

SIU spearheads federal Precision Medicine program locally

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Thousands of central Illinois residents will be offered a part in a long-term national study of the ways that lifestyle, environment and genes interact to affect diseases.

Results of the White House-led [Precision Medicine Initiative Cohort Program](#), the largest of its kind, could lead to better prevention strategies and treatments for everything from cancer to high blood pressure, asthma and diabetes, federal and local officials say.

“This type of study will allow you to do something that virtually no other epidemiological study’s been able to do,” said [Dr. John Flack](#), an internist at [Southern Illinois University School of Medicine](#) in Springfield.

Flack, chairman of SIU’s internal medicine department, is working with Wiley Jenkins, science director of SIU’s population health science program, to lead an SIU-linked group of central Illinois health-care providers in the initiative.

The providers so far include [SIU HealthCare](#), [Memorial Medical Center](#) in Springfield, [Sarah Bush Lincoln Health Center](#) in Mattoon and [Blessing Hospital](#) in Quincy. Those providers, and others that may be added downstate as the project proceeds, will share at least \$2.5 million over the next five years to recruit 800 patients in the first year and 13,000 by 2020.

SIU is part of the Precision Medicine’s Illinois Consortium, led by Northwestern University. Northwestern was awarded \$4.3 million in federal funds for fiscal 2016, with up to about \$45 million in funding possible over a five-year period if Congress continues to support the program.

SIU and the University of Illinois College of Medicine at Peoria are the two major partners coordinating enrollment of urban and rural patients outside the Chicago area, Jenkins said.

About \$55 million in awards were issued last week by the [National Institutes of Health](#) in suburban Washington, D.C., to help establish the program’s infrastructure.

Overall, more than \$200 million was appropriated for the first year of the program through a proposal by President Barack Obama that was approved by Congress and took effect in December, NIH spokeswoman Katie Rush said.

Better database

Jenkins compared the program to a super-sized version of the [Framingham Heart Study](#), which began in 1948 with the recruitment of 5,209 men and women in Framingham, Massachusetts.

Close monitoring of the Framingham participants' health led to the discovery of characteristics that contribute to heart disease, as well as other information about cholesterol, blood pressure, and age- and gender-related risks.

Doctors often have to make decisions on drug regimens and other treatments based on guidelines for the "average patient" or all black patients or all female patients.

Knowledge gained from Precision Medicine could take into account the genetic differences and other differences within those groups and be used to develop better-tailored treatments, Flack said.

"With this rich data set, you now can build really complex models to try and understand how these factors basically determine response," he said.

"As a practicing doctor, what I'm doing all the time is trying to figure those things out," said Flack, a hypertension specialist. "And essentially, what I end up doing a lot is using group averages."

The initiative's goal is to eventually enroll more than 1 million Americans. Lifestyle and other data from initial questionnaires will be combined with ongoing changes in participants' health that are tracked through electronic medical records.

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SIU faculty member helping to spearhead local recruitment of patients for federal Precision Medicine Initiative

All of that information will be part of databases that can be analyzed by researchers.

'Great platform'

Outreach to ask patients of SIU's partners to volunteer for the Precision Medicine Initiative will begin in December at the earliest, Jenkins said.

Patients will be paid \$30 apiece for their time. At enrollment, they will submit blood, urine and saliva samples, undergo a brief exam, fill out forms and give permission for researchers to share and track their data, Jenkins said.

There will be strict requirements to protect patients' information from being released to anyone except legitimate researchers, he said.

Patients might be contacted in the future by various researchers to submit updated information or go through more exams.

But many researchers will be able to make discoveries with computerized analyses of data sets that will continue to expand as enrollment accelerates, Flack said.

By becoming involved in Precision Medicine early, the medical school will open the door to a new stream of potential research grants for SIU faculty members, Flack said.

“This is going to be a great platform for future studies and funding,” he said. “For SIU ... if we do this right, the funding opportunities for human-based research here ought to really go off the charts. All we have to do is handle the recruitment right and be good collaborators.”

Patients who agree to take part in Precision Medicine will have the opportunity to serve on research committees and advisory boards, as well as submit ideas for improving the initiative, Jenkins said.

Patients and their doctors will have free access to the genetic information generated by the tests, Flack said.

Genetic data already is used in attacking some types of cancer. What’s lacking is more guidance for medical treatment based on the “subtle and complex” interplay between clusters of genes and an individual patient’s lifestyle and environment, Flack said.

The Precision Medicine program will help fill in the gaps, he said.

“The first phase of this is now really focused on what studies will be done,” Flack said. “It’s really about getting a basic core of information. And then for years to come, this will be an incredibly rich platform to do investigations that link all this data together.”

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