## COMOTION INNOVATION >> IMPACT

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## Media Contacts:

Clare LaFond: 206-616-9540-office / 206-953-8532-cell / <u>clarela@uw.edu</u> Lucas Nivon: 206-258-6561-office/ 617-818-2334-cell / <u>lucas@cyrusbio.com</u>

## University of Washington licenses new technology to Cyrus Biotech to accelerate drug development

Cyrus creating easy-to-use version of Rosetta software package to bring medicines to market

Cyrus Biotechnology has signed a software licensing agreement with CoMotion at the University of Washington to create an easy-to-use version of the Rosetta software package first developed in the lab of David Baker, UW professor of biochemistry and director of the Institute for Protein Design. To be deployed as software-as-a-service (SaaS) with accompanying user support and training, Cyrus Biotech's accessible, user-friendly version aims to accelerate drug development to bring new medicines to market. Cyrus has received a round of seed funding from The W Fund, an early-stage venture fund that invests in startups spinning out of the UW and other research institutions across the state, and from the angel investment network WINGS.

The Rosetta software program developed by Baker and his team is the world standard for predicting protein structures and designing new proteins. Rosetta's ability to sort through large data sets speeds the process of designing proteins with therapeutic functions, enabling scientists to design new proteins never before seen in nature and to re-design proteins for potential therapeutic uses. While the Rosetta software suite has enabled notable scientific advances in computational biology, these powerful tools have required years of training and huge, specialized computer clusters to be useful.

Cyrus plans to unleash the latent power of Rosetta by creating a new graphical user interface, by automating sophisticated procedures, and by deploying on the cloud to provide access to tens of thousands of computers.

"Cyrus is listening to customers and interviewing scientists to figure out which Rosetta tools are most useful, with the goal of creating software that fits scientists' real needs, and a support team to deal with difficult customer tasks," said Lucas Nivon, CEO and co-founder of Cyrus Biotech and a former translational investigator at the Institute for Protein Design at UW. The founding team brings decades of protein modeling and high-performance-computing experience, with Yifan Song, Chief Science Officer, and Javier Castellanos, CTO.

Nivon said during the next two years Cyrus will introduce a set of first-in-class protein design software tools based on published and proven results that will enable the design of new protein therapeutics and diagnostics. Cyrus plans to bring these tools to market for computer simulation, or "in silico," modeling of small-molecule drugs and proteins. Among these will be the homology, or comparative, modeling software described as the "Babe Ruth" of protein modeling because it outperforms the nearest competition with more than quadruple the number of "home runs." Known as computer-aided design for proteins, or CAD for proteins, these tools will create an important new market "that will revolutionize the way new medicines are created in BioPharma," Nivon said.

"This is an opportunity to leverage the exceptional work of David Baker and his team and the significant progress they have achieved in protein design and protein structure prediction through the development of the world-leading Rosetta software," said UW Vice Provost for Innovation Vikram Jandhyala. "We are excited about licensing this UW technology to Cyrus to further this innovative approach to designing new protein therapeutics and diagnostics that have the potential to benefit patients worldwide."

Cyrus plans to use its seed funding to build a development team, with limited alpha-testing of software in summer 2015 and release of a beta product in late 2015.

"The W Fund is very excited to see Cyrus unleash the commercial and therapeutic potential of Rosetta software," said Chad Waite of the W Fund. "I have been interested in commercialization of Rosetta for many years. It is fantastic that the Cyrus team have taken the lead in getting this important functionality to the masses."

## **About CoMotion**

As one of the leading recipients of federal funding for research, the University of Washington is producing innovations that have the power to change the world—from biofuel alternatives, to more effective treatments for Alzheimer's disease and brain cancer, to purification technology for drinking water in the developing world. CoMotion is the UW's collaborative innovation hub. Through close partnerships across campus and the community, CoMotion works with innovation leaders to grow successful programs that leverage the cross-disciplinary expertise of UW faculty, staff and students. A national leader in university technology transfer, CoMotion offers expertise in models for distribution, in managing software and digital assets, in IP planning and protection, and in licenses and negotiation. With partners across the UW and throughout Seattle, CoMotion provides UW researchers with an excellent environment for starting new technology companies. By promoting entrepreneurial thinking, innovation

mindsets, creative problem-solving, and experiential, team-based project learning, CoMotion delivers the tools and connections the UW community needs to accelerate the impact of UW innovations and to grow local and global innovation ecosystems.