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HEALTH

Inside the first 15 years of drug discovery at Temple

Finding new treatments for addiction, especially alcoholism, is a focus of Temple University's drug discovery research efforts.

Magid Abou-Gharbia at Temple's School of Pharmacy in 2018. In 2024, he looks back at 15 years leading Temple's Moulder Center for Drug Discovery Research. "I'm very blessed."

AKIRA SUWA / Staff Photographer

by Alison McCook

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In the 15 years since the founding of Temple University's Moulder Center for Drug Discovery Research, researchers have pursued treatments for cancer, neurodegenerative diseases such as Alzheimer's, diabetes, and antibiotic resistance. But much of the center's focus has been on addiction — especially alcoholism.

Heavy drinking can affect the amount of chemicals in the brain known as neurotransmitters. To tackle the problem, Moulder Center for Drug Discovery Research founder Magid Abou-Gharbia and his colleagues tested a compound known only as MC-100093, which affects brain levels of one such neurotransmitter, glutamate.

Two years ago, they showed that rats treated with MC-100093 tended to drink less alcohol, even though they had access to it and had been drinking alcohol for weeks. What's more, MC-100093 appeared to reverse some of the effects alcohol had on rats' brain and liver. (Of course, rats are a far cry from humans, so don't expect an MC-100093 treatment for alcoholism anytime soon.)

Magid Abou-Gharbia, director of the Moulder Center for Drug Discovery Research at Temple University. ED HILLE / Staff Photographer

Temple has since filed patents to cover the intellectual property of the compound, and is looking for companies to license MC-100093 from Temple and begin the long process of testing whether it works in humans. “This is what we’re trying to do now,” Abou-Gharbia said.

It’s a familiar effort to Abou-Gharbia, who spent more than 25 years in the pharmaceutical industry before coming to Temple. At Wyeth (now a part of Pfizer), he worked on blockbuster drugs such as Effexor, which also modify levels of neurotransmitters in the brain — in Effexor’s case, serotonin and norepinephrine — to treat depression and anxiety.

But now, he’s all in on Temple’s efforts to help create new medicines from academic research, launched in 2008 following a gift from Lonnie and Sharon Moulder, who both graduated from Temple’s School of Pharmacy.

According to Abou-Gharbia, in its first 15 years, the Moulder Center for Drug Discovery Research has received more than $35 million in external funding from research grants and contract research, produced more than 180 publications, and filed more than 30 patents.

“I’m very blessed that in my career, even in pharma, that I have very good, talented people working with me,” Abou-Gharbia said.