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# Pushing or pulling- How the cell finds its center



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**Abstract:** There are two contrasting views on how the centrosome is centered in the cell. One view is that microtubules grow out from the centrosome and push on the cell membrane. The other view is that molecular motors pull on microtubules and center the centrosome. We severed single living microtubules with a femtosecond laser. On severing, the minus-ended microtubules bend further, suggesting that microtubules are under tension. On inhibiting dynein activity, microtubules straighten. We propose that dynein pulls on microtubules and pulls the centrosome into place. I will conclude with evidence for how dynein also tugs on the nuclear surface and causes nuclear rotations.

**Biography:** Tanmay Lele received his PhD in Chemical Engineering from Purdue University in 2002 where he worked on non-linear dynamics of reactions on catalyst surfaces. He was a postdoctoral fellow at Harvard Medical School from 2002-2006 working with Donald Ingber in the area of cell mechanics. Since 2006, he has been at the University of Florida in Chemical Engineering. His research program focuses on cell mechanics, cell and tissue engineering and quantitative biology.