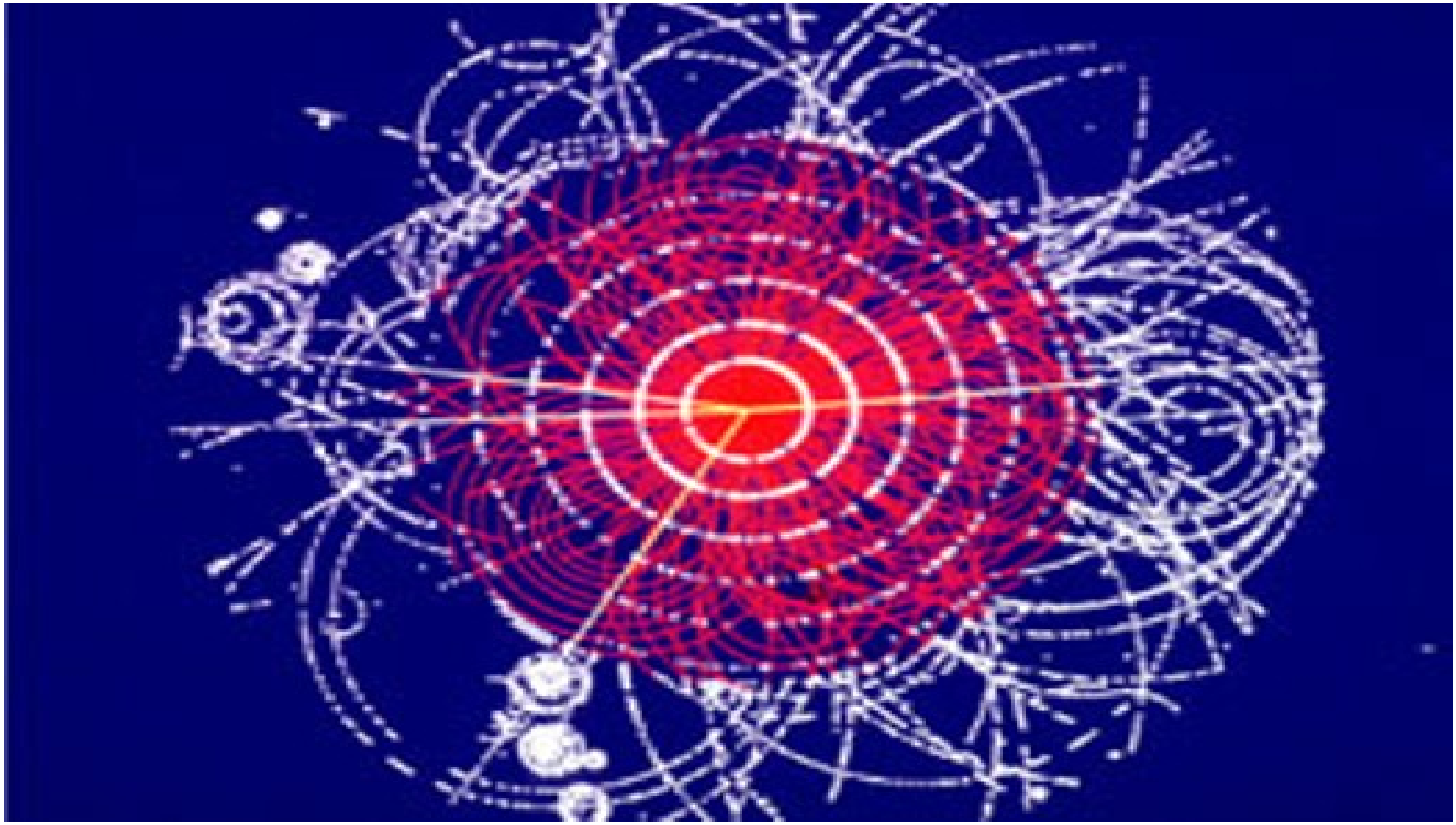
# University of Michigan-CERN REU Program



# Participant Institutions

**2008**
- Alma
- Drake
- Hampton
- Loyola (MD)
- Norfolk State
- Notre Dame
- Otterbein
- Penn State (2)
- Purdue
- Rochester
- St. Mary's (Texas)
- U Michigan
- West Point
- Yale

**2007**
- Northwestern
- MIT
- NC
- U. Washington
- Norfolk State
- Reed
- U Missouri
- Rose-Hulman
- Michigan State
- U Colorado
- Benedict College
- U Dallas
- U Rochester
- Tulane
- UMichigan

**2006**
- Brigham Young
- Cornell College
- CCNY
- Florida State
- Fort Hays State
- Michigan State
- New Mexico State
- NC State
- Norfolk State
- U Florida (Gainesville)
- U Iowa
- U Maryland
- U Oklahoma
- Stanford
- Virginia Tech

**2005**
- Amherst
- Benedict College
- Bethel (Minn)
- Brown
- Bucknell
- Cornell
- Florida Atlantic
- Hampton
- Texas Tech
- U Chicago
- U Kansas
- U Oklahoma
- U Rochester
- U Vermont
- Villanova

**The UM-CERN REU Program is a service to the US High Energy Community**

# REU Information

2001-2008

60 students

21 women, 40 men, 11 underrepresented groups

**Program: 8-9 weeks**

**Benefits**

- **$2500 stipend**
- **Per Diem: 85 Swiss Francs per CERN Day**
- **$air travel**
- **Travel Insurance**
- **Medical Insurance, Workman Comp at CERN**


Students-CERN REU-Summer 2007

Some students in this picture were working directly for ATLAS or CMS and were not supported by the REU Program. We include students, when possible in social activities.

# Program Structure-Research

- CERN runs a summer program for European physics students from Member State Countries ( ~150 students).
- 10 of our 15 students are in this program with their research assigned by CERN.  5 of our students have their research arranged by the program organizers.
- There are 3 presentations during the program. The final presentation is taped and posted on our website.

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Sample Project

Study of an evaporative cooling system for the silicon tracking detector of ATLAS. The evaporative cooling system designed for the ATLAD ID will be tested over the summer. The selected student should understand the thermodynamics of the cooling system, take part in the tests and in the analysis of them.

Sample Project

Assist in integration of forward detectors, ZDC & CASTOR into CMS experiment. Work on layout of electronics for ZDC and modification of existing CMS HF electronics to produce Technical Triggers for CMS global trigger. Assist with beam tests of ZDC and CASTOR, taking data and setting up experiment. Student could also look at test beam data if she (typo here) wished.

# Typical Day in July

- 9-12: Summer Student lecture series, discussion sections
- 1-5: Research group work
- Evenings, weekends often free for travel


- Sample Lecture Titles
- Intro to particle physics
- Intro to ROOT
- Intro to Stats
- Data Acquisition Systems
- Future Linear Colliders
- Detectors
- Antimater in the Lab
- Astro Particle Physics
- From Raw data to physics results

# Logistics

- Air Travel: Booked through a travel agent by student with fare approval by program
- Housing: Students stay in a CERN hostel on site.
- Supervision: There is an on-site coordinator in the hostel with the students.

# Teacher Component

- CERN run a 3-week summer program for High School Physics Teachers.
- In partnership with Quarknet, 5 US physics teachers participate in the program.
- The support structure for the US REU students is available to help the teachers.