

# FCR 3

Office of the President  
March 2, 2004

Members, Board of Trustees:

## PATENT ASSIGNMENT REPORT

Recommendation: that the patent assignment report for the period November 1, 2003 through January 31, 2004 be accepted.

Background: FCR 5, dated March 4, 1997, authorized that all future copyright and patent filings and prosecutions be conducted by the University of Kentucky Research Foundation (UKRF), and that the Vice President for Research and Graduate Studies or his designee be authorized to execute any needed documents to obtain appropriate patent or copyright protection. 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  
QUARTERLY FOR THE PERIOD NOVEMBER 1, 2003 THROUGH  
JANUARY 31, 2004

Patents

The following assignments on behalf of the Board of Trustees to the University of Kentucky Research Foundation have been executed:

1. U.S. Patent Application Serial Number: (to be assigned), filed December 3, 2003, titled "MONITORING AND CORRECTION OF GEOMETRIC DISTORTION IN PROJECTED DISPLAYS" Inventors: Dr. Christopher O. Jaynes and Dr. Robert M. Steele. The present invention provides a technique, and associated system and computer-executable program code on a computer-readable storage medium, for automatically correcting distortion of a front-projected display under observation by at least one camera. The technique may be employed in a myriad of front-projected display environments, e.g., single or multiple projectors and cameras are used. The technique includes: observing a first image, projected from at least one projector, comprising at least one target distribution of light intensities; for each conglomeration of white pixels of a difference image, compute a bounding box comprising a corresponding conglomeration of pixels in a framebuffer information of the camera, compute a bounding box comprising a corresponding conglomeration of pixels in a framebuffer information of the projector, compute an initial homography matrix, Htemp, mapping pixels of the projector's bounding box to those of the camera's bounding box, optimize the initial homography matrix, compute a central location, (CX, cy), of the camera's bounding box using the initial homography matrix; and using a plurality of correspondence values comprising the correspondence, compute a corrective transform to aid in the automatic correcting of the display.
2. U.S. Patent Application Serial Number: (to be assigned), filed December 4, 2003, titled "IDENTIFICATION OF A UNIQUE CORE DOMAIN OF PAR-4 SUFFICIENT FOR SELECTIVE APOPTOSIS INDUCTION IN CANCER CELLS" Inventors: Dr. Vivek M. Rangnekar, Dr. Nadia El-Geundy, Dr. Yanming Zhao and Dr. Sushma Gurumurthy. The present invention provides Par-4 mutants which cause apoptosis in cancer cells that are sensitive to Par-4 and also induce apoptosis in cancer cells that are resistant to Par-4. The present invention also relates to methods of using the Par-4 mutant to treat certain cancers, as well as to kits, vectors, and polypeptides for same.
3. U.S. Patent Application Serial Number: (to be assigned), filed October 30, 2003, titled "REGULATION OF FOLLICULAR DEVELOPMENT AND OVULATION BY CYTOSKELETAL GENES AND GENE PRODUCTS" Inventors: Dr. Tae H. Ji and Dr. Inhae Ji. The present invention provides for the regulation of follicular development and ovulation by modulating

cytoskeletal genes and gene products. More particularly, this invention relates to the use of tubulin, tropomyosin-4 and kinesin heavy chain to control follicular development and/or the ovulation cycle.

4. U.S. Patent Application Serial Number: (to be assigned), filed November 24, 2003, titled "MUTANTS AND ASSAY SYSTEM TO IDENTIFY USP/RXR LIGANDS" Inventors: Dr. Grace Jones and Dr. Davy Jones. The present invention provides mutant nuclear hormone genes that encode mutant nuclear hormone receptors, in which particular amino acid residues are substituted with respect to wild type, so as to be able to detect ligand binding to the mutant receptor by either a change in a physical property of the mutant receptor and/or an transcriptional induction of a nuclear hormone receptor construct. The invention also relates to a nuclear hormone receptor response element denoted by the formula YDRXZ comprising a direct repeat (DR) comprising two half sites separated by X nucleic acid bases; wherein Z indicates the presence of at least one DR oriented in either a forward or reverse orientation; wherein Y equals 1 to 8 forward and/or reverse direct repeats; and X equals 1 to about 12.
  
5. U.S. Patent Application Serial Number: 10/462,297, filed June 16, 2003, titled "SUBDIVISION SURFACE-BASED GEOMETRIC MODELING SYSTEM" Inventors: Dr. Fuhua Cheng and Dr. Junhai Yong. The present invention provides a method for surface modeling of images to produce realistic images or to provide simulations with accurate surface information. More particularly, the present invention relates to a new subdivision depth computation technique and to an improved label-driven adaptive subdivision technique for use in Catmull-Clark subdivision surface modeling systems. The method comprises computing a subdivision depth to determine the number of recursive subdivisions that may be performed on a control mesh to generate a plurality of finer mesh elements while preserving a predetermined error tolerance, and using the computed subdivision depth to construct an adaptively refined mesh that is substantially similar to the control mesh within the predetermined error tolerance. Limit control surfaces with and without extraordinary vertices may be analysed using the method of the invention. In another aspect, a software program for accomplishing the method of the present invention is provided.