



















## **Virtual Patient Challenges**

- The current patient anatomy is static
- Time factor (the 4th dimension) is considered, however, inter-fraction and intra-fraction motion still have issues
- Organs deformation is not considered or estimated only (the 5th dimension)
- Treatment final dosimetry result is unclear
- No further study for biology effect evaluation and follow-up

Memorial Sloan Kettering Cancer Center

## **VPGRT Concept**

- ✓ Create a virtual patient to guide the radiation therapy of the patient
- ✓ The virtual patient is alive and changes with the current patient status
- ✓ The virtual patient can predict the future development of the patient

Memorial Sloan Kettering Cancer Center



























