Center for Adaptive Optics
Summer Opportunities for Undergraduates

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Adaptive Optics

**VISION SCIENCE**
Correct for blur aberrations in the eyes optics

**ASTRONOMY**
Compensate for the blurring caused by aberrations in the Earth’s atmosphere

**Without AO**
Images of single cells in the living human retina
Can detect eye disease at early stages.

**With AO**

http://www.cvs.rochester.edu/williamslab/home.html
http://cfao.ucolick.org/~max/289C.old/

These applications utilize many different disciplines including math, physics, astronomy, mechanical, electrical and computer engineering.
Center for Adaptive Optics

• National Science Foundation funded “Science and Technology Center”
• 11 member institutions, 9 affiliated institutions, 11 industrial institutions
• Headquarters at UC Santa Cruz

Projects separated into four themes:

1. Education and human resources
2. AO for extremely large telescopes
3. Extreme adaptive optics
4. Compact vision science instrumentation
Undergraduate Summer Internship

- Summer program
  June 20th – August 24th 2004
- For undergraduate students from community college and 4-year institutions: sophomore thru 5th year students.
- One-week astronomy, optics, engineering, vision short course at UC Santa Cruz
- Final Presentation at UCSC Center for adaptive Optics student session
Internship Sites

Vision Science

University of Rochester
University of Houston
Indiana University

Do research on something outside of your major, use skills you know to learn new skills

For students interested in: computer science, mechanical, electrical, computer engineering, math, vision science, physics, pre-optometry, other?
Internship Sites

- UC Berkeley (astronomy)
- UCLA (astronomy)
- UCSC (engineering, computer science, astronomy)
- Iris AO (mechanical engineering)
- Jet Propulsion Lab (computer science and astronomy)
- Lawrence Livermore National Lab (engineering, computer science, astronomy)

Do research on something outside of your major, use skills you know to learn new skills
What Do I Get Out of It?

- Become a part of the Center
- Work with faculty and grad students
- Meet other students with your same interests, build a community
- Travel throughout the US
- Do research with instrumentation not available at community college.
- $2,500 stipend for eight weeks of work
- Paid housing
- Paid travel
- References, a job……..what else?
SACNAS Conference

- Be a part of the Center
- Present a poster on your research
- Gain confidence speaking about your research to professionals in your field
- Make contacts:
  - Graduate school
  - 4-year school (transfer)
  - Future employment
Am I Eligible?

- Strong interest in the sciences, particularly those associated with CfAO research
- What will you do with this experience?
- What can make you more competitive:
  - Some calculus
  - Strong letters of recommendation
How do I apply?

- Apply on line (see handout)
- Sign contact sheet and receive email reminder
- Deadline for applications **February 14, 2004**