Amgen And The Institute For Protein Design (IPD) At University Of Washington Announce Unique Strategic Research Partnership

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Collaboration Will Apply IPD's de novo Protein Design Expertise to Biotech Drug Discovery

THOUSAND OAKS, Calif. and SEATTLE, June 19, 2019 /PRNewswire/ -- Amgen (NASDAQ:AMGN) and the University of Washington'sInstitute for Protein Design (IPD), which is revolutionizing its field of science by creating custom-designed proteins from scratch to improve human health, today announced a broad collaboration that will cover multiple projects with a goal of testing new technologies and creating protein-building approaches that can be broadly applied to the search for new medicines.

Under the terms of the agreement, Amgen has provided initial funding for three sponsored research projects that will seek to apply IPD's *de novo* design technique to increase the versatility of traditional protein-based medicines. This will include optimizing Amgen's repertoire of BiTE® (bispecific T cell enager) antibodies, with the goal of expanding the types of tumors that can be targeted with these molecules. IPD's expertise could also help Amgen to generate antibodies against very challenging drug targets and to devise new ways to modulate the activity of the immune system. In the longer-term, the broad-based collaboration could help shape the discovery and development of protein-based therapies.

"We're at a technology transition point from modifying what exists in nature, which has been the traditional approach to protein engineering, to using first principles to build proteins from scratch to have exactly the properties you want," said David Baker, the Henrietta and Aubrey Davis Endowed Professor of Biochemistry at the University of Washington School of Medicine, a Howard Hughes Medical Institute investigator, and the founder and director of IPD. "We can now design proteins that have specific functions, and that is where our work starts tying into medicine, and why we are very excited to be working with Amgen."

"We want to work with IPD in an open-ended way to try to solve some of the most intractable problems that we face in designing effective medicines," said Raymond Deshaies, Ph.D., senior vice president of Global Research at Amgen. "This is a broad collaboration that will cover multiple projects, and we are hoping to build strong working relationships among scientists on both sides. The goal isn't just to solve a few specific problems but to create approaches that can be applied very generally across a large suite of problems."

About the Institute for Protein Design
The Institute for Protein Design, founded in 2012 at UW Medicine in Seattle, is a non-profit research center that creates custom-designed proteins to improve human health and address 21st-century challenges in energy, industry and technology. Proteins are essential molecules that perform vital functions inside every cell of the human body. Proteins also have applications outside the body, including as diagnostic tools, advanced nanomaterials, and more. The Institute's team of 140 faculty, staff, postdoctoral fellows and graduate students together work to design entirely novel proteins from scratch to create, for example, safer and more potent vaccines and therapeutics. The institute has assembled top experts in biochemistry, computer science, pharmacology, immunology and other basic sciences, as well as clinical medicine. In 2019, the Institute for Protein Design was selected as part of The Audacious Project, a successor to the TED Prize.

For more information, visit www.ipd.uw.edu.

About Amgen
Amgen is committed to unlocking the potential of biology for patients suffering from serious illnesses by discovering, developing, manufacturing and delivering innovative human therapeutics. This approach begins by using tools like advanced human genetics to unravel the complexities of disease and understand the fundamentals of human biology.

Amgen focuses on areas of high unmet medical need and leverages its biologics manufacturing expertise to strive for solutions that improve health outcomes and dramatically improve people's lives. A biotechnology pioneer since 1980, Amgen has grown to be the world's largest independent biotechnology company, has reached millions of patients around the world and is developing a pipeline of medicines with breakaway potential.

For more information, visit www.amgen.com and follow us on www.twitter.com/amgen.

Amgen Forward-Looking Statements
This news release contains forward-looking statements that are based on the current expectations and beliefs of Amgen. All statements, other than statements of historical fact, are statements that could be deemed forward-looking statements, including estimates of revenues, operating margins, capital expenditures, cash, other financial metrics, expected legal, arbitration, political, regulatory or clinical results or practices, customer and prescriber patterns or practices, reimbursement activities and outcomes and other such estimates and results. Forward-looking statements involve significant risks and uncertainties, including those discussed below and more fully described in the Securities and Exchange Commission reports filed by Amgen, including its most recent annual report on Form 10-K and any subsequent periodic reports on Form 10-Q and current reports on Form 8-K. Unless otherwise noted, Amgen is providing this information as of the date of this news release and does not undertake any obligation to update any forward-looking statements contained in this document as a result of new information, future events or otherwise.

No forward-looking statement can be guaranteed, and actual results may differ materially from those Amgen project. Amgen's results may be affected by its ability to successfully market both new and existing products domestically and internationally, clinical and regulatory developments involving current and future products, sales growth of recently launched products, competition from other products including biosimilars, difficulties or delays in manufacturing its products and global economic conditions. In addition, sales of Amgen's products are affected by pricing pressure, political and public scrutiny and reimbursement policies imposed by third-party payers, including governments, private insurance plans and managed care providers and may be affected by regulatory, clinical and guideline developments and domestic and international trends toward managed care and healthcare cost containment. Furthermore, Amgen's research, testing, pricing, marketing and other operations are subject to extensive regulation by domestic and foreign government regulatory authorities. Amgen or others could identify safety, side effects or manufacturing problems with its products, including its devices, after they are on the market. Amgen's business may be impacted by government investigations, litigation and product liability claims. In addition, Amgen's business may be impacted by the adoption of new tax legislation or exposure to additional tax liabilities. If we fail to meet the

compliance obligations in the corporate integrity agreement between us and the U.S. government, we could become subject to significant sanctions. Further, while Amgen routinely obtains patents for its products and technology, the protection offered by its patents and patent applications may be challenged, invalidated or circumvented by its competitors, or Amgen may fail to prevail in present and future intellectual property litigation. Amgen performs a substantial amount of its commercial manufacturing activities at a few key facilities, including in Puerto Rico, and also depends on third parties for a portion of its manufacturing activities, and limits on supply may constrain sales of certain of its current products and product candidate development. In addition, Amgen competes with other companies with respect to many of its marketed products as well as for the discovery and development of new products. Discovery or identification of new product candidates or development of new indications for existing products cannot be guaranteed and movement from concept to product is uncertain; consequently, there can be no guarantee that any particular product candidate or development of a new indication for an existing product will be successful and become a commercial product. Further, some raw materials, medical devices and component parts for Amgen's products are supplied by sole third-party suppliers. Certain of Amgen's distributors, customers and payers have substantial purchasing leverage in their dealings with Amgen. The discovery of significant problems with a product similar to one of Amgen's products that implicate an entire class of products could have a material adverse effect on sales of the affected products and on its business and results of operations. Amgen's efforts to acquire other companies or products and to integrate the operations of companies Amgen has acquired may not be successful. A breakdown, cyberattack or information security breach could compromise the confidentiality, integrity and availability of Amgen's systems and Amgen's data. Amgen's stock price may be volatile and may be affected by a number of events. Amgen's business performance could affect or limit the ability of the Amgen Board of Directors to declare a dividend or its ability to pay a dividend or repurchase its common stock. Amgen may not be able to access the capital and credit markets on terms that are favorable to it, or at all.

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