# Artificial Intelligence in the Pharmaceutical Industry

New Report Details the Applications of AI in Drug Discovery and Preclinical Drug Development

CHICAGO, ILLINOIS, UNITED STATES, August 23, 2018 /EINPresswire.com/ -- PreScouter, a Chicago-based research intelligence company, has released a detailed report on the applications of artificial intelligence (AI) in drug discovery and development. As the use of AI in the pharmaceutical industry is projected to bring in billions of dollars in funding in the near future, PreScouter believes that this report is invaluable to any biopharmaceutical company interested in integrating an AI-based methodology in their current drug development processes.
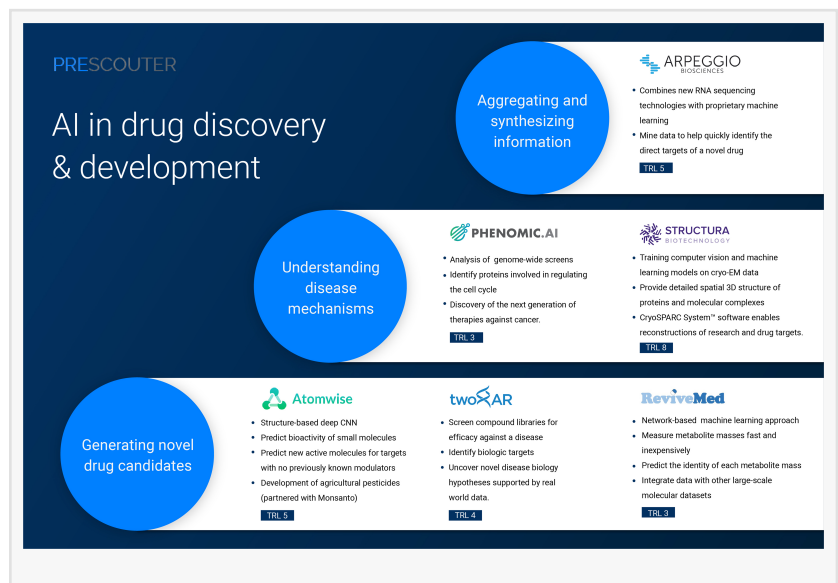
The major driving force for selecting this topic was the questions PreScouter receives from clients in every industry about specific ways in which AI could improve upon the current way of doing things, according to Dr. Charles Wright, PreScouter Project Architect for the healthcare and life sciences industry. "In the pharmaceutical industry, early use cases are becoming available that highlight the potential for AI to improve the process of discovering and developing a new drug, which is currently an incredibly difficult task," says Wright.

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> *Dr. Charles Wright, PreScouter Project Architect*

To generate drugs using an AI-based approach, many AI models start with a 3D model of a molecule, for example a protein that promotes cancer cell growth, explains Mohamed Akrout, one of the researchers who worked on the report. "The AI model then generates a series of synthetic compositions and predicts the probability of interaction between the two molecules. If a drug is likely to interact with a specific molecule, it can be synthesized and tested."

The report compares traditional drug discovery methods with AI-based methods, illustrating both the benefits and limitations seen with AI-based drug discovery applications as well as current challenges and future opportunities. A number of case studies are included that illustrate the AI capabilities of six startups.

Wright sees that the three common challenges faced by all pharmaceutical companies are (1) timelines of about 15 years, (2) costs in excess of $1B and (3) a minuscule rate of success. It's

estimated that 1 in 10 small molecule projects become candidates for clinical trials (that's after screening through millions of compounds to hone in on viable candidates). Only about 1 in 10 of those compounds will then pass successfully through clinical trials. "AI has the potential to transform the drug development process by making it both more efficient and effective, thus benefiting all parties involved—from the companies developing new drugs to the patients in desperate need of viable treatments," says Wright.

Dr. Navneeta Kaul, the second researcher who helped compile the report, believes that with the advances made in AI, "The day is not far when a machine will be able to tailor a drug for each unique individual in a much shorter period of time."

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