

# Nano-X

Improving global access  
to radiotherapy

Paul Liu

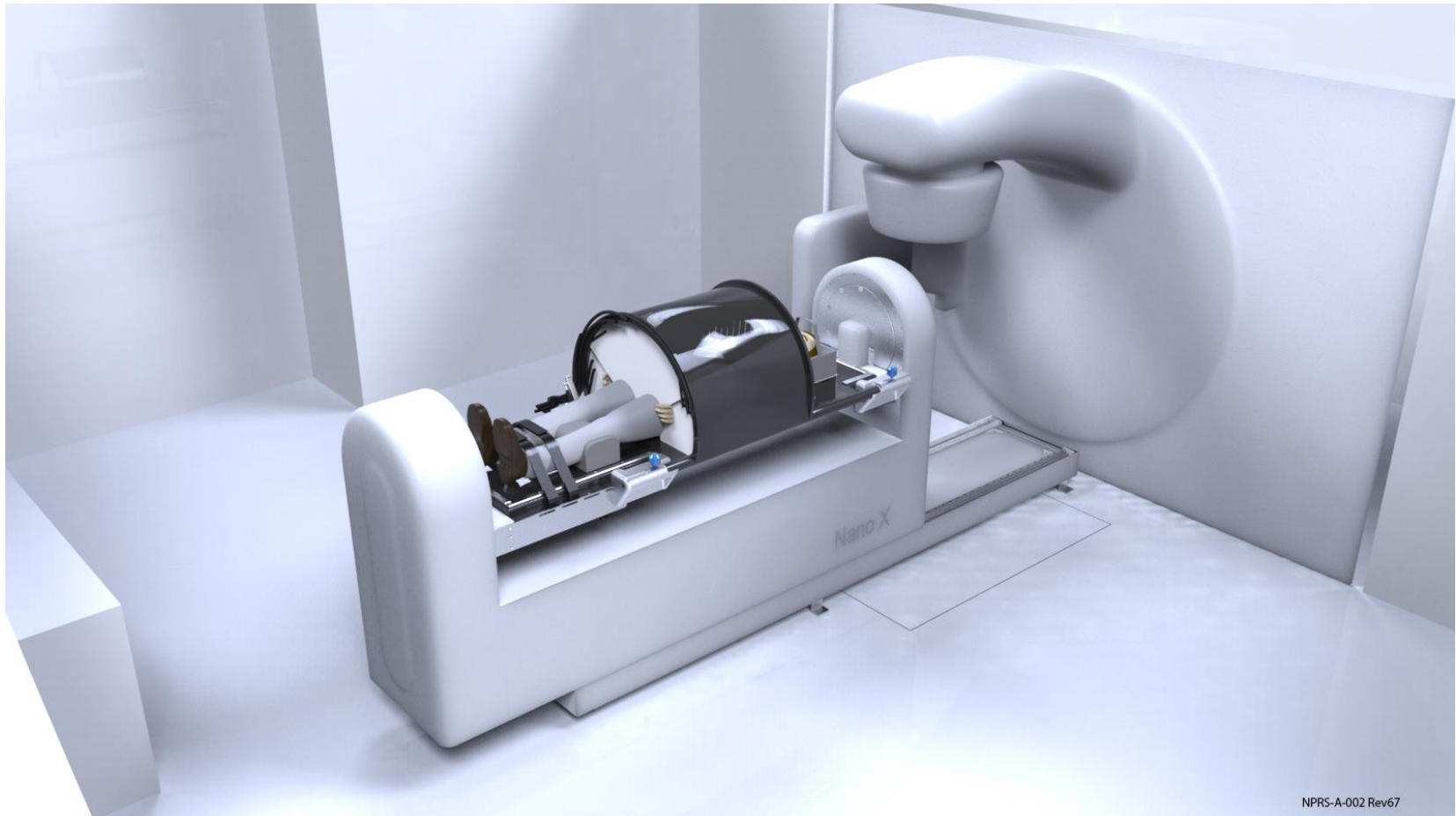
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# Nano-X

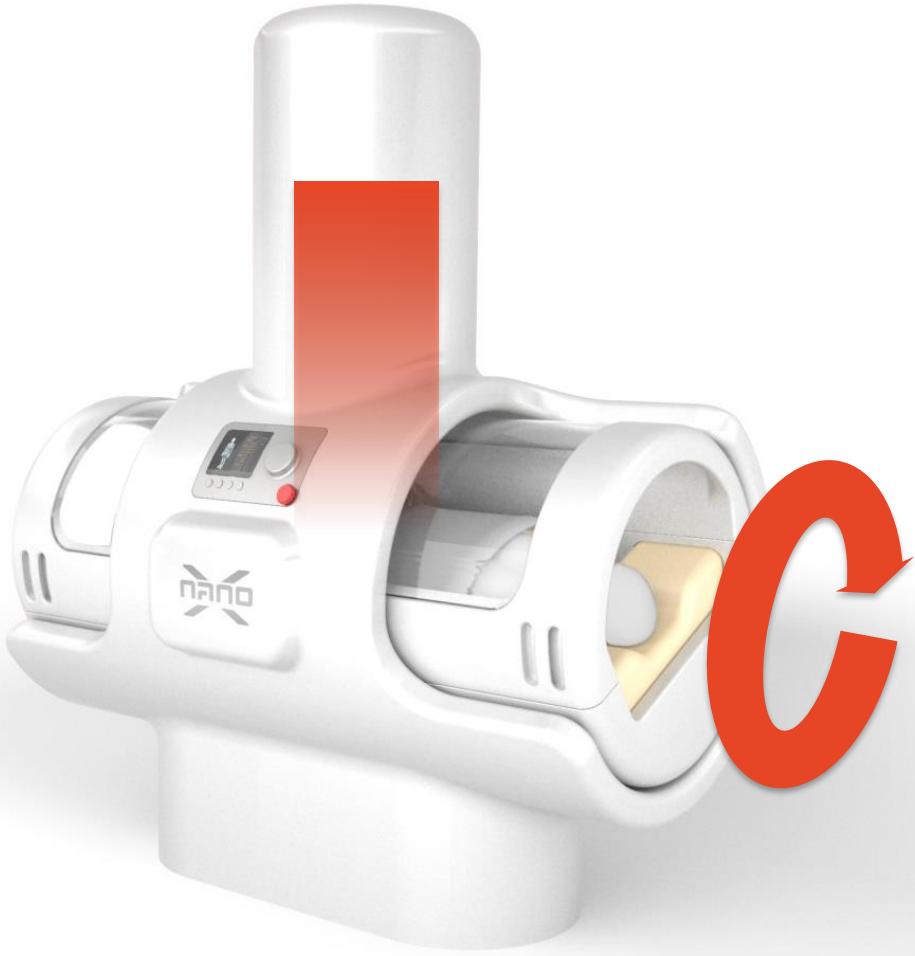


**A smaller, smarter linear accelerator to improve global access**

# Conventional



# Nano-X





# Patient rotation

Benign Paroxysmal  
Positioning Vertigo



Acute Respiratory  
Distress Syndrome

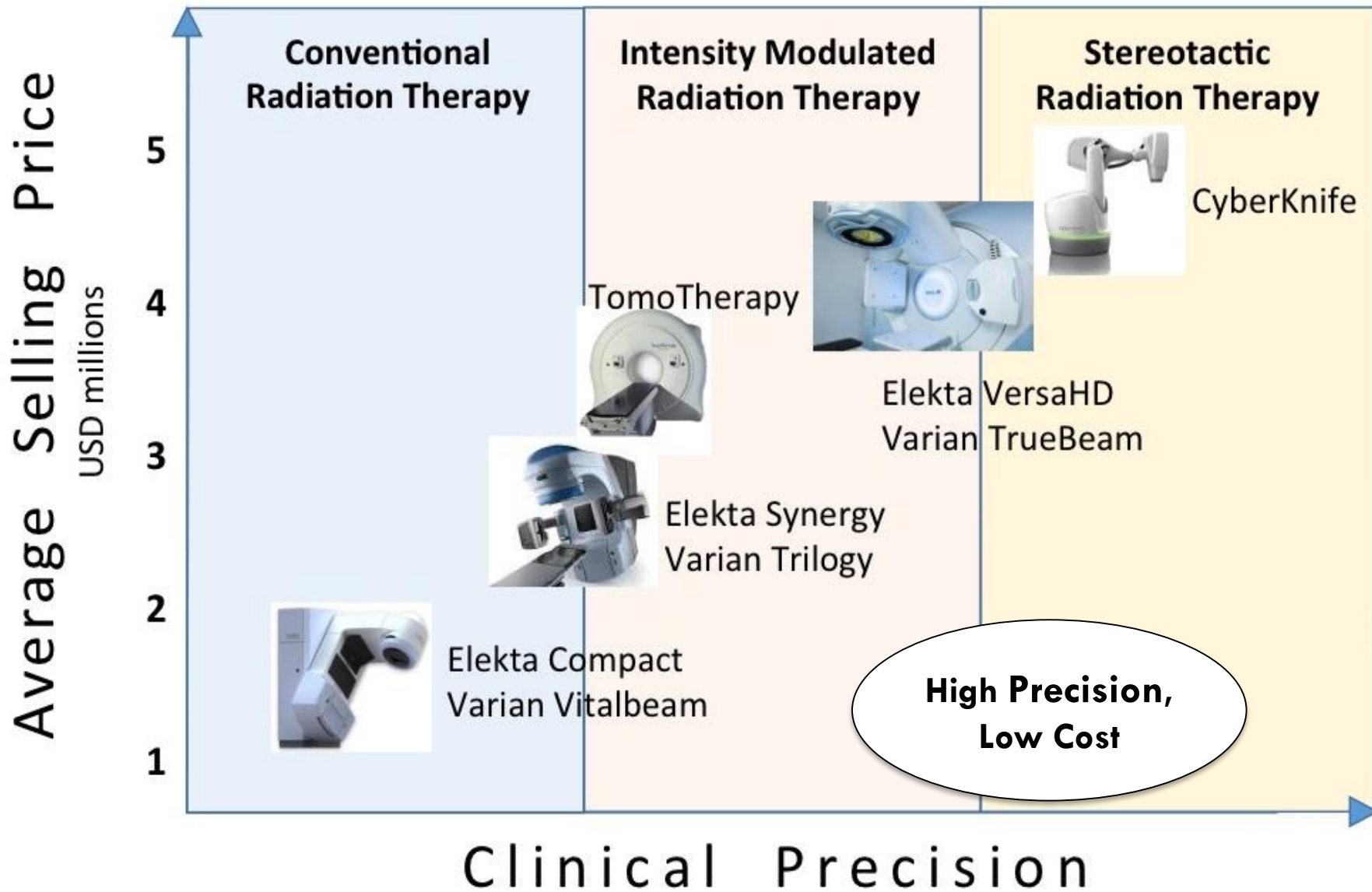


Stereotactic Proton  
Brain Radiotherapy

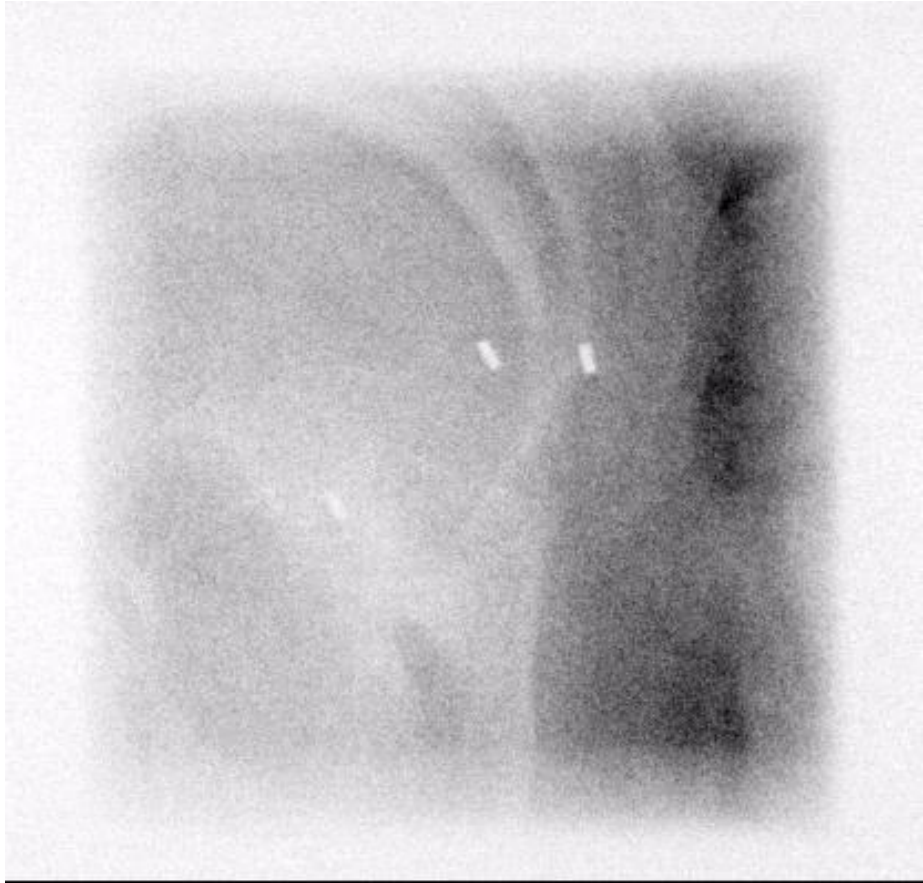


# Benefits of fixed-beam radiotherapy

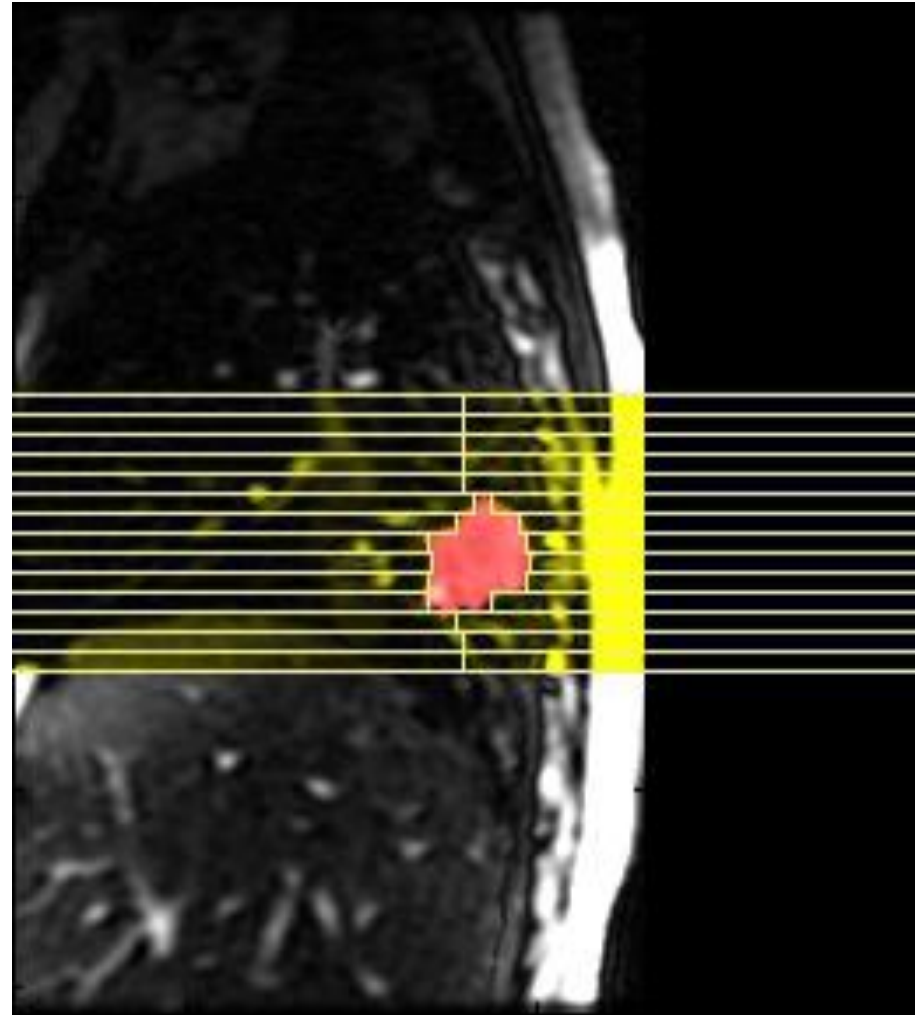
- No need to rotate the gantry
- Smaller and more costs-effective linear accelerator
- More reliable with fewer moving parts
- Less shielding and bunker infrastructure required



# Kilovoltage Intrafraction Monitoring



# MLC Tracking





# Image-guidance clinical trials



Prostate  
2013 – 2015  
28 patients  
858 fractions

Lung SBRT  
2015 –  
7 patients  
29 fractions

Prostate SBRT  
2016 –  
6 patients  
70 fractions



# March 2017: First Prototype




# Patient rotation system





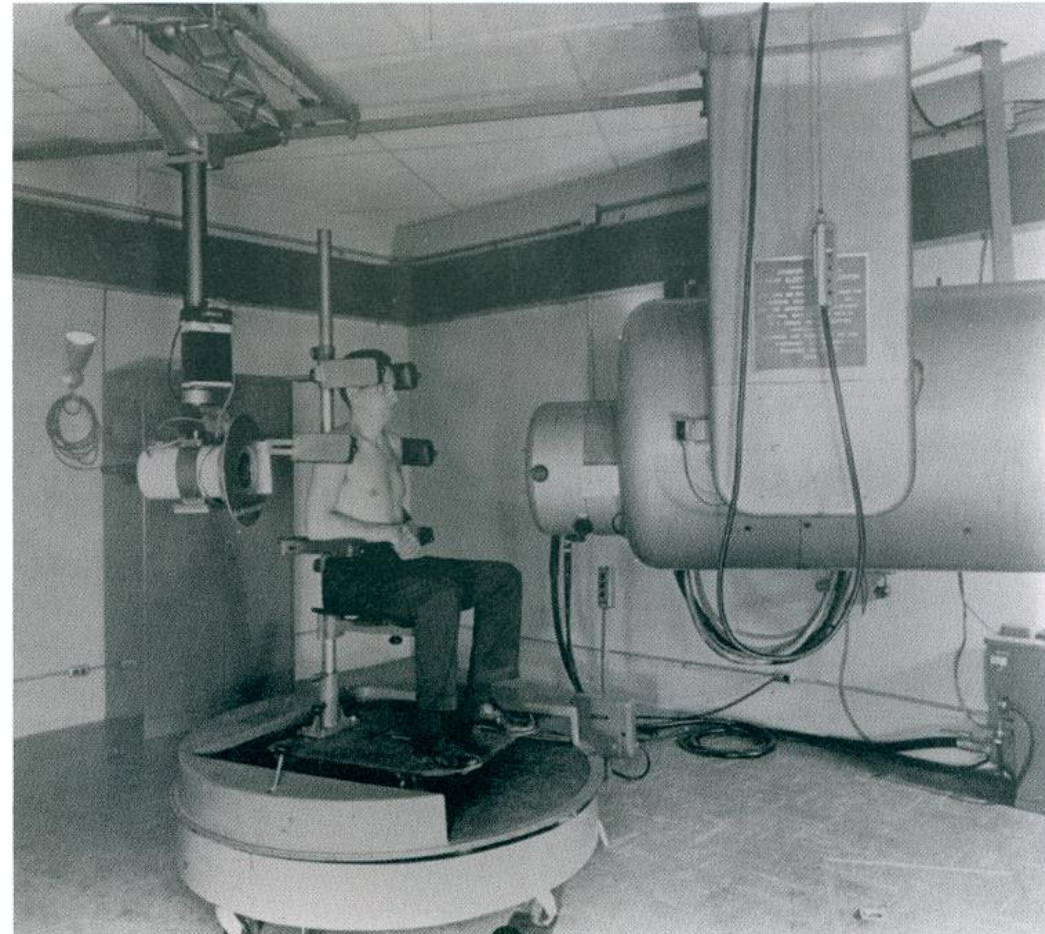
# First prototype



	Measure deformation	Imaging under rotation	Image-guided treatment under rotation
<b>Small phantom</b>	✓	✓	✓
<b>Small animal</b>	✓	✓	2018
<b>Full-size phantom</b>	2018	2018	2018
<b>Large animal /human</b>	 (humans in MRI)	2019 (canine)	2019 (canine)



# Vertical rotation system



*The prototype linear accelerator in operation. Radiation oncology department.*



# Radiation Physics Laboratory



## Contact

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