



FOR IMMEDIATE RELEASE

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**CPEX Pharmaceuticals Announces Appointment of
New Chief Scientific Officer**

Exeter, NH, February 1, 2010 – CPEX Pharmaceuticals, Inc. (NASDAQ: CPEX) announced the appointment of Nils Bergenhem, Ph.D., as its new Chief Scientific Officer, effective February 1, 2010. Dr. Bergenhem will succeed Fred Feldman, Ph.D., who is retiring after a 35 year career in research and drug development. Dr. Feldman has served as the Chief Science Officer of CPEX since its spin-off from Bentley Pharmaceuticals, Inc. in 2008. Dr. Feldman will work with Dr. Bergenhem and CPEX for an interim period to ensure a smooth transition.

Dr. Bergenhem has extensive experience in the research and drug development for metabolic diseases, including diabetes, obesity and cardiovascular disease, at a number of small and large companies. Most recently, he was Chief Scientific Officer at Escoublac, Inc, the first biotechnology company in the Biogen Idec Innovations Incubator. There, Dr. Bergenhem was responsible for development and execution of the research plan for human osteocalcin in metabolic disease, Type 2 diabetes and obesity. Prior to Escoublac, Dr. Bergenhem was the CSO at Adipogenix, where he oversaw internal drug discovery and development programs for obesity and related co-morbidities, as well as the AdipoGenix alliance with Johnson & Johnson. Previously, he held leadership positions in research at The Institute for Diabetes Discovery, OSI Pharmaceuticals, and Novo Nordisk. Dr. Bergenhem received his B.S. in Chemistry at Linköping University and Ph.D. in Biochemistry from Umeå University in Sweden.

“We are very pleased with Nils’ decision to join us. His experience and success in drug discovery and development, particularly in the metabolic space, will be beneficial for CPEX Pharmaceuticals as our permeation enhancement technology platform and clinical programs advance,” said John Sedor, President and Chief Executive Officer of CPEX Pharmaceuticals.

“Nils is a recognized contributor to organizational growth and we are looking forward to utilizing his expertise and leadership skills to help enhance our pipeline. We would like to thank Dr. Feldman for the positive impact he has had at CPEX Pharmaceuticals and his achievements in the advancement of our development programs. We will always appreciate the dedication Fred has shown and wish him the best in his retirement.”

Dr. Bergenhem said, “I am excited to be part of the team at CPEX and look forward to spearheading further development of the Company’s CPE-215 drug delivery platform, which I believe holds great potential. With the advancement of the Nasulin™ program and the Serenity collaboration and a number of therapeutic and commercial opportunities for the permeation technology, I believe it is an opportune time to join the Company.”

About CPEX Pharmaceuticals

CPEX Pharmaceuticals, Inc is an emerging specialty pharmaceutical company focused on the development, licensing and commercialization of pharmaceutical products utilizing CPEX’s validated drug delivery platform technology. CPEX has U.S. and international patents and other proprietary rights to technology that facilitates the absorption of drugs. CPEX has licensed applications of its proprietary CPE-215® drug delivery technology to Auxilium Pharmaceuticals, Inc. which launched Testim®, a topical testosterone gel, in 2003. CPEX is also developing a proprietary intranasal insulin product candidate, Nasulin™, which is currently in Phase 2 clinical trials. CPEX maintains its headquarters in Exeter, NH. For more information about CPEX, please visit www.cpexpharm.com.

This press release contains forward-looking statements, including, without limitation, statements regarding the potential for further development of Nasulin and other therapeutic and commercial opportunities for CPEX’s permeation technology, including the collaboration with Serenity Pharmaceuticals. These forward-looking statements are subject to a number of risks and uncertainties that could cause actual results to differ materially from future results expressed or implied by such statements. Factors that may cause such differences include, but are not limited to, risks associated with the following: clinical trials may not demonstrate the efficacy and safety of Nasulin, regulatory approvals may be delayed or not obtained at all, competition from other products, the unpredictability of patent protection, CPEX’s dependence on obtaining agreements with other parties to conduct clinical trials and commercialize its product candidates that use its drug delivery technology, CPEX’s products may not achieve market acceptance or favorable reimbursement rates from health insurers, intellectual property litigation, and other uncertainties detailed under “Risk Factors” in CPEX’s Annual Report on Form 10-K dated March 25, 2009 filed with the Securities and Exchange Commission. CPEX cautions investors not to place undue reliance on the forward-looking statements contained in this release. These statements speak only as of the date of this document, and CPEX undertakes no obligation to update or revise the statements, except as may be required by law.