



# International Linear Collider Research at UIUC



## Some of our projects

### ILC damping ring kickers

- HV stripline kicker
- Fourier series pulse compression kicker
- Multimode coaxial structure ("Pan pipe")
- Fourier kicker
- All-pass filter as a pulse compressor
- Extraction kicker using hard disk write-head technology

### ILC high availability/high reliability control systems

- IPMI controller development
- ATCA shelf manager - blade communications
- OpenClovis supervisory system evaluation

### Axions

## Research in high energy physics, primarily concerning the ILC



galaxies? Do supersymmetric particles exist, and does supersymmetry unify the fundamental forces at the highest energy scales?

We hope to learn the answers to some of these questions through results from experiments to be performed at the [Large Hadron Collider](#), nearing completion at CERN in Geneva, Switzerland.

The [International Linear Collider](#) has similar physics goals, but its electron-positron collisions are expected to allow precision measurements that cannot be performed at the LHC, and are needed to understand more fully the nature of "electroweak symmetry breaking," the properties of the Higgs boson(s), and the characteristics of supersymmetric particles, should they exist.

The ILC will be a challenging machine to design and build. Its initial version will accelerate beams of electrons and positrons to an energy of 250 GeV and focus these beams to a thickness comparable to the size of a hemoglobin molecule. The focused beams will collide head-on after each travels through a fifteen kilometer linear accelerator built from superconducting niobium that has been cooled to within two degrees of absolute zero.

[Enormous detectors](#) will measure the momenta and energies of the



## Group Members

[George Gollin](#)  
[Mike Haney](#)  
Mike Kasten  
Jason Chang  
Perry Chodash  
Michael Davidsaver  
Will Dluger  
Alex Lang (U. Wisc.)  
Yehan Liu

## Alumni

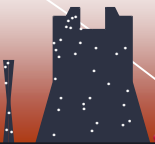
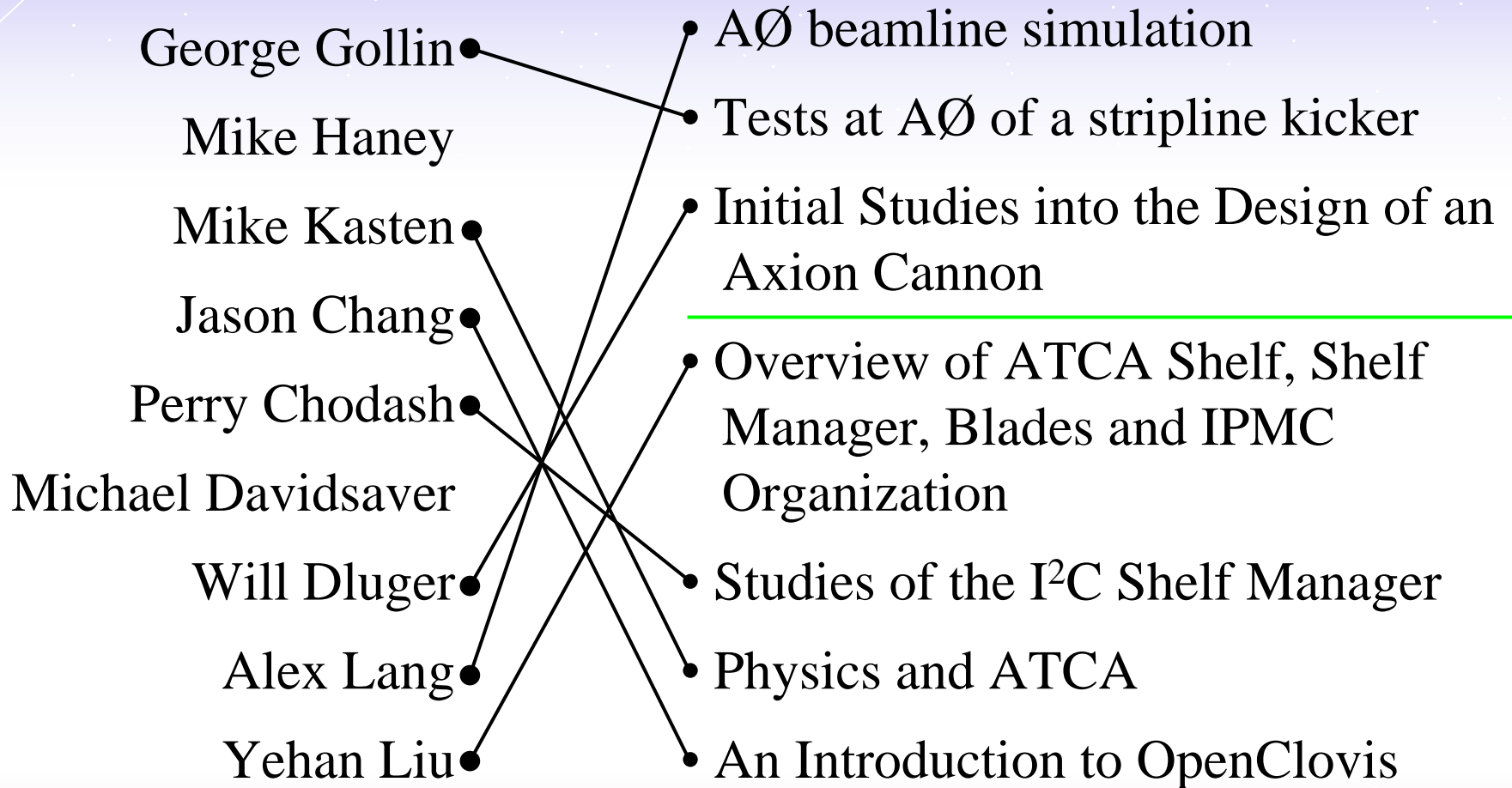
Chang Lee  
Justin Phillips  
Joe Calvey  
Erik Wright  
Ry Eli  
Guy Bressler  
Keri Dixon  
Rachel Hilmer  
Heather Smith  
Jeremy Williams

## Photo gallery

[Basic science  
advocacy and  
sociology](#)

[Presentations  
concerning physics](#)

# Roadtrip! UIUC ILC Research Group Visit to Fermi National Accelerator Laboratory and Argonne National Laboratory



# More information

George Gollin

Department of Physics

University of Illinois at Urbana-Champaign

[g-gollin@uiuc.edu](mailto:g-gollin@uiuc.edu)

+1 217 333-4451



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