



Welcome to IEB Workshop

Maxim Perelstein, Cornell University
Ithaca, June 17, 2015

Workshop Goals

Intense Electron Beams Workshop: June 17-19, 2015

6/16/15, 5:34 PM

INTENSE ELECTRON BEAMS WORKSHOP

CORNELL UNIVERSITY, JUNE 17-19, 2015



CORNELL LABORATORY FOR ACCELERATOR-BASED SCIENCES AND EDUCATION — CLASSE

Registration will close on May 31, 2015.

With the advent of high power photoinjectors and high performance superconducting RF acceleration, there is the potential for low energy electron beams with currents up to 10 times higher than those generally available today. This workshop will explore the physics opportunities that will be opened up by such beams, focusing on **parity violation**, the search for **dark matter, dark photons and axions**, and **electromagnetic nuclear physics**, as well as the accelerator, detector, target and polarimetry **technologies** that make them possible. Discussion will focus on electron beams with energies up to 500 MeV and electron current of up to 100 mA (unpolarized) and 10 mA (polarized) with energy recovery, with the goal of answering:

1. What is the potential reach of experiments using very intense low energy electron beams?
2. What technical challenges need to be overcome to reach those goals?

Working Groups

- **Parity Violation** -- co-conveners: [Kent Paschke \(U. Virginia\)](#), [Maxim Perelstein \(Cornell\)](#)
- **Dark Matter, Dark Photons, Axions** -- co-conveners: [Andrei Afanasev \(George Washington University\)](#), [Gordan Krnjaic \(Perimeter Inst.\)](#), [Bogdan Wojtsekhowski \(JLAB\)](#), [Philip Schuster \(Perimeter Inst.\)](#)
- **Electromagnetic nuclear physics** -- co-conveners: [Jan Bernauer \(MIT\)](#), [Ronald Gilman \(Rutgers\)](#)
- **Technology** -- co-conveners: [Vadim Ptitsyn \(BNL\)](#), [Joe Grames \(JLAB\)](#), [Alexander Nass \(Fz. Jülich\)](#)

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benchmark e beam parameters are here; accelerator experts on hand to answer questions

WGs Objective: produce short “white paper” reports addressing the opportunities in each area

Program Highlights

- Wednesday Morning and early afternoon: plenary session
- Wed 4 pm Lab tour (SRF and ERL): Meet at 4 pm outside this room
- Wed 6 pm Buses leave from Wilson Lab (tour endpoint) for the BBQ dinner (buses will stop at 6:10 at Hilton Garden Inn and at 6:15 at Hotel Ithaca)
- Thursday Morning: Parallel sessions, Clark Learning Center (across the atrium from this room, 2nd floor)
- Thu 1:30 pm “Short Talk Plenary” session - email me if you want to contribute a 3-5 min. talk
- Thu 3:30 pm Parallel and Plenary discussion sessions, the goal is to plan the white paper reports
- Friday morning: Working Group convener summary reports

Practical Information

- Internet: eduroam works, otherwise use “Cornell guest” and fill out a 2-line registration page.
- Food: Breakfast provided Wed, Thu, Fri; lunch provided Wed, Thu. Dinner on Thursday on your own, downtown restaurant map in the reg. folder.
- Coffee: Cafe in the PSB atrium (outside this room) open until 2 pm daily. Self-serve espresso machine in PSB 438, \$0.50/cup.