

## Arizona State and Mayo Clinic partner to combat metabolic syndrome

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Arizona State University and Mayo Clinic in Arizona are joining forces in a partnership to investigate metabolic syndrome - a cluster of high-risk medical factors that include increased blood pressure, elevated insulin levels, excess body fat and abnormal cholesterol levels, which can lead to heart disease, stroke and diabetes.

Physicians, scientists and clinicians at the new ASU/Mayo Center for Metabolic and Vascular Biology will work together on solutions for this medical disorder. Research to better understand how [insulin resistance](#) affects the body's blood vessels and metabolism will be an important part of the work at the new center, with facilities at the ASU Tempe campus and Mayo Clinic in Arizona, on the Scottsdale campus.

Lawrence Mandarino, Ph.D., a professor and founding director of the Center for Metabolic Biology at ASU, will direct the new joint venture. He will step down at the end of December from a five-year assignment as chair of ASU's Kinesiology Department in the College of Liberal Arts and Sciences to assume his new leadership role.

"The diseases associated with the metabolic syndrome, namely obesity, [type 2 diabetes](#), cardiovascular disease, stroke, hypertension, dyslipidemia and some cancers, account for an increasing proportion of the health care burden and costs in Arizona," notes Mandarino.

Some conditions, such as obesity, are increasing dramatically, he says.

"Arizona will be faced with tremendously increased costs in the health of its citizens over the next few decades as a result of these conditions," says Mandarino, who also holds an appointment as Professor of Medicine at Mayo Clinic in Arizona and a cross appointment as professor in the Department of Basic Medical Sciences at the University of Arizona College of Medicine-Phoenix in partnership with Arizona State University.

To combat that scenario, the ASU/Mayo Center for Metabolic and Vascular Biology "will bring together experts in the basic biology underlying these conditions and clinicians who treat the diseases, along with ASU's strong presence in health psychology, social science, technology and public policy," explains Mandarino.

Scientists at ASU's Center for Metabolic Biology have worked to better understand the molecular, biochemical and physiological mechanisms of insulin resistance. They have learned that the condition nearly always accompanies obesity, and they now know that insulin resistance is the underlying cause of many of the diseases associated with obesity.

"Bringing together our scientists with the investigators at Mayo Clinic will vastly strengthen the clinical capabilities of the ASU Center for Metabolic Biology," says Sid Bacon, dean of natural sciences in ASU's College of Liberal Arts and Sciences.

Laurence Miller, M.D., director of research at Mayo Clinic, will lead Mayo's efforts. "This new partnership will expand the already highly successful synergy between ASU and Mayo," Miller says. "We are moving into an area with immense importance for public health, both locally and nationally. Many of our clinicians, clinical investigators, and basic scientists have already engaged in this joint activity. They are energized by the prospects of making a positive difference."

Faculty members from ASU and Mayo Clinic will have access to scientific resources available at both facilities. Additionally, ASU experts in proteomics, genomics and clinical research will continue to provide collaborative opportunities to faculty members in the new center.

"We are putting together the necessary elements to make this facility useful to researchers at ASU and Mayo Clinic," says Mandarino. "Then we will move on to include researchers at Mayo Clinic in Rochester, Minnesota. Eventually we will include outside investigators."

"This joint research program will strengthen the basic research in metabolic biology," says Sethuraman Panchanathan, deputy vice president in the ASU Office of Research and Economic Affairs. "More importantly, it will result in innovations that make a real impact on the quality and affordability of health care."

Mandarino's research, which includes the study of the mechanisms of insulin resistance, has been supported by the National Institutes of Health for more than 20 years, and he has more than 100 publications in peer-reviewed journals. Earlier this year, Mandarino received the Cure Award from the American Diabetes Association. The award is presented to a key researcher who is engaged in basic or clinical research focusing on the treatment, cure or prevention of diabetes and its complications.

Provided by Arizona State University

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