CSRC – Industry Connection

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Motivation

SDSU benefits	Industry benefits
Expose students to "real-world" problems	*Source of well-trained new employees*
Additional source of support for students	*Access to specialized academic firepower and resources*

Resources

- Wide range of faculty from mathematics, science, and engineering spanning a variety of specialties (fluid dynamics, materials science, biophysics, bioinformatics, signal processing, chemistry, physics, astronomy, data mining, computational and numerical expertise)

- Ph.D, M.S., and (next year) B.S. students

- Computational resources (e.g. cluster, visualization)

Methodology

- Industry participation at weekly colloquium. (no cost to industry)
- Develop classes designed to meet industry needs (enhance teamwork, problem-solving, and communication skills) (no cost to industry)
- Provide access to faculty/student teams for specific problems ($)
- Develop focused consortiums with multiple faculty and associated students ($)

Examples: Colloquium

- Industry representatives deliver weekly presentations to CSRC students and faculty.
  - Share information about your business.
  - Generate interest for your projects.
  - Meet CSRC members to experience their expertise in your field and learn about SDSU resources.

Examples: Projects Class

- Problems in Computation Sciences (COMP670)
  - Intended to mimic industry environment
  - Small group of students address a specific problem and write report
  - Industry sponsor and faculty act as consultants
  - Enhance teamwork and flexibility
  - Objectives based in part on previous comments during ACSESS meetings

Examples: Projects Class

- Previous COMP670 projects
  - Time series analysis and signal detection in noise.
  - Earthquake localization.
  - Numerical modeling of sintering
  - Analysis of customers preferences (Netflix)
  - Visualization of protein molecules
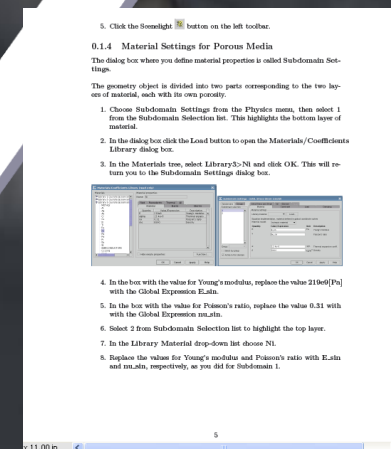 - We accept problems from industry (no charge)

Examples: Sintering

■ Tasks:
  – Solve sintering problem using finite element software

  – Write documentation

  – Presentation
    ■ (powerpoint & poster*)
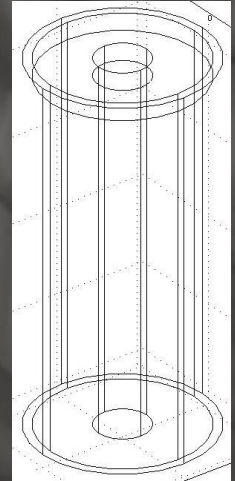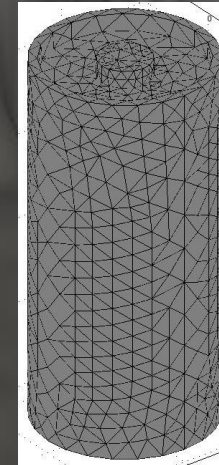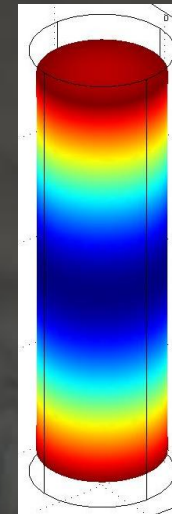
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Examples: Custom Classes

- Masters program developed in collaboration with Qualcomm.
  - Designed specifically for Qualcomm.
  - Qualcomm issues addressed in classes.
  - Qualcomm related projects.
  - Meets the needs of employees at work site.

Examples: Team Projects

- Provide support for a specific student(s) to work on a problem.
  - Includes some allocation for faculty and computer resources.
  - May form part of a student thesis
  - One summer ~ $10,000

Examples: Consortium

- Research on a given problem supported by yearly fees (for example, seismic wave imaging).
  - Gain access to latest results and codes.
  - Yearly workshop to show results.
  - Typically with a group of companies.

Conclusions

- Industry participation is essential for success.
- Participation benefits industry.
- Many participation options with considerable flexibility.
- Contact me with questions or comments

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