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Proposed resource center targets science, tech, math

BioCrossroads wants to help build strong foundation

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Only 64 percent of Indiana's fifth-graders passed the latest ISTEP+ test in science. A little better—76 percent—passed the math component.

Unfortunately, as children advance in grades, their ISTEP+ math scores worsen. By eighth grade, only 64 percent passed the math portion of the test.

Yet, economic development officials in Indiana—and much of the country—want young students to choose to study in college areas of advanced manufacturing, life sciences, informatics, agribusiness and an array of disciplines that require a strong foundation in math and science.

So, to attract young students to these areas and help prepare them for careers that will drive Indiana's economy, BioCrossroads, the state's life sciences initiative, wants to create the K-12 Indiana Science, Technology, Engineering and Math, or STEM, Education Resource Center.

Pulling things together

Ultimately, the center would link together—virtually—numerous and often-unknown resources statewide and catalog them so teachers in grade schools through high schools can tap into lesson plans, access professionals in various industries, and learn about workshops and other teaching aids.

"There's a lot of information and resources out there, but on a piecemeal basis," said Anne Shane, vice president of BioCrossroads. "We need to raise the tide for all to get better training and development."

For example, Purdue University is offering science workshops this summer for K-12 teachers. But teachers beyond the West Lafayette school districts can attend.

Elementary education teachers are responsible for teaching up to certain math and science standards, but often don't know where to locate appropriate lesson plans. Yet numerous sites have downloadable resources available.

And Rose Hulman Institute of Technology has a student homework hot line staffed by students. And while many might assume the hot line is for Rose Hulman students, it's not, Shane explained. Students statewide could use it if they knew it was there and how to access it.

It'll take someone or something to pull all the information together, so BioCrossroads has issued a request for interest in participation to find, among other things, a company, organization or educational institution to take on the job of managing partner to coordinate and run the activities of the center.

Looking for a leader

The managing partner will not have to create anything new, Shane explained. Rather, it will have to find the myriad resources out there and ensure that teachers and students know they're there and how to use them.

"The RFIP is the first phase of creating the resource center," said Shane, also a member of the review committee that will eventually help select the partner. "We've had a lot of public and private interest already. We're trying to stay open to who that might be."

Proposed education center at a glance

What: BioCrossroads K-12 Indiana Science, Technology, Engineering and Math Education Resource Center

Goal: Attract young students to these areas and help prepare them for careers.

How: Provide a single source where K-12 teachers and students can find information about the numerous and little-known STEM-related resources statewide.

Why: Only 64 percent of Indiana's fifth-graders passed the latest ISTEP-Plus test in science; 76 percent passed the math component.

First step: Request for interested parties were issued to choose a managing partner; responses were due June 1.

Source: BioCrossroads

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Among others, Indiana University might be interested, Shane said. The school is already working to internalize all its own STEM initiatives with its recently announced IU Institute for Science, Technology, Engineering and Mathematics Education.

The IU resource center has basically the same goals as the BioCrossroads' one, namely to bring together resources for K-12 students and teachers in order to beef up the number of college students who graduate with a STEM-related degree.

"We must increase the preparation for a student's success in college," said Geraldo Gonzalez, university dean of the school of education at IU and a member of the IU resource center's organizing team. "Central to doing that is a strong preparation in math, science and technology—the gateway courses for college."

The IU center would tap into faculties from multiple disciplines throughout the institution to provide professional development for teachers in high-need districts, for example.

Another initiative would partner with the Gary school system to enhance their two educational academies—one for boys, the other for girls—to improve the success at those institutions for hard-to-reach kids.

"[IU officials] are demonstrating that they are organizing for action in order to respond to the RFIP and will be better able to respond to the RFIP," Shane said.

That seems to be true.

"Yes, IU is going to submit a proposal to become the managing partner for the statewide ISTEM Resource Center," said Sarita Soni, vice provost for research at Indiana University and a part of the group organizing IU's center. "We will use our IT expertise and connectivity along with our regional campuses' reach throughout the state to engage a large part of the state. Our goal is to develop a statewide effort."

Finding money

Funding for the BioCrossroads center has not yet been determined. In fact, that's deliberate, Shane said. The group wants to see how creative respondents can be coming up with ideas for providing in-kind services, cash, staff or facilities.

"There will likely be a gap that BioCrossroads will have to fund," Shane said. Staff will be lean and efficient, as well.

The RFIPs were due June 1 and the review committee will meet two weeks later to review responses.

Once the managing partner is selected, work will continue with identifying regional and statewide partners that will serve as team leaders for the managing partner. A budget will be established and the process of finding the funds to get it up and running will start.

Eventually, metrics will be used to measure the success of the center. At the core, better test scores, more students choosing STEM-related majors, and more teachers more rigorously trained in those areas will be critical.

"The relationship between STEM education is directly tied to the success of our economy," Shane said. "If we don't quickly understand how to focus in this more, our critical infrastructure will not function."•