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May 3, 2000

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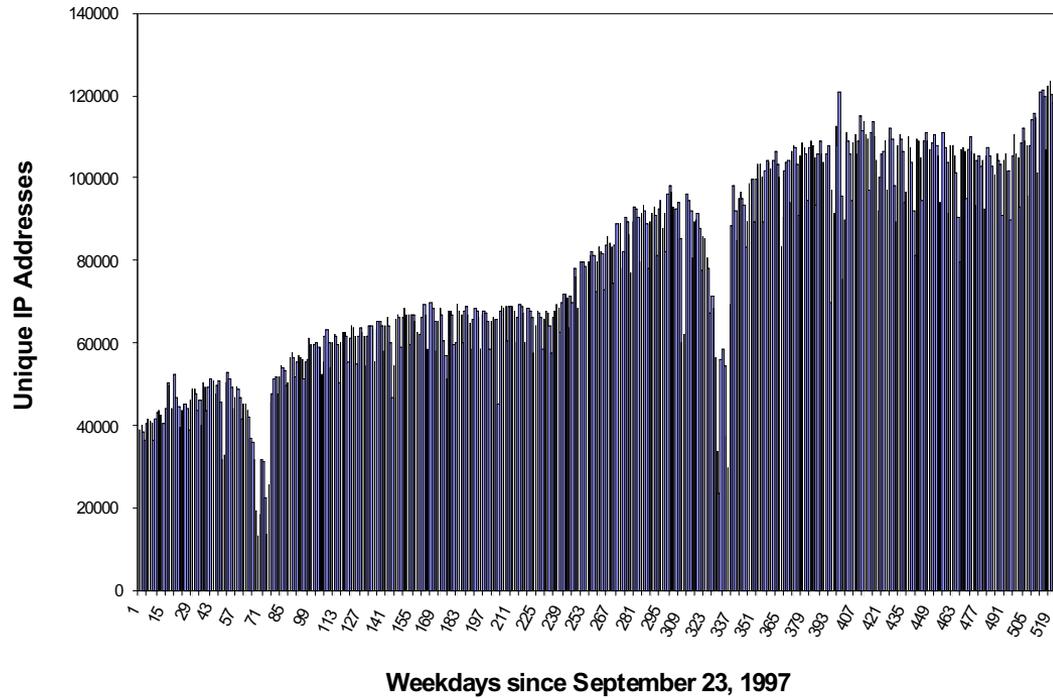
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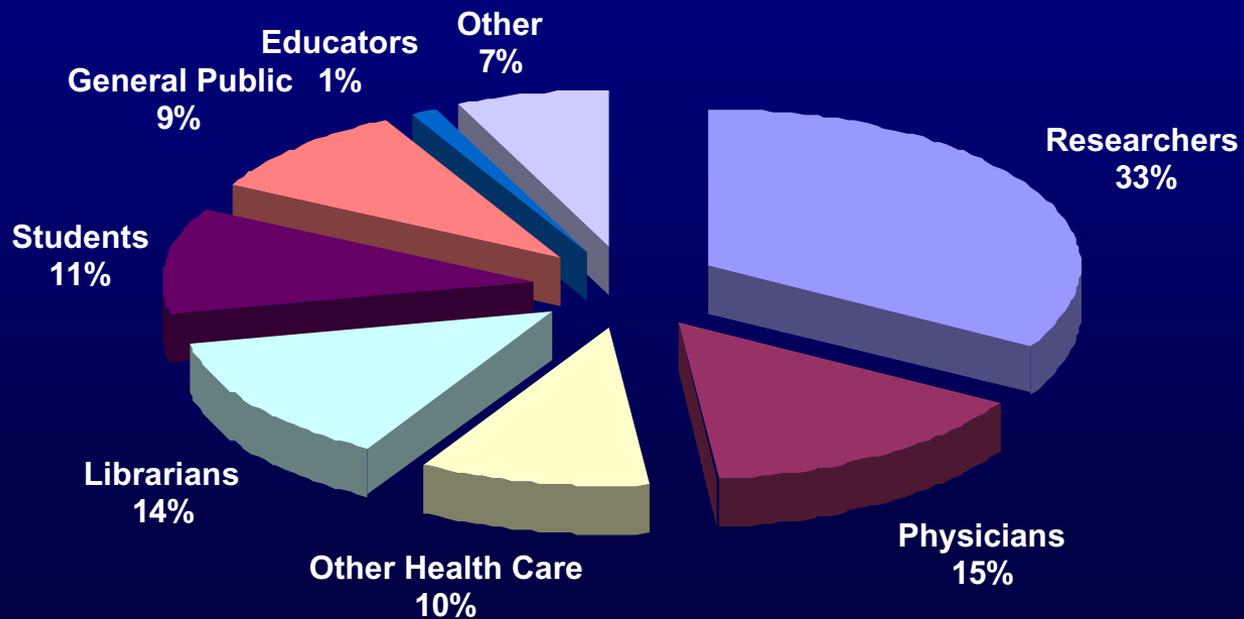
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- SGML
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Data Validation

- SGML parsing against DTD
- PDF inventory check
- Graphics inventory check

Create Digital Archive

Data Conversion

- Text Files (SGML to XML)
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- Generate PubMed IDs

Load Database

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- Supplemental Data Links

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- Special character check
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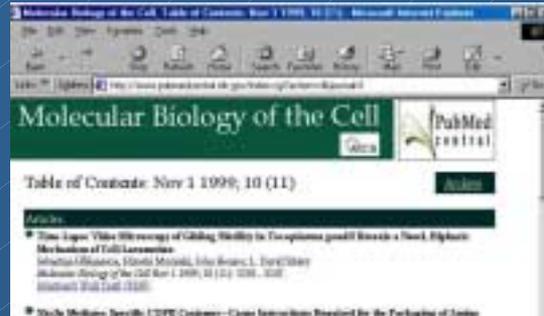


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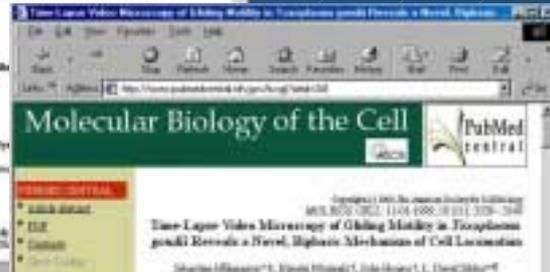


Molecular Biology of the Cell

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Time-Lapse Video Microscopy of Gliding Motility in *Trypanosoma gondii* Reveals a Novel, Biphasic Mechanism of Cell Locomotion

Michael H. Beaudoin¹, Yuhui Miao¹, John S. Heuser, Jr., L. David Sibley¹

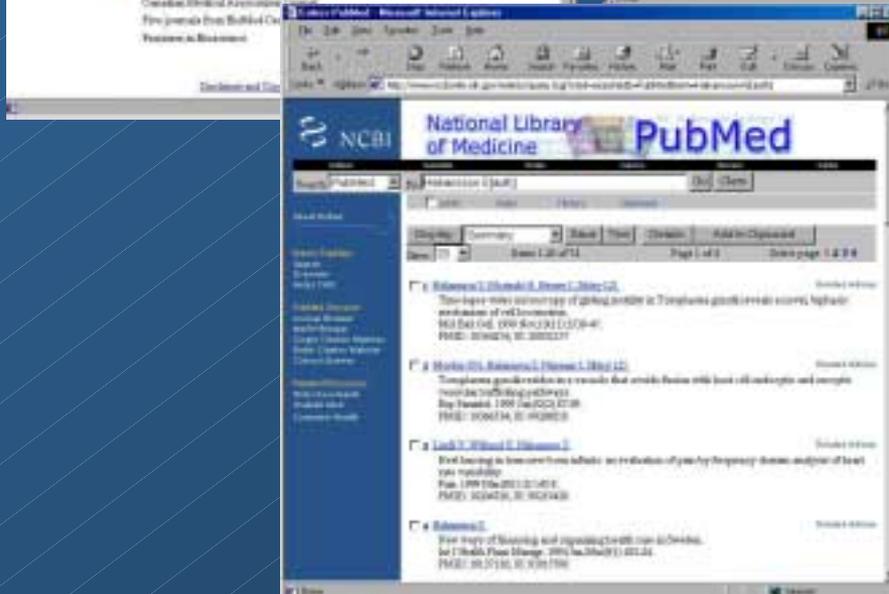
Departments of Molecular Microbiology and Cell Biology and Plant Chemistry, School of Medicine, St. Louis, Missouri 63103; ²Center for Cellular and Molecular Biology, University of Texas at Austin, Austin, Texas 78712; ³Department of Molecular Biology, University of California, San Diego, La Jolla, California 92037

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ABSTRACT

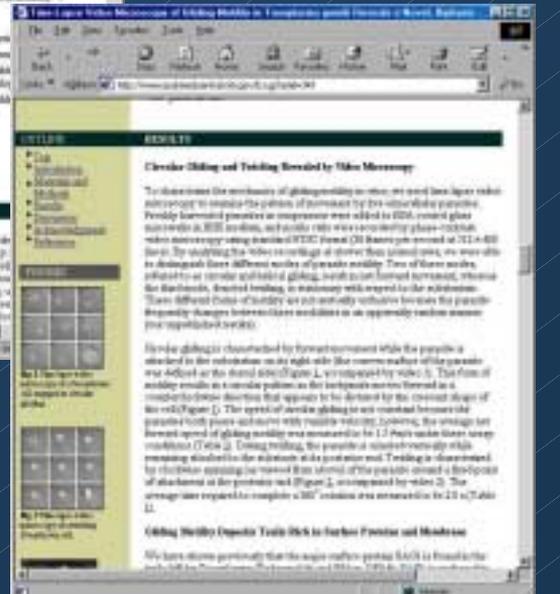
Trypanosoma gondii is a member of the phylum Kinetoplastida, a taxonomic lineage characterized by a unique form of gliding motility called "crawling." Although not a true flagellate, *T. gondii* is a cell with a distinct locomotory organelle. Here, we demonstrate that the gliding motility of *T. gondii* is characterized by a biphasic mechanism of cell locomotion. During gliding, continuous while the reserve parasite lies on its right side, the reserve is covered by a continuous

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- 5. **Characterization of the in vitro Model of Human Ether Amino Acid Mutations** (1999) 10(11):3331-3337. PMID: 10540004



Circular Gliding and Twisting Revealed by Video Microscopy

To determine the mechanics of gliding motility in vivo, we used time-lapse video microscopy to analyze the gliding of *Trypanosoma gondii* parasites. Periodically forward-positive anisotropy was added to the reserve position of the parasite in a 3D coordinate system. The parasite was then imaged at 1000 frames per second using a high-speed video camera. The images were then analyzed to determine the mechanics of gliding. The results show that the parasite exhibits a biphasic mechanism of cell locomotion. During gliding, continuous while the reserve parasite lies on its right side, the reserve is covered by a continuous

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