

Taking NADS to the Next Level

nhtsa "People Saving People"



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College of Engineering
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Topics Covered

- College of Engineering
 - Profile
 - Research and Faculty Strengths
 - Examples of Major Research Centers and Institutes
 - Linkages with Other UI Colleges
 - Health Sciences
- What's Needed to Move NADS to the Next Level
- Q/A

The University of Iowa Fast Facts

- 30,000 students from 50 states and 100 countries
- 1,700 faculty
- 210,000 living alumni
- \$2 billion operating budget
- \$350 million in grants, gifts, and contracts, mostly from outside Iowa
- 11 American Academy of Arts and Sciences inductees
- 4 Howard Hughes Medical Investigators
- 18 winners of the Pulitzer Prize
- 6 Former U.S. Poets Laureate
- 2 President's National Medal of Science recipients
- 11 alumni in the National Academy of Engineering



- 1,600 students (1,200 UG, 400 Graduate)
- Midsize among U.S. engineering colleges
- Biomedical, Chemical & Biochemical, Civil & Environmental, Electrical & Computer, Mechanical & Industrial Engineering Programs
- Close collaboration with health sciences
- Research in focused institutes and centers

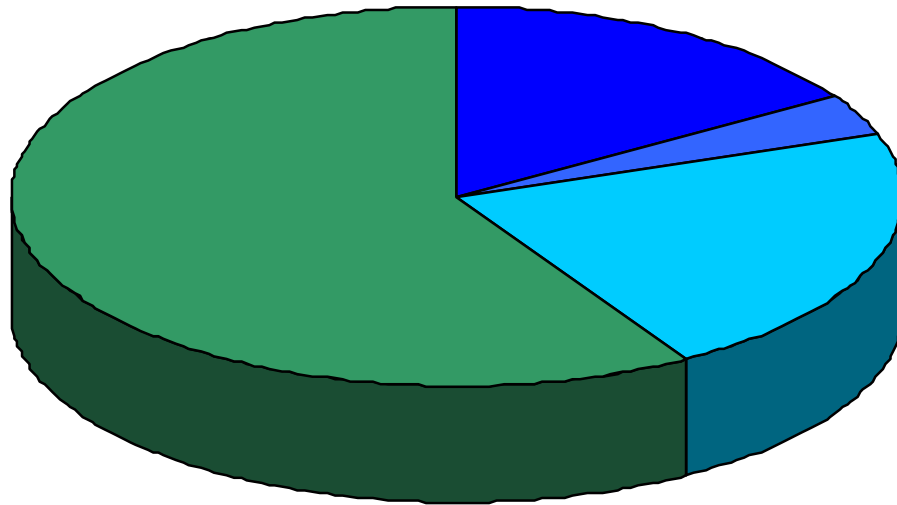


A “Typical” Faculty Member

- Mentors 5 graduate students
- Generates \$348,000 in research
- Holds 1 U.S. patent
- Provides campus-wide interdisciplinary leadership
- Serves as editor or on editorial board of major journal
- 20% are fellows of societies
- 15% hold special professorships
- 15% have received prestigious NSF PECASE and CAREER awards



Budget Summary FY06 - \$43 Million



- General Education Fund-Tuition & Fees
- General Education Fund-Indirect Cost
- General Education Fund-State Appropriation
- External Gifts, Grants, Contracts

Diverse Graduate Student Population

- Help drive ethnic diversity in engineering disciplines
- Provide welcoming and inclusive environment that drives excellence in engineering
- Promote cultural awareness and sensitivity among all engineers
- Educating tomorrow's workforce

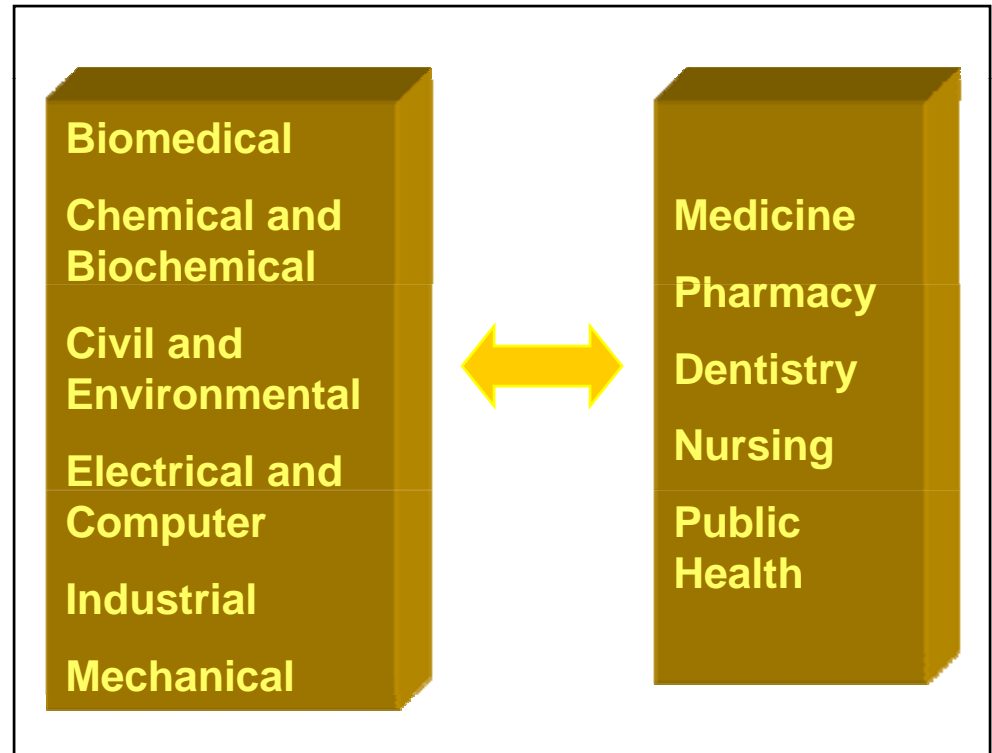


Selected Areas of Research Excellence

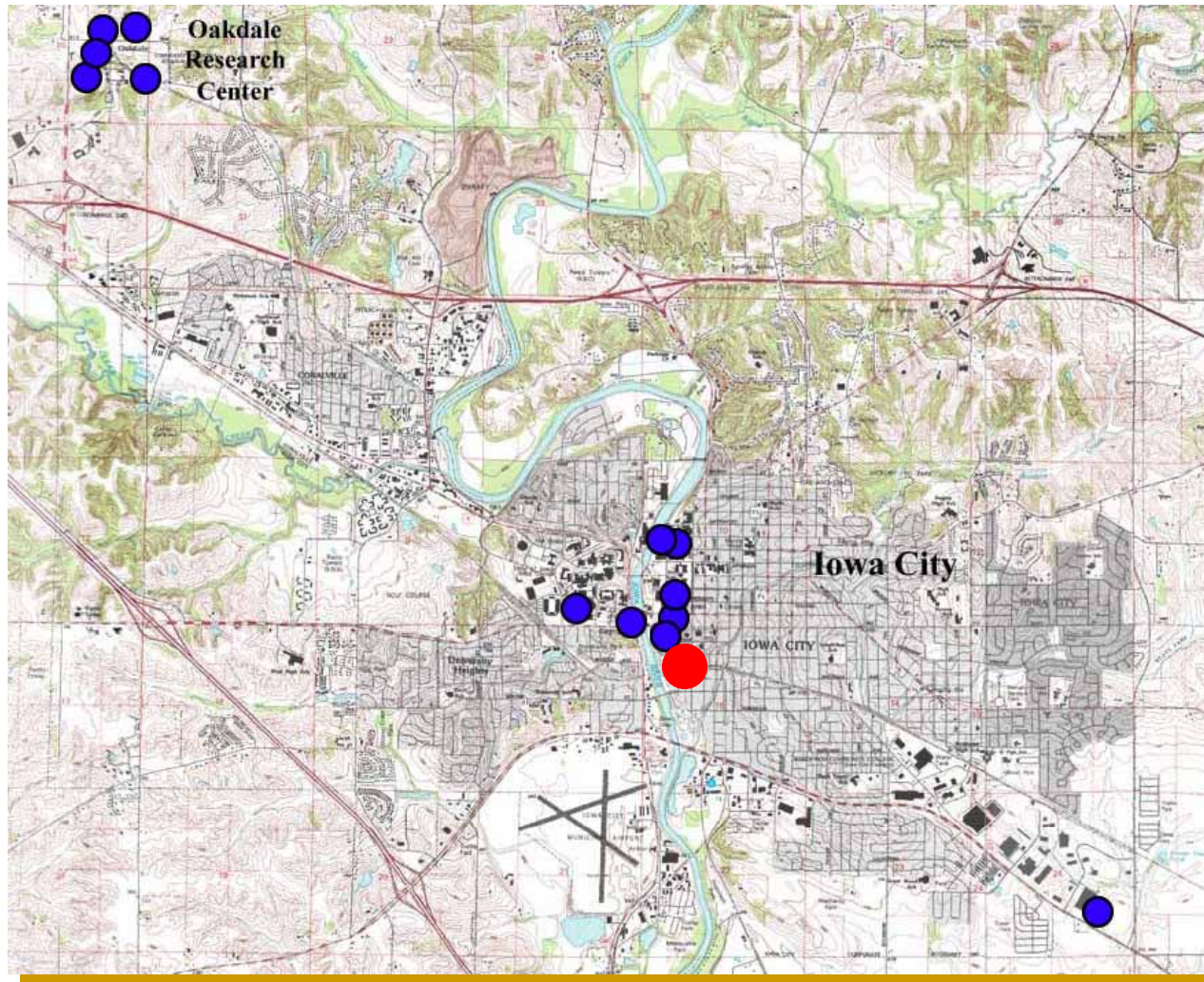
- Computer-aided design and simulation
- Real-time simulation and dynamics
- Human factors and operator performance
- Environmental health solutions
- Biotechnology
- Medical imaging
- Hydraulics and water/air resources
- Photopolymerization

Linkage with Health Sciences

- *All six* programs have close teaching and research ties with *all five* Health Sciences colleges on one campus

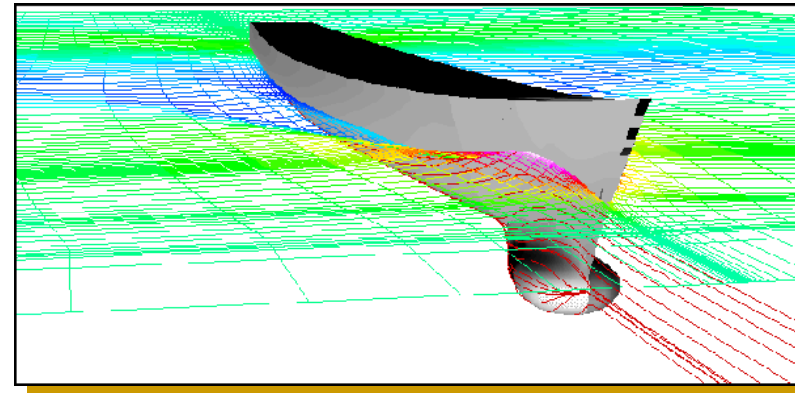


College Maintains 15 Research Facilities



IIHR – Hydrosience and Engineering

- World's premier academic-based fluids research laboratories
- Very good example for proper balance of:
 - Government and industry projects
 - Short versus long-term projects
 - Faculty, staff and student research



Taking NADS to the Next Level

- Internal review
 - Logical time to assess future
 - Chen's departure
 - Facility attained operational status
 - Provide VPR advice on advancing NADS
 - Grow faculty involvement (UI and external)
 - Promote graduate student research
 - Grow involvement of other Colleges
 - Increase NADS hours

Taking NADS to the Next Level

- Options evaluated
 - Report to College of Medicine
 - Report to College of Engineering
 - Joint College reporting structure

Center for Computer Aided Design (CCAD)

Programs:

- Digital human simulation
- Operator performance
- Reliability and sensory prognostic systems
- Cognitive systems

➤ Significant DoD research

➤ Significant transportation research

**History in successful
commercialization of technology**



Dr. Karim Malek

Director, Center for Computer Aided Design

Professor, Biomedical Engineering

Professor, Mechanical & Industrial Engineering



Expertise:

Simulation, dynamics, human modeling, and virtual reality

- **Founder and Director, US Army Virtual Soldier Research Program**
- **Manages multi-million dollar research projects**
- **Established strategic partnerships with industry and government partners**
- **Has significant industrial experience**
- **Authored 120 peer reviewed articles and 2 US Patents**

Relevant others: Received best paper award 3 times, chaired SAE conference on human simulation, serves on national and international committees for simulation.

What's Needed to Take NADS to the Next Level

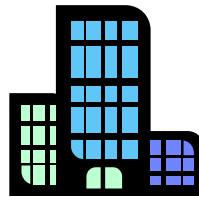
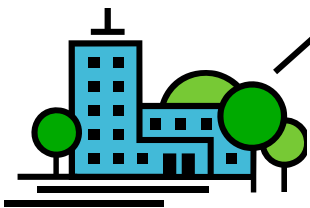
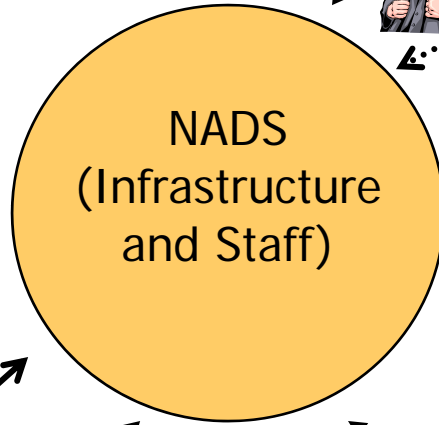
UI Central Administration

Other UI Units

- Neurology
- Ophthalmology
- Comp. Science
- Pharmacy
- Injury Prevention
- Public Policy Ctr

College of Engineering

- Faculty
- Students



Contracts and Grants

Federal/State
Agencies

In Summary, the College of Engineering...

- will continue to support the NADS mission
 - “To support NHTSA’s goals of saving people, to carry out research aimed at increasing transportation safety and reducing accidents.”
- will increase participation from faculty, staff and graduate students at UI and external organizations
- is committed to making NADS a world-class organization
- will make NADS fiscally responsible