

## EXPLORE, EXPERIENCE, EDUCATE A TECHNOLOGICAL BREAKTHROUGH FOR MOLECULAR VISUALISATION

### Experiencing VR for PyMOL

Scientists and students alike know that the visualisation of protein interactions in two dimensions ranges from tedious to virtually impossible owing to the proteins' sheer size and complexity. This problem has now been solved by Virtalis, a leading force in advanced visualisation. Our cost-effective range of commercially available immersive, 3D Virtual Reality (VR) solutions enables visualisation to take on a new dimension.



### Transforms your Viewing Experience

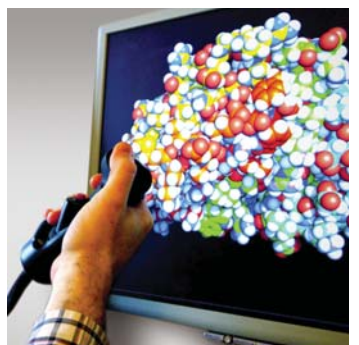
Through work conducted for Dr. James F. Hinton, University Professor of Chemistry and Biochemistry at University of Arkansas, which hosts the US Centre for Protein Function and Structure, Virtalis developed a **VR software enabler for PyMOL**, the most widely used 3D molecular visualisation application.

**"I knew what I wanted and I knew what I needed. I tried hard to find the solution and the VR enabling of PyMOL by Virtalis makes interacting with protein structures in the ActiveMove very easy. People are rather blasé when I introduce the system, but I wait for the inevitable gasps that follow as they see its power."**

Dr. James F. Hinton.



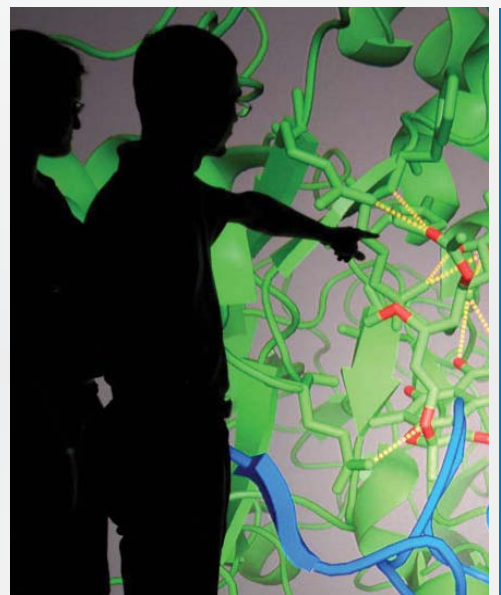
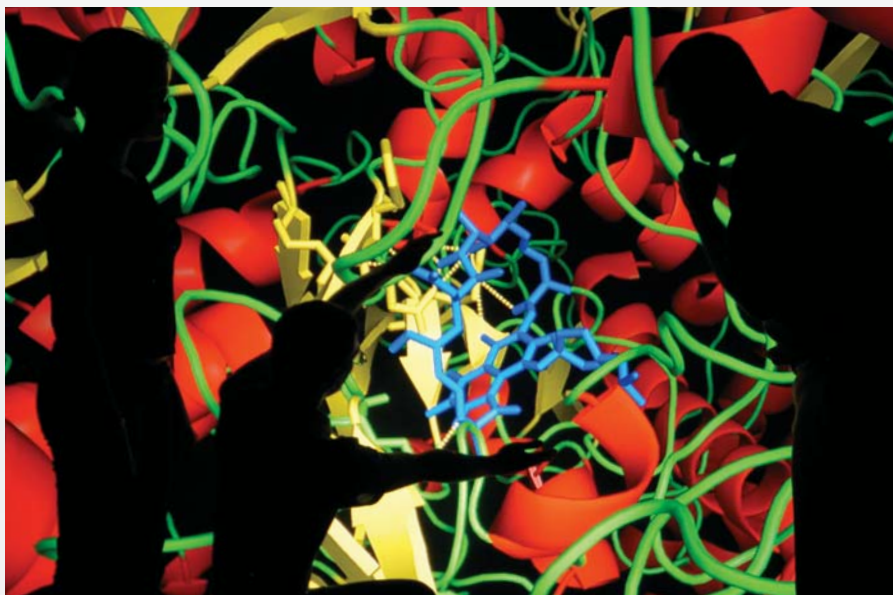
Users can interact in innovative new ways



#### KEY BENEFITS:

- Enables users to "jump into" a 3D display of complex biochemical structures
- User fully interacts with structures – touch, feel and see the molecules
- Helps understanding of complex structures and promotes collaboration
- A dramatic 3D VR experience for students, teachers and researchers
- Cost-effective software and display solution

# SOLUTIONS FOR RESEARCHERS AND STUDENTS...



## Seeing the Benefits

Users can experience protein models in 3D by either being immersed in a Virtalis **ActiveMove** or **ActiveWall** system (a transportable or installed tracked, 3D display system) or a Virtalis **ActiveSpace** system (an integrated tracked head-mounted display system). Both systems allow researchers and students to examine molecules from all sides and from within the molecule itself, which can be crucial for understanding the relationship between structure and function.

Virtalis' **VR Enabler for PyMOL** enables head and hand positions and orientations to be tracked in real-time as the user navigates through the virtual environment in front of the projected visuals using a hand-held wand. The visuals are updated smoothly in real-time and the correct perspective rendered according to the user's precise position and orientation in virtual space. This means the user is no longer merely a passive onlooker, but is totally immersed in the virtual environment. In addition to navigational functionality, the wand facilitates interaction with the virtual content and allows the user to grab the molecule and move and rotate it, facilitating a better understanding of its structure and enhancing the ability to explain it to others.

**"If you think of interdisciplinary approaches, such as the work of a biologist, or a chemist, or a physicist: All three scientists could look at this technology, and see three different things, to come up with different ideas based on what they are seeing. And so I think that immersive technology could be a potentially novel way to interject interdisciplinary collaboration."**

**Paul Adams, Assistant Professor of Chemistry and Biochemistry at the University of Arkansas.**

**"Immersive 3D virtual reality allows the students, in their quest to solve real world problems, the opportunity to view their world in a different way."**  
**Dr. James F. Hinton.**

**"Instead of an individual experience, the Virtalis system uses stereoscopic projection to bring 3D to large audiences. We're using the Virtalis system to help students visualise macro-molecular structures, such as proteins in 3D. Simple illustrations in textbooks can't begin to convey these very big, complex molecules."**

**Vilmos Fülöp, Biochemistry Professor at University of Warwick.**

**WATCH VIDEOS FEATURING DR. JAMES HINTON ON VIRTALIS' YOUTUBE AREA** 



**WWW.VIRTALIS.COM**