve different pathways (e.g., science for health professionals vs. science for engineers); misalignment also leads to forcing students to consider different pathways when they shouldn't (10-1-118, 10-1-182, 10-4-164, 10-4-183, 10-4-187, 10-6-136)
- Utilize existing articulation agreements to develop new partnerships focused on STEM fields (e.g., engineering or allied health professions, teaching); formation of an articulation task force is an effective way to proceed (50-5-62, 60-3-47, 60-3-49)
- The trend for 4-year institutions to develop specialized lower division STEM courses has to be addressed in developing transfer agreements between 2-year and 4-year institutions; utilize online resources to offer specialized lower-division STEM courses; allow concurrent enrollment for students to take required specialized lower-division STEM courses (20-3-124, 20-4-92, 20-5-96, 20-7-123d, 50-2-11c)
- Create agreements between 4-year schools on core transfer requirements that allow students to retain their 2-year credits; create a seamless pathway between the 2-year and the 4-year program so the 4-year program picks up where the 2-year leaves off; create program alignment encouraging students to complete the Associates degree before transferring, assuring they enter at the junior level (10-1-94; 10-7-142, 10-8-119)
- Create systemic program alignment on a regional scale; a regional scale will allow for input from industry and local business on STEM skills and priorities; a regional scale would allow students to take courses from different schools specializing in some aspect of STEM; a regional framework is more systemic and would include summer courses offered

as part of a larger coordinated program (10-6-146, 20-4-116, 20-5-116, 20-7-84, 20-7-86, 20-7-97b, 20-7-123c)

- Consider how courses are taught (pedagogy) as a component of alignment; consider how a program context reframes the philosophy of teaching and learning in order to meet the needs of the program as a whole (10-4-153, 20-7-32)
- Build STEM pathways with enough flexibility for students to grow, mature and change their goals; create core courses that serve different outcomes: 1) student gets a STEM job with or without a degree; 2) student gets an associate degree in a STEM field; and, 3) student transfers to a 4-year STEM program; align programs to serve multiple STEM pathways so students don't transfer with "wasted credits"; students that transfer with an Associates degree still repeat courses, causing them to extend the time to completion of the baccalaureate (10-1-182, 10-3-180, 10-4-187, 10-4-189, 50-5-79)
- Some STEM pathways for certain degrees should be considered for alignment from high school, to community college, to the 4-year school; include middle schools in program alignment; information on STEM pathways should be available online for students, parents and faculty (10-5-80, 30-3-238)
- Creating STEM certification will inherently achieve curriculum alignment (60-4-67)
- Focus on strategies that support scaling-up small, successful models to reach 90 or 100 students (10-6-101, 10-7-89, 10-9-103)

1.3. Assessment/Core Competencies

- Develop an agreed upon core set of competencies assuring deep content understanding supported by lab experience; define desired outcomes and then design assessment of core courses; focus assessment on core learning objectives and student ability to achieve them (10-1-192a, 10-4-191, 10-4-193, 10-7-144, 60-1-57)
- Identify core competencies for multiple STEM pathways (60-1-82)
- Provide students with modular course materials and a self-assessment opportunity, allowing them to review, identify and address knowledge gaps, and build self-confidence; offer students opportunities for review and assistance in preparing for placement exams; students who participated in guided preparation and review for placement exams placed up to four levels higher than they placed on their initial content review (20-3-140, 20-4-130, 50-1-12)
- 4-year schools should provide better and more feedback to 2-year schools about their students after they transfer (60-1-104)
- Develop STEM assessments that will increase faculty confidence in the potential for transfer program success (60-1-57, 60-1-59)
- Coordinate assessment of STEM certification to assure accreditation of 4-year requirements (60-1-71, 60-1-82)

2. Program Components Essential to STEM Transfer Student Success

2.1. Transfer Student Advisory/Guidance

- Early advisement is key to identifying community college student interests in a STEM major; early advising to community college students has been successful and as a result, the next phase will be to extend advising to high school students; high school outreach starting with freshmen is important to guide them toward higher level math "pathway" that matches their potential, versus taking less challenging courses to protect their GPA (20-4-130, 30-3-64b)
- Expand advisory opportunities by bringing in graduate student counselor interns (20-7-53)
- Counselors need to be prepared and trained to provide career counseling, shifting from their traditional focus on the major disciplines only; counselors do not operate within a "programmatic framework"; it isn't possible for counselors to be informed on rapid changes in STEM career options and therefore faculty and others should also engage in advising students; counselors are not typically informed on specialized lower-division STEM courses offered by some 4-year schools; providing a "transfer guide" for counselors is essential to assuring that students have access to the information, and should also be made available online (20-2-68, 20-2-78, 20-7-73, 20-8-77, 30-2-75, 50-5-39)
- Engineering faculty should engage with advising community college engineering students to prepare them for the transition to the 4-year school and assure that they have completed the necessary courses; students with inadequate counseling end up transferring without their pre-requisites completed (20-2-70, 30-2-74)
- Students that transfer to the 4-year school with half their credits completed toward the baccalaureate often discover that they have not taken the right courses for the degree they are pursuing, requiring additional coursework to complete the 4-year degree; advisory should include guidance on the value and benefits of completing the Associate degree before transferring; advisory should include counseling to avoid transfer to the 4-year school before the student is ready (10-1-118, 10-2-56, 10-4-57a, 10-6-110, 40-2-57)
- Faculty advisement is essential to directing individual students; faculty advisement is key to guiding students as they prepare to declare majors (40-1-95, 40-2-82)
- Community college students are more interested in transferring when they are able to visit different STEM 4-year schools; "pathways" agreements should incorporate these kinds of connections to stimulate interest in STEM and transfer opportunities (50-3-11)
- Online counseling gives students the option to check their progress as often as they want (20-3-74)
- Peer mentoring is very effective in advising first-year transfer students on realistic strategies for course loads; peer advisors are essential in assisting transfer students to adjust to the 4-year program (10-5-86, 50-3-70)

- Transfer students need to learn to develop faculty relationships, how to apply for internships and paid summer research opportunities; internships are an important way for transfer students to gain "authentic experiences" in STEM fields, including paid internships; open avenues for "industry mentors" to work with transfer students to help them connect with "what's out there for them" (10-5-85, 50-6-67, 50-8-72)

2.2. Transition to the 4-Year School

- Students that transfer with an Associate degree are typically more successful than students who transfer prior to completing the 2-year degree (10-4-42)
- Consider strategies including development of "reverse transfer" policies to encourage completion of the Associate degree; a reverse transfer program encourages students to transfer at the right time, allowing students to take general education courses at the 4-year school; the reverse transfer option can help students attain the Associates degree, boosting their confidence toward completing the 4-year degree; increase the momentum for transfers to the 4-year school by offering reduced tuition or guaranteed admission and also reverse transfer credit options to allow them to complete a degree, giving community college transfer students a credential with labor market value (10-4-52, 10-4-57, 50-1-21, 50-3-23b)
- Student success increases through 1-credit transfer seminars, which help improve basic study skills and provide first-hand exposure to STEM industries and professions through field trips; students in a pilot project who received additional support through targeted seminars and other programs aimed at transfer students were given assistance in connecting with faculty and deans; these same students also benefitted from receiving orientation materials providing basic information on "pathways" to the B.A. or B.S., and were able to develop a planned strategy with ongoing advisement as they prepared for entry to a specific major; small group pilot projects designed to provide advisory targeted to math and STEM fields are effective but expensive, need to find ways to efficiently operationalize the program to scale (10-5-80, 10-6-101a, 10-7-87)
- Change policies for transfer students by offering early registration, giving access to classes needed to ensure that students get a good start in their first semester in the 4-year school; (10-6-99, 10-7-97,10-8-175)
- Targeted support to develop transfer student "learning communities" is an effective way to scale programs to reach 90 to 100 students; creating community or group identity opens up the potential for shared experiences among students with similar backgrounds facing common challenges in transitioning to the 4-year school; developing learning communities for transfer students requires that we think about how the learning community experience should be designed for transfer students; conduct a summer "boot camp" similar to that for freshmen to build "peer relations"; building community among transfer students is an important aspect of supporting success beyond articulation agreements (10-5-48, 10-5-96b, 10-7-89, 50-4-47, 50-4-66, 50-7-49, 60-1-8)
- "Targeted, intensive support programs" providing more than core content focus for students include learning how to manage their lives so that they are successful, and

creating a mindset that supports planning for graduate study; guidance should include life skills and emphasize value of creating supportive social relations (50-4-46, 50-7-73)

- Summer bridge programs offer transfer students the opportunity to develop a sense of community, establish friends with other transfer students, and help reduce their fears as they enter the 4-year school; small-scale summer bridge programs are expensive to operate and "help the few at the expense of the many" (20-2-147, 20-8-146)
- Dual enrollment programs offer students an opportunity to explore resources at different schools (10-2-5)
- Find ways to provide first-year transfer students with the " freshman experience" to facilitate a smooth transition to the 4-year school (10-4-65, 50-5-48)
- Provide support for commuter transfer students in ways that they can access from off-campus in order to benefit from resources available to first-year transfer students (10-5-77)
- Early college high school students can benefit from taking college courses at the 4-year school even if they discover that they are not ready to enter the university at graduation, the experience helps them understand and better prepare for the 4-year school; community colleges need to work with high schools to focus on early college high school student preparation (50-3-41)

Appendix A

Verbal Consent:
Ramping Up - Action Lab 1
October 1, 2011

RAMPING UP
ETHNOGRAPHIC DOCUMENTATION: Verbal Consent
PAST Foundation, Knowledge Capture Program
October 1, 2011

The PAST Foundation is joining with the Association of American Colleges and Universities in supporting the *RAMPING UP* Project to document the series of group dialogues that will be conducted as part of Action Lab 1 conducted on October 1, 2011. To accomplish this important work, the PAST team of anthropologists and ethnographers will include five graduate and undergraduate students from the Anthropology Department of the Indiana University/Purdue University at Indianapolis. Together the PAST anthropologists and student ethnographers will be documenting the day's events including breakout sessions and reports given from those sessions.

Each of the breakout sessions will include an ethnographic observer who will be taking notes during the discussion. The sessions will also be audio recorded for the purpose of providing an accurate record of the ideas and issues identified by each of the discussion groups.

The information developed through the ethnographic documentation will not identify individual participants by name, but will focus instead on stakeholder perspectives (e.g., community college or university). The notes produced by the ethnographers will be used solely by the *RAMPING UP* core project team to support the design process that will follow from Action Lab 1, and will help to inform the project planning effort building toward Action Lab 2 to be held in 2012.

During the breakout sessions today, you will be asked to give your verbal consent for the audio recording. We hope you will agree this is an important component of the *RAMPING UP* Project and will give your full support to the ethnographic documentation process. If at any point during the *RAMPING UP* Project you wish to withdraw your comments from the project you may do so by contacting the PAST Foundation.

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Appendix B

TABLE 1: Potential Actions That Require Institutional Change (n=56)

TABLE 2: Potential Actions to Enhance STEM Transfer Student Success (n=40)

TABLE 3: Data Needs to Better Inform Development of STEM Transfer Student Programs (n=70)

TABLE 1: Potential Actions That Require Institutional Change (Total n=56)												
S 1	S 2		2 YR	4 YR	DESCRIPTION	STATE CODES						
						10	20	30	40	50	60	
1.1 Building/Growing Partnerships												
					1.1.1 Leadership and Stakeholder Engagement (n=9)		•			•	•	
•				•	Get state legislation and government to encourage high-tech industry in state, changing perception of available STEM jobs and getting people excited so students see value in hard work					•		
•			•	•	Leadership should come from 4-year; 2-years are "brokers of [4-year] programs"		•				•	
•	•		•		Determine if the 2-year or the 4-year institution is going to start the process to bring everyone together		•					
•			•		Create a statewide Deans' organization to support transfer student data sharing and to help increase focus on data issues and needed support for faculty action		•					
•			•		Need faculty input to growing the transfer program					•		
	•		•	•	Determine stakeholders to know who should be at the table		•					
	•		•		Formalize conversation between stakeholders		•					
	•		•		Students need to be at the table of stakeholders		•					
	•		•		Have faculty champions supported by administration and presidents (so they are supported with adequate time and resources to be effective)		•					
					1.1.2 Joint 2-Year/4-Year Insitutional Action (n=7)	•	•			•	•	
•			•	•	Work together to create seamless transfer/pathway	•						
•				•	Build "agenda of urgency" around STEM student transfer so that 2-year and 4-year Insitutions will work together and take action					•		
•			•		Get faculty from 2-years and 4-year together to discuss student learning outcomes and success strategies						•	
•				•	Work together to get transfer student programs "kick[ed] into gear"						•	
	•			•	Incentivize faculty to be involved (going down to the Human Resources level of hiring]		•					
	•		•		Solidify early efforts through presentation of work to each other's schools		•					
	•		•	•	Joint faculty effort to work on STEM certification						•	
1.2 Program/Pathway Alignment												
					1.2.1 Need Both Vertical and Horizonatal Alignment (n=7)	•	•				•	
•			•	•	Correct program "misalignment" to encourage student transfer at junior level	•						
•			•	•	Develop agreed upon statewide core competencies that allow students to transfer from 2-year to 4-year in the state and retain their 2-year completed credits	•						
•			•		Consider that course alignment will reflect regional differences that incorporate local industry needs and priority skills	•						
•				•	Consider vertical alignment needed between 2-year and 4-year programs, and horizontal alignment that needs to exist across 4-year institutions in the state	•						

S1	S2		2 YR	4 YR	DESCRIPTION	STATE CODES					
						10	20	30	40	50	60
•				•	How courses are taught are another area of alignment to consider as type of alignment to attain, e.g., the content in chemistry is fixed but the way it is taught varies; program alignment requires rethinking the philosophy of teaching and learning in order to meet the needs of the program as a whole	•	•				
•				•	Align programs to serve multiple pathways so students don't waste credits; core courses have to serve three different pathways: 1) Student gets a job with or without a degree; 2) Student gets an Associate degree; 3) Student transfers to a 4-year school	•					
•			•		Develop reciprocal agreements in STEM fields with other 2-year insitutions where basics and prerequisites are accepted between them [set up for STEM what is already being done in health care]						•
					1.2.2 Create Transfer Student Pathway Based on Programmatic Alignment (n=14)	•	•	•		•	•
•			•		Evaluate if 2-years are creating obstacles to transfer and completion	•					
•				•	Work on alignment beyond course content for rich 4-year experience	•					
•			•		Evaluate potential obstacles at the 2-year insitution to transfer and completion	•					
•			•		Create program of study; scheduling of classes should be done for the "program" as a whole		•				
•			•		Make alignment systemic and regional, with agreement at 4-year level on core transfer requirements		•				
•			•		Work jointly on development of program alignment		•				
•			•		Include deans in faculty discussion on curriculum alignment to support creation of articulation agreements		•				
•			•		Create scheduled program of aligned course offerings including through online distance learning		•				
•				•	Increase momentum for transfer students with reduced tuition, guaranteed admission, reverse transfer credit, credentialing from 2-year					•	
•				•	Create articulation agreements for STEM fields based upon transfer credits, looking at how to build them out using existing program agreements						•
•			•		Develop reciprocal agreements in STEM fields with other 2-year insitutions where basics and prerequisites are accepted between them (use the health care model for STEM)						•
	•			•	Create mutually agreed upon pathways from high school to 2-year to 4-year, with online information accessible to parents, students and teachers; bring middle schools into alignment process	•		•			
	•			•	Develop cross-functional team to review how transfer students are viewed and how programs are organized			•			
	•		•		Build STEM pathways with enough flexibility for students to change their area of focus as they progress toward selecting a STEM field/major					•	

S1	S2		2 YR	4 YR	DESCRIPTION	STATE CODES					
						10	20	30	40	50	60
					1.2.3 Strategies to Incentivize Completion of the Associate Degree (n=8)	•				•	•
•			•	•	Work on reverse transfer policy to allow students to complete Associate degree after transferring to the 4-year Institution	•					
•				•	Emphasize benefit of preparedness for easier transfer [at what point do transfer students advance to 4-year in a way that best serves the transition to occur when students are ready to transfer]	•					
•			•		Evaluate obstacles to transfer and completion at the 2-year instiitution	•					
•			•		Create distance learning format for courses with low enrollment to ensure access to required courses					•	
•			•	•	Reverse transfer credits would allow students to take some Gen Ed courses at the 4-year institution allowing them to take a mix of core STEM courses and Gen Ed; otherwise, they will have to complete all their Gen Ed at the 2-year institution and then following transfer are forced into fulltime enrollment of core courses only [can be very difficult for some transfer students; they need balance]; consider creating an Associate of Applied Science degree; reverse transfer allows students to transfer at the right time	•				•	
•			•		Consider creating an Associate of Applied Science degree					•	
•			•		Offer 4-year courses at 2-year campus to help students complete required courses, opening up access for students						•
	•			•	Incentivize completion of Associate degree with early registration	•					
					1.2.4 Create STEM Certificates (n=3)						•
	•		•	•	Creating a STEM certification will inherently achieve curriculum alignment						•
	•		•		Develop consistent pedagogy for STEM certification 60-4-102						•
	•		•	•	Coordinate assessment of STEM certification to assure accreditation of 4-year requirement; identify core competencies or outcomes for multiple pathways in STEM disciplines						•
1.3 Assessments/Core Competencies (n=8)											
						•	•				•
•				•	Determine what is "competency" and how it will be measured	•					
•				•	Define outcomes of program and then design assessment of core for desired outcomes	•					
•				•	Create institutional memory for program and student assessment to formalize assessment beyond individual faculty or administrator commitments	•					
•				•	Focus assessment around student learning--look at course objectives and if students can achieve them	•					•
•				•	Develop an agreed upon core set of competencies that assures deep content understanding that includes lab experience	•					
•				•	Help faculty become more accepting of transfer programs by developing STEM assessments						•

S1	S2		2 YR	4 YR	DESCRIPTION	STATE CODES					
						10	20	30	40	50	60
	•			•	Provide better feedback to 2-year partners about their students						•
•			•		Conduct student outreach to offer refresher or preparation for placement test as effective means to help students place higher on the assessment exam. Without this it can take up to 3 semesters to get to math 1 after they transfer		•				

S1=Morning Breakout Session; S2=Afternoon Breakout Session

TABLE 2: Potential Actions to Enhance STEM Transfer Student Success (Total n=40)												
S1	S2		2 YR	4 YR	DESCRIPTION	STATE CODES					
						10	20	30	40	50	60
2.1 Advisory/Guidance											
					2.1.1 Joint Advisory (n=6)	•	•	•			•
•			•		Reframe counseling programmatically to help struggling students		•				
•	•		•	•	Conduct joint advising by 2-year and 4-year with commitment on both sides	•		•			•
•			•		Create jointly advised STEM honor society with academic credentialing						•
	•		•		Joint advisement enhanced through online access	•					
•	•		•	•	Help faculty think more globally about advisement and outreach to potential transfer students; help faculty to become more aware of transfer student needs		•				•
	•		•		Enhance advisement at both 2-year and 4-year						•
					2.1.2 Early Advising (n=5)	•		•	•	•	
•			•		Provide 2-year student with opportunities to visit 4-year and bring faculty from 4-year to 2-year					•	
	•			•	Advisors connecting early in process to student research cohort through social media	•					
	•		•		Provide 4-year advisors to transfer students before they start at 4-year	•					
	•			•	Develop 'student success' faculty working group to address preadmission academic advisement			•			
•	•			•	Early advisement for high school students			•	•		
					2.1.3 Online Advising (n=5)	•	•				•
•			•	•	Implement online counseling laying out requirements		•				
	•		•		Joint advisement enhanced through online access	•					
	•		•		Use online methods and Skype for flexibility in advising	•					
	•			•	Identify models of virtual advising potentially in use in the fields of business or medicine	•					
	•			•	Add online admission and advising to growing online programming						•
2.2 Transition to the 4-Yr School											
					2.2.1 Summer Bridge Programs and Early Enrollment (n=6)	•	•		•		
•			•		Consider shift to early enrollment for transfer students to give them opportunity to get started with the right courses	•					
	•		•		Provide early registration, campus visits, 4-year advisors to transfer students before they start at 4-year	•					
•				•	Create small learning communities/summer bridge programs		•				
•				•	Create flexible options for cross/summer offerings to compensate for low enrollment		•				
	•			•	Engage 2-year students with summer bridge programs				•		
	•			•	Scale up number of students impacted by summer bridge programs				•		
					2.2.2 Create Transfer Student Learning Communities (n=11)	•	•			•	•
•			•	•	Give transfer students freshman-year orientation experience to bring them into 4-year community					•	
•			•	•	Create STEM learning communities connected with 4-year pathway						•
•			•		Develop STEM student organization to encourage peer-to-peer support						•
•			•		Make transition easier by developing experiences so they feel part of a group before they get to 4-year						•
•				•	Get faculty/department onboard to help develop community-building experiences, can't all be done by administration						•
•				•	Create online learning community around some STEM courses beginning in 2-year and continuing when students move to 4-year						•
	•			•	Build transfer student community before they transfer	•					
	•		•		Reach out through social media to bring students into community before they transfer	•					
	•		•	•	Create cohorts for transfer students before they arrive so they can connect similar to freshmen; use social media to introduce 2-year transfer students to each other	•					
	•		•		Develop diverse team for student support informed as to the value and role in helping students make a successful transition		•				
•				•	Provide life skills and social support to transfer students					•	

TABLE 2: Potential Actions to Enhance STEM Transfer Student Success (Total n=40)												
S1	S2		2 YR	4 YR	DESCRIPTION	STATE CODES					
						10	20	30	40	50	60
					2.2.3 Create Applied Learning Opportunities Targeted to 2-Yr Students (n=5)	•			•	•	
•				•	Scale successful programs, such as targeted learning communities, applied learning experiences	•					
•			•	•	Provide authentic experiences such as internships related to fields of study; identify industry mentors for students to show them reality of job/field					•	
	•		•		Create a research community with 2-year faculty, 4-year faculty, industry and partner labs and bring research opportunities to students	•					
	•		•	•	Link 2-year students with 4-year undergraduate research activities	•			•		
	•			•	Outreach by 4-year to 2-year students to bring them in on undergraduate research opportunities	•					
					2.2.4 Financial Support (n=2)					•	•
•			•		Provide financial support to keep students from working too many hours outside of school					•	
•			•		Provide transfer scholarships in STEM field						•

S1=Morning Breakout Session; S2=Afternoon Breakout Session

TABLE 3: Data Needs to Better Inform Development of STEM Transfer Student Programs (Total n=70)

S1	S2		2 YR	4 YR	DESCRIPTION	STATE CODES					
						10	20	30	40	50	60
					3.1 Student Demographic Data (n=51)	•	•	•	•	•	•
•				•	Need to disaggregate data by 2-year institution and when transfer occurred to see difference between performance of transfer students and native students	•					
•				•	Confirm with data retention rate of transfer students versus 1st year students at the 4-year level	•					
•				•	Need data by semester to see point of transfer; track transfer students by semester following transfer to 4-year to follow their progress	•					
•				•	2-years track students on exit to determine what happens to students as they leave	•					
•			•		Compare data on performance of residential transfer students vs. native commuter students	•					
	•		•		Research which support services work best for transfer students 10-2-46a	•					
	•			•	Need data to show why early registration helps transfer students succeed	•					
	•		•		Determine percent of curricular alignment needed to provide opportunity for transfer students to be successful in a STEM program	•					
•			•		Interested in data on transfer student success vs. native student success; percentage of transfer students who are underrepresented minorities		•				
•			•		Look at data for completion to ensure it is not "skewed"		•				
	•		•		Investigate whether STEM students achieve higher placement in courses with pre-test review		•				
	•		•	•	Learn characteristics of those students who complete on time and how they did it; data is in chancellor's office; on-time looks different for those who work their way through college; completion in different majors is different		•				
	•		•		Collect data from students on reasons for withdrawing from course		•				
	•		•		Need data on why students change majors		•				
	•		•		Get information on highest level of math taken in high school by STEM students and where that parlays into placement		•				
	•			•	Look at data for number of hours per week students work		•				
	•			•	Coalesce data on graduation rates			•			
	•			•	Collect data on all transfer students			•			
	•			•	Determine how students are tracked when they enter with a declared major then change majors			•			
	•			•	Confirm changes in major by transfer students compared to native students			•			
	•			•	Get historic data on transfer students before the alignment so that there is baseline data			•			
•				•	Data issue with tracking transfer student success is that graduation only tracked for full-time students who enter 1st year freshman fall term				•		
•				•	Data needs to be disaggregated by cohort to track transfer student success				•		
	•			•	Gather information from students about the 4-year's shortcomings				•		

S1	S2		2 YR	4 YR	DESCRIPTION	STATE CODES					
						10	20	30	40	50	60
	•			•	Document information on students' reasons for leaving school to determine barriers for success				•		
	•			•	Get information on how often students change majors within college, how often students transfer between institutions				•		
	•			•	Gather data on student engagement institution-wide, beyond summer term				•		
	•			•	Collect data on how many students leave the 4-year to go to another 4-year				•		
	•			•	Evaluate work done with homeless transfer students				•		
	•			•	Look at data on competency level at entry; progress through program; stopping points [who, how many, why]; advising effectiveness [surveys and focus groups]; post-graduation tracking				•		
•			•		Need "granularization" of data to understand where drop-off points occur at a smaller scale					•	
•			•		Conduct qualitative and quantitative research to better define tranfer studen characteristics					•	
	•		•		Identify where students are coming from and use the data to build pathways that connect with those entry points and to help recruit them and prepare them for when they enter the 2-year school					•	
	•		•		Collect data on incoming minority students that could help identify potential interest in STEM					•	
	•		•		Support STEM student needs and advisement with data on learning styles					•	
	•			•	Look at who is coming into program, why they are interested and what are their differences					•	
	•		•		Disaggregate data by age, ethnicity, high school, aptitudes, early indicators of interest					•	
	•			•	Identify who is coming, who is not showing up and alignment with early indicators					•	
	•			•	Look at social predictors for persistence and completion					•	
	•		•		Identify which student is going to do better in different kinds of environments [what are the common problems successful STEM 2-year students face at 4-year level upon transfer?]					•	
•				•	Develop data supporting better understanding of 2-year students by 4-year faculty						•
•				•	Profile students coming from 2-year to 4-year [to alleviate negative perceptions aboutcommunity college students						•
•				•	Focus on transfer student data for underserved students						•
•				•	Get qualitative data on successful STEM students						•
	•		•		Use data to show faculty members levels of success for transfer students 60-2-29; compare data from different 2-year institutions to see in aggregation						•
	•			•	Determine how many credit hours students transfer in with and how many hours count toward General Ed requirement						•
	•			•	Look at data for timing of successful student transfer; pathways assessment						•
	•			•	Determine characteristics of students who are NOT transferring						•

S1	S2		2 YR	4 YR	DESCRIPTION	STATE CODES					
						10	20	30	40	50	60
	•			•	Track student performance and enrollment at 2-years and compare with current trends we are seeing at the 4-year school						•
	•		•		Gather demographic student profile including: are they working full-time, single parent, where do they live, age, first generation, honors student, etc.						•
	•		•		Data is needed on number of transfers; those exclusively taking classes at 4-year center. From those subsets: GPA, Major, graduation rate after 6 years. Using zip code student migration can be tracked						•
					3.2 Comparative Program Data (n=12)	•	•			•	•
	•		•		See if other institutions have experienced some success with transfer student services	•					
	•		•		Use platinum analytics for building schedule: how many students have completed prerequisite course, how many sections of subsequent course	•					
	•		•		Determine percent of curricular alignment needed to provide opportunity for transfer students to be successful in a STEM program	•					
	•			•	Need data to show why early registration helps transfer students succeed	•					
•			•		Look for cohort data from different programs		•				
•			•		Disaggregate data by programs of study and majors		•				
•			•		Find true completion rates by program		•				
	•		•		Get comparative data on different systems and rates of completion		•				
	•		•		Need to disaggregate data by major to see STEM student placement [in math]		•				
	•			•	Disaggregate data by high schools		•				
	•		•		Focus on labor market value so pathways result in job					•	
	•			•	Determine if there are areas on campus where transfer students are more successful						•
					3.3 Data Sharing (n=7)	•			•		•
•			•	•	4-years should share data with 2-years on their transfer students	•					
•				•	2-years should share data on history: the number of courses repeated by students before they transfer to 4-year	•					
•			•		Share data on course load at 2-year: does student have strategies and history for dealing with full course load at 4-year	•					
•				•	Develop common list of questions to submit to everyone's office of Institutional Research to do comparisons	•					
•				•	Once a student is registered at both the community college and the 4 year schook, data can be shared between the 2-year and 4-year institutions				•		
	•		•	•	4-year and 2-year work together using data in a new way by pulling data early and using it to better guide students at an early stage						•
•			•		Share data on 2-year students with 4-year faculty to change stereotypes about 2-year students						•