DePaul CTI

National Science Foundation (NSF) Research Experience for Undergraduates (REU) Program

MedIX Site: Medical Informatics

DePaul University & Northwestern University

June 12th –August 18th, 2006

NSF REU MedIX Program

MedIX: Medical Informatics eXperiences in undergraduate research

Goals:

- promote the possibility of graduate studies for bright, talented undergraduates
- promote and encourage *interdisciplinary studies in Computer Science and Medical Informatics* to undergraduate students

NSF REU MedIX Program

Benefits of doing research at the undergraduate level:

- *participation as part of a team*
  - teams of two undergraduate students and one faculty mentor

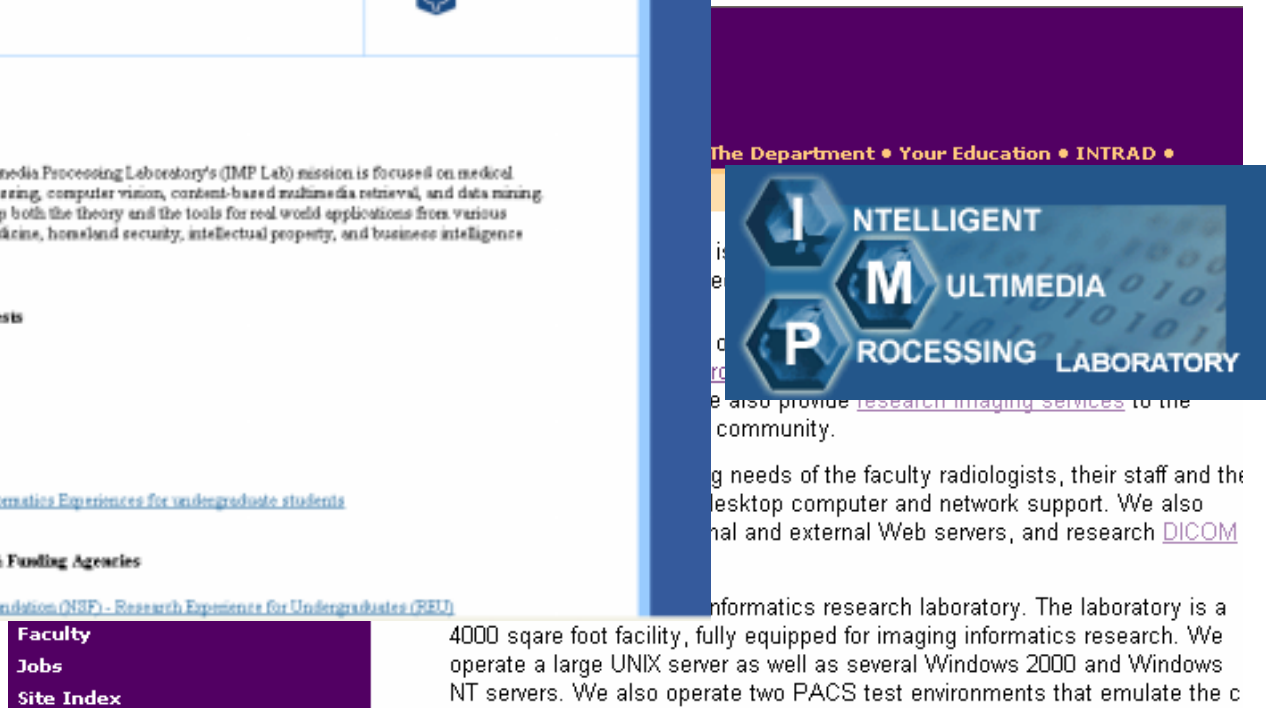
Summer 2005: REU Participants

NSF REU MedIX Program

Benefits of doing research at the undergraduate level:

- *participation as part of a team*
  - work performed in research labs:
    - CTI Intelligent Multimedia Processing (IMP) lab
    - CTI Medical Imaging (MI) lab
    - Northwestern Imaging Informatics Center

on the projects



NSF REU MedIX Program

Benefits of doing research at the undergraduate level:

- *active involvement with faculty mentors*

  - three computer science faculty mentors (two females) and one medical doctor mentor
  - weekly meetings with the mentor
  - mentor availabilities:

    Monday: Dr. Furst, Tuesday: Dr. Raicu, Wednesday: Dr. Dettori, Thursday: Dr. Channin, Friday: all mentors

NSF REU MedIX Program

Benefits of doing research at the undergraduate level:

- *participation in current and interdisciplinary research*

MedIX Projects for Summer 2006:

- *Visualization techniques for medical data*
- *Volumetric segmentation*
- *Content-based medical image retrieval systems*
- *Machine learning approaches for texture-based segmentation*
- *Automatic detection of intensity spots in micro-array images*
- *Ontology development*
- *Accelerating visualization techniques*
- *User interface development*
- *Evaluation of segmentation algorithms*
- *Texture classification algorithms testing*

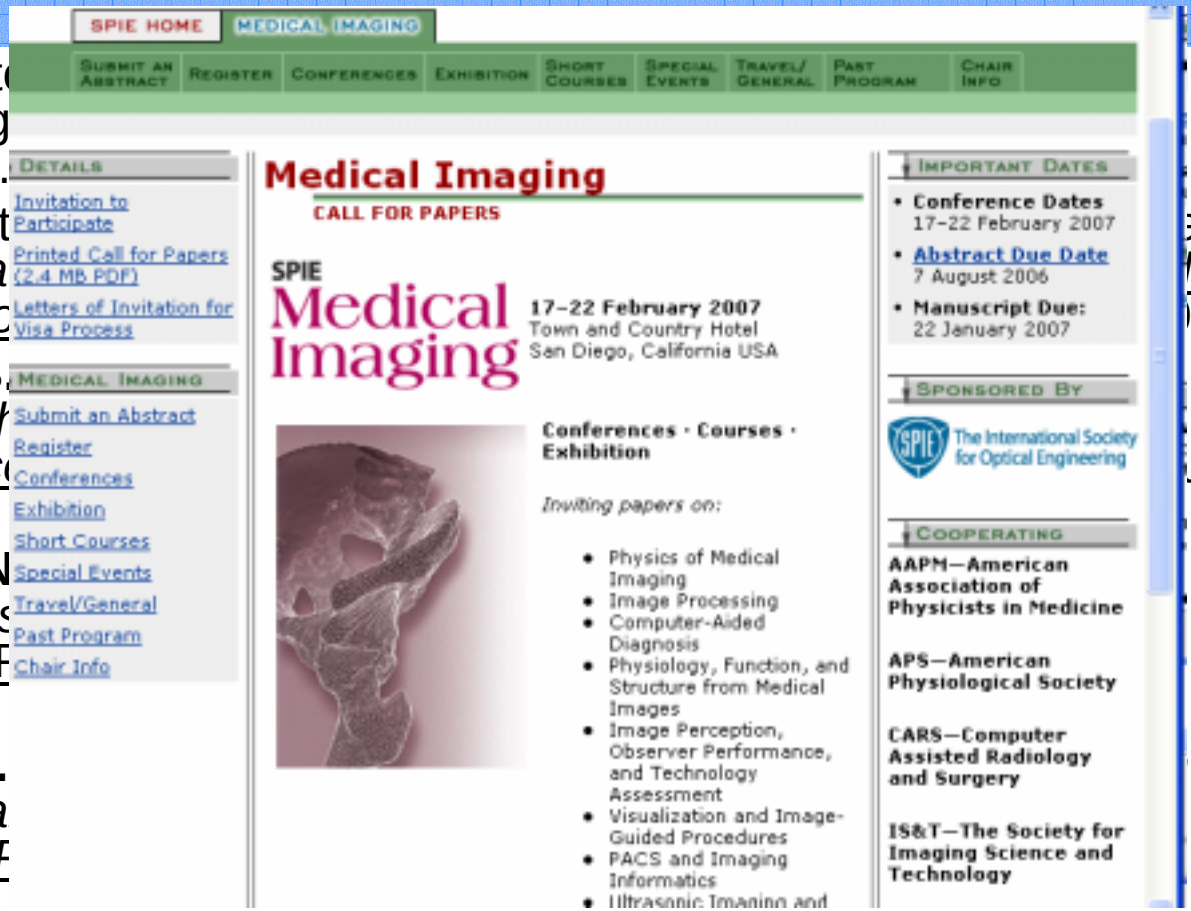
NSF REU MedIX Program

Benefits of doing research at the undergraduate level:

- *presentation, dissemination of results, rewards of publishing and attending conferences*
  - Internal presentations:
    - Presentations at the Visual Computing Seminar (each Friday)
    - Mid-Program and Final program Presentations (July 11th and August 15th)
  - External presentations:
    - Conferences in the medical imaging field
  - Research Publications
    - Conferences, journals
    - Summer 2005: 6 research papers

Research Publications

- **Semler, L**. & Dett… Computed Tomog… Atlanta, GA, USA.
- **L. Semler**, L. Dett… *Texture Classifica… Conference on Co…*
- **N.J. Backman, B.** *adaptive approach… descriptors”*, *Proc…* 2006.
- **S. Handrick, B. N** *Evaluation for Tiss…* Proceedings of SP… 2006.
- **B.W. Whitney, N.** *segmentation of a… Proceedings of SP…* 2006.
- **R. Lerman**, D.S. Raicu, J.D. Furst, *“Contrast enhancement of soft-tissues in Computed Tomography images”*, ***Proceedings of SPIE Medical Imaging Conference***, San Diego, CA, February 2006.



NSF REU MedIX Program

Benefits of doing research at the undergraduate level:

- *great source of recommendation letters for graduate school*
- *glimpse into the life of a graduate student*

Activities of the REU Program (Summer 2006):

http://facweb.cs.depaul.edu/research/vc/medix/2006/index.htm