**HOW TO REDESIGN A COLLEGE-LEVEL OR DEVELOPMENTAL MATH COURSE
USING THE EMPORIUM MODEL**

III. Getting Ready to Redesign

Before they begin a redesign of developmental math, most institutions have found it extremely useful to think through their readiness to engage in such a redesign. There are two categories of issues to consider when an institution assesses its readiness to undertake course redesign: institutional support for the redesign and available resources to support the redesign. Successful redesign requires both institutional support and needed resources to be in place before a redesign begins.

Assessing Your Institution's Readiness to Redesign

Campus Support

Do you have sufficient support on campus to initiate a redesign? If not, you need to develop a plan to secure that support before you begin an actual redesign plan.

- *Faculty Support.* This guide assumes that those who wish to initiate a course redesign have identified the academic and/or resource problem(s) that the Emporium Model can address. You need to clearly specify the problem and gather data that supports the need for change—such as student pass rates for the past several years and the percentage of students who successfully complete the course. The question then becomes, Do all faculty members in the department understand the nature and extent of the problem? Even though many institutional teams that have worked with NCAT believed that the scope of their identified problem and the need to solve it were well-known among their peers, they subsequently learned that others did not share that understanding. You need to be sure that all members of the department are aware of the problem and are supportive of the need to address it. Most faculty members are not familiar with the Emporium Model and will need assistance in understanding it.

- *Administrative Support.* Do academic administrators (department chairs, deans, vice presidents, provosts and presidents) understand the nature and extent of the problem? Have they seen the data? Even though many administrators do understand the scope of the math problem (indeed, it may be the administration that initiates the redesign), others surprisingly do not and need to be informed. Most administrators are not familiar with the Emporium Model and will need assistance in understanding it. Administrative issues will need to be addressed throughout the redesign process and campus resources will be needed; consequently, having solid administrative support is extremely important to the success of the redesign. In addition, administrators may need to step in to support the redesign effort when colleagues or other departments or divisions question the redesign. Senior administrators must be prepared to provide that support.

- *Unionized Campuses.* Faculty unions strive to ensure that faculty members work in a secure and productive working environment with a reasonable workload. On some campuses, there are work rules that may seem to be obstacles to redesign. Because one of the goals of the Emporium Model is to reduce instructional costs, unions often conclude that faculty will automatically lose jobs or be required to carry a heavier workload. NCAT has successfully

worked with institutions in many states that have faculty unions including New York, New Jersey and Massachusetts. Those initiating the redesign and the campus administration need to take into account the particular union contract under which the redesign will occur.

NCAT's Scope of Effort Worksheet (see Appendix D) has been designed to help campuses document that the number of hours faculty devote to the redesigned course will be the same as or fewer than those devoted to the traditional format of the course, even if class size grows or the number of sections that faculty carry increases. This is possible because the Emporium Model offloads to the technology certain tasks like grading and monitoring student progress. Explaining how this occurs and documenting the changes by using the Scope of Effort Worksheet allow redesign leaders to help union leadership understand the benefits of redesign for both students and faculty. Having union support is key to a successful change on a unionized campus.

<u>Financial Support</u>

Do you have sufficient financial resources available to support a redesign? If not, you need to develop a plan to secure that support before you begin an actual redesign plan. Financial resources are needed to support three things:

- *Computer Labs/Classrooms*. Some institutions have existing computer labs/classrooms which are underutilized and can be rescheduled and repurposed. Other institutions need to expand the labs/classrooms they have because more students will be using them than was true before the redesign. Still others need to build new labs/classrooms. When repurposing or expanding existing labs/classroom or creating new ones, senior administrators are typically those who make these important space decisions. As noted earlier, they must understand the reason for the redesign and the anticipated benefits for students and the institution.

- *Technological Infrastructure*. Some institutions have robust infrastructures, but many need to expand their infrastructures to support larger labs or to equip small classrooms. Typically, the Emporium Model means that more students will be using on-campus computers and accessing the campus network. Thus, an institution's technological infrastructure will need to be examined and may need to be expanded as new demands are placed on it and the volume of student engagement increases. Again, senior administrators are typically those who make these important infrastructure decisions. As noted earlier, they must understand the reason for the redesign and the anticipated benefits for students and the institution.

- *Faculty Released Time*. To focus on planning the redesign, a sub-set of full-time faculty will need release time from some or all of their teaching responsibilities. Financial resources are needed to pay qualified adjuncts to teach their sections so that those faculty key to the redesign can have time to do the work. Not all faculty involved in the redesign need released time. Those granted released time should hold pivotal roles in the planning and development of the redesigned courses.

  NCAT does not recommend using extra service or overtime pay rather than release time. Because faculty members were presumably fully employed prior to the beginning of the redesign process, paying overtime means that faculty must work on the redesign in the evening or on weekends. Using overtime payments also means that faculty may have greater difficulty in scheduling important meetings with team members or others on campus. This method of remuneration forces faculty to place the redesign lower on their priority list

because their current classes and students must come first. Paying overtime during the summer may work, but we definitely recommend against it when time for planning the redesign is needed during a regular school term.

If your developmental math program has no full-time faculty, you will need to pay part-time faculty to take on the extra work of leading the redesign effort.

Even though all successful redesigns will reduce instructional costs over time, some financial resources are needed upfront. Where do these financial resources come from? Some institutions have redirected internal funds to support the redesign. Other institutions have received outside funding from Title III or Title V grants or from private foundations that seek to improve student retention and success. Being able to articulate clearly what the problem the institution is trying to solve by using the Emporium Model will go a long way to enabling any funder (either internal or external) to understand and support the redesign effort.

Preparing to Develop a Plan

Once the institution has a clear understanding of its goal and believes that it has the necessary support and resources to move forward to develop a redesign plan, both faculty and administrators need to learn more about the Emporium Model, what its strengths are and how it actually works.

Form a Course Redesign Team

The first step in developing a redesign plan is to form a course redesign team. Successful course redesign is the product of a team effort. It is not a faculty project; it is not an administrative project; it is not a professional staff project. It takes all of these people—because it is a team effort. In evaluating prior redesign programs, we have found that taking a team approach always receives the highest possible rating from participants.

Institutions should establish institutional teams that include the following types of people:

- *Faculty Experts.* Course redesign requires that faculty experts explicitly identify the course's desired learning outcomes and agree on course content. Math courses are typically taught by more than one faculty member. To ensure course consistency, these faculty experts must work together on the redesign—resolving any differences in how the course will be offered— and must collaboratively plan the most effective way to accomplish the redesign goals.

- *Administrators.* Because redesigns impact multiple sections, large numbers of students, and academic policies and practices, it is important that the team involve academic administrators. The level of these administrators will depend on the organization and size of the institution. For some it will be the provost/academic vice president or designee; for others it will be a dean or department chair. These team members play important roles when institutional issues arise such as changes in scheduling or the use of classroom space. If unexpected implementation issues arise in the process of redesign implementation, administrators can help the team resolve them quickly and effectively across institutional offices.

- *Technology Professionals.* These team members provide expertise so that the redesign goals are accomplished in ways that make the technology as easy for students to use as possible. Technology professionals contribute ideas about how to increase interaction with

content as well as with other students. They also suggest design approaches to ensure that the technology does not limit students' learning options.

- *Assessment Experts.* In Chapter VII, NCAT offers straightforward methods to enable student learning in the redesigned course to be compared with that in the traditional course. It is, however, useful to include on the team a member who is knowledgeable about assessment and research design, particularly if the institution seeks to measure additional facets of the redesign such as performance in downstream courses or student satisfaction, to name a few. This expertise may be found in departments of education or psychology or in offices of institutional research.

- *Instructional Designers.* If your campus is fortunate to have instructional designers on staff, you may wish to add one to the team. The instructional designer can help guide the re-sequencing of instruction and provide insight into learning theory and modularization. Subject matter experts are not always learning experts and such guidance can be critical.

Take Advantage of NCAT Resources

- *Background Reading.* A short bibliography of NCAT articles about redesigning math is listed below. Sharing these articles among the redesign team and other colleagues on campus and discussing them as a team and with others are good activities to pursue in preparing to develop a redesign plan.

  Math Lectures: An Oxymoron?
  An article summarizing what NCAT has learned about improving student success in mathematics.

  The Math Emporium: A Silver Bullet for Higher Education
  A version of the 2011 *Change* Magazine article summarizing the successes produced by the Emporium Model.

  Improving Learning and Reducing Costs: Outcomes from Changing the Equation
  A version of the 2013 *Change* Magazine article describing the outcomes and lessons learned from *Changing the Equation*, a national NCAT program in redesigning developmental math in community colleges.

- *Redesign Case Studies.* NCAT has provided the higher education community with almost 200 case studies of redesigns that both improved learning and reduced costs. The NCAT website has an array of free resources for use by those seeking to implement a successful redesign. Forty of these case studies are of redesigns that have successfully used the Emporium Model (see http://www.theNCAT.org/PCR/model_emporium_all.htm), including both two-year and four-year institutions. While more institutions have used the Emporium Model, the 40 on the NCAT website have measured both improvements in learning and reductions in cost. These 40 and others across the United States can provide good guidance about how to successfully implement the Emporium Model and reap its multiple benefits for students.

- *Campus Visits.* The redesign team should also consult with and visit institutions that have successfully implemented this model.

Visiting multiple institutions is a good way for teams to observe exactly what occurs in an Emporium Model and to see the interaction between students and instructors. The team can also discuss particular issues that may have arisen during the planning stage. Campus visits have been quite definitive in convincing those faculty and administrators who may have hesitations about the Emporium Model or cannot envision either exactly how it would work in practice or its effectiveness.

It is also important for senior administrators to understand the benefits of the Emporium Model. After some explanation from the faculty and department chair, it would be useful for these senior administrators to talk to or visit colleagues at institutions that are using the Emporium Model. Just as in the case of faculty, when senior administrators see the Emporium Model in action, talk to students and talk to their colleagues, they tend to understand that redesign using the Emporium Model is a viable way to solve the "math problem" at their institutions.

- *Redesign Scholars.* In 2006, NCAT established a Redesign Scholars Program to link those new to course redesign with more-experienced colleagues to whom they can turn for advice and support. Trained in NCAT's course redesign methodology, Redesign Scholars have led successful redesigns that have been sustained over time. Only exemplars in course redesign are selected to be Redesign Scholars.

  Individual institutions that want to initiate course redesigns may wish to invite a Redesign Scholar to visit their campuses. Site visits focus on issues of curriculum and pedagogy, administrative matters, assessment and evaluation efforts, and implementation issues. Redesign Scholars are also available to campuses via telephone and email for ongoing consultation. Redesign Scholars are engaged on a per-event basis and determine their consulting fees individually.

  NCAT has designated a number of Redesign Scholars in mathematics (see http://www.theNCAT.org/RedesignAlliance/BiosModel.htm). Many of the Redesign Scholars have redesigned both developmental and college-level math courses. Follow the links to read about each Redesign Scholar's background and redesign project in order to choose someone who would make a good fit with your particular redesign idea. Contact information is also provided.

Readiness Checklist
- Have you identified clearly the problem the redesign will solve? Do you have data to support the extent of the problem? Do others on the campus also acknowledge the problem?
- Do you have sufficient resources to support the redesign? Have you identified sources of external or internal funds to support the redesign?
- Do the senior administrators who make funding and space decisions understand the needs of the redesign? Do they have sufficient information to make appropriate decisions?
- If your campus is unionized, has the redesign plan been discussed with union leadership? Have you shared the Scope of Effort Worksheet to document that the redesign will not increase workload?
- Have you formed a redesign team that includes faculty, administrators, technology professionals and assessment experts? Does this team understand the scope of the task?
- Have you established specific assignments for team members and others for the planning period?

- Have the team and others read about successful redesigns on the NCAT website and discussed them?
- Have you visited other campuses that have implemented successful redesigns in math or had telephone discussions with their faculty and administrators? Were others who might have reservations about the redesign invited to join the visits or the phone calls?
- Have you considered asking one or more NCAT Redesign Scholars to visit your campus and provide advice about the redesign?