Research Experience for Undergraduates

REU Program
Wayne State University
2010
NSF Sponsored program since 1996
Local Mentors

Wayne State University Physics and Astronomy Department

- **Astrophysics Group**
  - Prof. David Cinabro - Observational - SN Cosmology
  - Prof. Alexey Petrov - Theory - Darkmatter

- **Particle Physics Group**
  - Prof. Rob Harr - Experimental - CDF/CMS
  - Prof. Paul Karchn - Experimental - CDF/CMS
  - Prof. Alexey Petrov - Theory - Strong Interaction/Heavy Flavors

- **Nuclear Physics Group**
  - Prof. Rene Bellwied - Experimental - STAR/ALICE
  - Prof. Claude Pruneau - Experimental - STAR/ALICE
  - Prof. Sean Gavin - Theory - Quark/Gluon Plasma
National Lab Mentors

Fermi National Accelerator Lab (aka Fermilab)
- Astrophysics Group
  - Prof. David Cinabro - Observational - SN Cosmology
  - Dr. John Marriner - Observational - SN Cosmology
- Particle Physics Group
  - Prof. Rob Harr - Experimental - CDF/CMS
  - Prof. Paul Karchn - Experimental - CDF/CMS

SLAC National Accelerator Lab (aka SLAC)
- Astrophysics Group
  - Prof. David Cinabro - Observational - SN Cosmology
  - Dr. Rafe Schindler - Observational - Weak Lensing Cosmology
  - Dr. David Burke - Observational - Weak Lensing Cosmology
REU - Program Goals

- Educating students in modern research and in laboratory techniques
- Giving students a clearer idea of their options for a future in research
- Motivating students toward careers in Science
- Giving students who will go on in other fields exposure to scientific research
- Improving the written and oral communication skills of the students
REU Format

- Training/Preparation – Winter 2010
  - At Wayne State
  - Weekly Lectures offered by WSU Faculty
  - Preparation and Presentation of Short Talks by Students

- Research Experience – Summer 2001
  - 10 weeks at Wayne State/Fermilab/SLAC
    - Beginning 31 May and end 13 August
    - We expect this will be your full time job this summer (no classes, no other job, etc.)
Weekly Lectures

- Lectures at Wayne State
- Introduction to the Research conducted at Wayne State/Fermilab/SLAC
- One hour per week.
- Proposed Time: Friday, 4:30 PM
- Location: Room 312, Physics Bldg.
- See next page for tentative schedule
## Tentative Lecture Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Lecturer</th>
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</thead>
<tbody>
<tr>
<td>26 March</td>
<td>Introduction</td>
<td>Prof. Cinabro</td>
</tr>
<tr>
<td>2 April</td>
<td>Nuclear Physics</td>
<td>TBA</td>
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<tr>
<td>9 April</td>
<td>Particle Physics</td>
<td>TBA</td>
</tr>
<tr>
<td>16 April</td>
<td>Astrophysics</td>
<td>TBA</td>
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<tr>
<td>23 April</td>
<td>Relativity</td>
<td>TBA</td>
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<tr>
<td>30 April</td>
<td>Statistics</td>
<td>TBA</td>
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<tr>
<td>7 May</td>
<td>Detectors and Photonics</td>
<td>TBA</td>
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<tr>
<td>14 May</td>
<td>Student Presentations</td>
<td>TBA</td>
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<tr>
<td>21 May</td>
<td>Student Presentations</td>
<td>TBA</td>
</tr>
<tr>
<td>28 May</td>
<td>Student Presentations</td>
<td>TBA</td>
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What To Do Now

- Hook up with a mentor (asap)
- Already have tentative hook ups for those going to Fermilab/SLAC (see Prof. Cinabro asap):

<table>
<thead>
<tr>
<th>Name</th>
<th>Mentor</th>
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<tbody>
<tr>
<td>Kevin Greene</td>
<td>Professor Harr/Fermilab</td>
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<tr>
<td>Levente Dojcsak</td>
<td>Dr. Marriner/Fermilab</td>
</tr>
<tr>
<td>Johanna-Laina Fischer</td>
<td>Dr. Marriner/Fermilab</td>
</tr>
<tr>
<td>Brett Sandler</td>
<td>Dr. Schindler/SLAC</td>
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End Summer Goals:

- Completion of the assigned project
  - May result in Scientific publication (immediately or eventually…)

- Production of written reports
  - At least five pages
  - The reports/web pages will be posted on the Wayne REU web site at the end of the summer.