Rice opens 'Cure for Needy' on the Web

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Suppose you had a disease for which there's a proven cure, but nobody makes the drug. Where do you turn?

That's a question many around the world face every day and one Rice University students hope to answer by reaching out through the Internet.

The Cure for Needy Project (http://www.cureforneedy.org) will draw upon the expertise of chemists worldwide to optimize small-molecule medications for orphaned diseases - those for which drugs may be extremely expensive or unavailable because they're simply not profitable enough for pharmaceutical companies to produce.

Cure for Needy, born this year in a class taught by renowned Rice chemist James Tour, will draw on the power of the Internet to drive down the cost of such medications. He compared the concept to the way programmers use the Net to create such open-source software as Linux.

Tour said there are many ways to synthesize a given drug, and the paths that exist aren't necessarily the most efficient ones. Cure for Needy will list the paths to the synthesis of dozens of "orphan drugs," known medications that have already been approved by the U.S. Food and Drug Administration (FDA) or European Commission.

He's confident chemists will enjoy the opportunity to puzzle out more-efficient, cheaper or greener ways to make the listed drugs and feel good about the impact they will have on global health. "We realize, for example, there are many retired chemists or graduate students out there

who would love to contribute their talents," said Tour, Rice's Chao Professor of Chemistry as well as a professor of mechanical engineering and materials science and of computer science.

Large or small pharmaceutical firms around the world can then use the streamlined formulas - all of which will be in the public domain - to manufacture and distribute affordable medications for the recognition the project would bring.

"We hope smaller companies might want to make names for themselves by doing this," Tour said. "This is the kind of thing we see companies doing in other fields, and it can be very effective."

In cases where a company owns the patent on an orphan drug, Tour said Cure for Needy could act as a conduit for a potential manufacturer to obtain permission to make it from the patent-holding company.

The project came about when Tour, inspired by Thomas Friedman's book "The World is Flat," challenged his "Wild Topics in Chemistry and Nanotechnology" class to set the hive mind to work on a way to get proven medications to those in need.

The site initially lists four neglected tropical diseases and 30 medical conditions that could be treated by what the FDA considers to be orphan drugs.

"They're not the blockbuster drugs that give the major pharmaceutical companies so much of their revenue," said Rice sophomore Erin Walsh, project coordinator and one of dozens of students who worked on Cure for Needy. "We're trying to make those drugs they don't necessarily target because there's not a profitable revenue model."

Thomson Reuters, a global business information company, has jumped

behind Cure for Needy by providing relevant synthesis schemes from its integrated drug discovery and development portal, Prous Science Integrity. "We are pleased to support the work of the Cure for Needy initiative," said Josep Prous Jr., vice president and chief scientific officer of the company's health care and science division. "The provision of a central repository for orphan drugs' synthesis schemes will drive forward innovation in an essential but underrepresented area of research and development."

Walsh said chemists who register with Cure for Needy have access to the targeted drug pages. Submitting an idea creates a page where others can critique and refine the work.

Ultimately, the Rice team led by Walsh, webmaster Zach Strickland, Nazima Zakhidova and Raul Villarreal wants Cure for Needy to serve as a Wikipedia-style database to increase the awareness of orphan medicines and the diseases they treat and expand their availability to the afflicted. Walsh said she hopes nonchemists will find ways to contribute as well.

Walsh, a native of San Antonio and chemical engineering major, is driven by the site's potential to be a positive force in world health. "The idea that you can be sitting at your computer terminal and have the power to affect so many lives, and maybe save a few, is mind-boggling to me," she said.

Source: Rice University (news : web)