

# FCR 26

Office of the President  
September 5, 2014

Members, Board of Trustees:

## PATENT ASSIGNMENT REPORT

Recommendation: that the Board of Trustees accept the patent assignment report for the period April 1 through June 30, 2014.

Background: The March 1997 meeting of the Board of Trustees authorized the University of Kentucky Research Foundation to conduct all future copyright and patent filings and prosecutions. Quarterly reports on patent and copyright applications are to be submitted to the Finance Committee of the Board.

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Action taken:     Approved     Disapproved     Other \_\_\_\_\_

PATENT ASSIGNMENT  
FOR THE PERIOD April 1 - June 30, 2014

Patents

The following assignment on behalf of the Board of Trustees of the University of Kentucky Research Foundation has been executed:

1. **PCT Application Serial Number: PCT/US14/28315**  
**Filed:** March 14, 2014  
**Title:** “1,4-Disubstituted Piperidines, 1,4-Disubstituted Piperazines, 1,4-Disubstituted Diazepanes, and 1,3-Disubstituted Pyrrolidine Compounds”  
**Inventors:** Peter Crooks (formerly Pharmaceutical Sciences), Linda Dwoskin, John Culver, Justin Nickell (Pharmaceutical Sciences), and Guangrong Zheng  
**Technical Description:** This invention relates to 1,4-disubstituted piperidine, 1,4-disubstituted piperazine, 1,4-disubstituted diazepane, and 1,4-disubstituted pyrrolidine compounds and their method of use in the treatment of diseases and pathologies of the central nervous system, the treatment of drug dependence/abuse and withdrawal from, and the treatment of eating disorders such as obesity.  
**Summary:** This invention discloses the general formula for a compound and 70 exemplary compounds that show promise in the treatment of eating disorders, drug dependence/abuse, and central nervous system diseases or pathologies. Of the 70 exemplary compounds, six have already successfully met the criteria for lead compound status. The invention also discloses a pharmaceutical composition and appropriate dosage for the use of the compound or its analogs in human subjects. The drug may be administered by inhalation, topically, orally, intravenously, transdermally or rectally. The drug may also be administered with a second drug to cause synergistic effects.
  
2. **U.S. Patent Application Serial Number: 14/309,045**  
**Filed:** June 19, 2014  
**Title:** “Method for Bed Bug Control”  
**Inventors:** Yong Baio Liu and Kenneth Haynes (Entomology)  
**Technical Description:** This invention discloses a method of treating bed-bug infested items in a sealed environment by varying the oxygen level, temperature and treatment time.  
**Summary:** Bed bugs are parasitic insects of the cimicid family that feed exclusively on blood. With a preference for human blood and bites that result in itchy, inflamed tissue, bed bugs are considered a public health pest by the EPA, CDC and USDA. Bed bugs can also significantly reduce the quality of life by causing sleeplessness, anxiety and embarrassment from the social stigma associated with a bed-bug infestation. Unfortunately, bed bugs are difficult to eradicate. Known treatments include insecticides, traps and physical treatments such as steaming and hot-water washing. However, all of these treatments have limitations, such as residual toxins left on the treated items or high cost. Thus, a more economical, effective, safe, and environmentally friendly treatment for bed bug control is needed. This invention fulfills all those criteria.

This invention discloses a method of treating a bed bug contaminated object by placing it in a sealable enclosure of any size desirable from a box to an airplane, adjusting the temperature within the enclosure between 20°C and 35°C, reducing the oxygen level within the enclosure to between 0.3% and 3%, sealing the enclosure for a sufficient amount of time (between 6 and 72 hours), and finally venting the enclosure. Experiments have shown that the mortalities of bed bugs in different life stages—egg, nymph and adult—respond differently to different combinations oxygen levels, temperature and treatment time.

#### Patent Activities

Fiscal year to date as of June 30, 2014

Number of Patent Applications	23
Number of Patents Issued	30
Patent Gross Revenue	\$3,317,184.82