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FOR
ACADEMIC AFFAIRS COMMITTEE

R. Steven Hicks, Chairman
Ernest Aliseda
Alex M. Cranberg
Brenda Pejovich
Robert L. Stillwell

Committee Meeting: 2/5/2014

Board Meeting: 2/6/2014
Austin, Texas

1. U. T. System Board of Regents: Discussion and appropriate action regarding Consent Agenda items, if any, referred for Committee consideration

RECOMMENDATION

The proposed Consent Agenda is located at the back of the book.

2. U. T. System: Authorization of $14 million of Permanent University Funds a) for a new Shared Services Initiative to create and implement a Student Information System (SIS) at U. T. Rio Grande Valley; b) to implement a SIS as a second business unit at U. T. Permian Basin; c) to expand the UTShare Human Resource and Finance enterprise system to include and support U. T. Rio Grande Valley; and d) to provide basic campus and implementation support to U. T. Rio Grande Valley and U. T. Permian Basin

RECOMMENDATION

The Chancellor concurs in the recommendation of the Executive Vice Chancellor for Academic Affairs and the Executive Vice Chancellor for Business Affairs that the U. T. System Board of Regents authorize $14 million of Permanent University Funds (PUF):

a. for a new Shared Services Initiative to create and implement a Student Information System (SIS) at U. T. Rio Grande Valley, including implementation services, hardware/software, support, initial hosting, and disaster recovery;

b. to implement a SIS as a second business unit at U. T. Permian Basin;

c. to expand the UTShare Human Resource and Finance enterprise system to include and support U. T. Rio Grande Valley; and

d. to provide basic campus and implementation support to U. T. Rio Grande Valley and U. T. Permian Basin.

BACKGROUND INFORMATION

In creating U. T. Rio Grande Valley, updated technology is needed to achieve the goals for the new university. It is essential that a software and hosting solution be implemented to support the processing of student information and associated monies. This additional Shared Services Initiative project is consistent with the Framework for Advancing Excellence throughout the U. T. System.

To implement the SIS, U. T. System will leverage the Oracle Corporation site license approved by the Board on May 15, 2008, that makes available the higher education line of Oracle/PeopleSoft products (Human Resources, Financial, and Student Information Systems) for all U. T. System institutions. SIS is essential software for academic institutions to provide campus self-service, financial aid, recruiting and admissions, student administration, student financials, and student records. Additionally, U. T. System will rely on experience gained from the North Texas Student Information System Pilot Project implementation approved by the Board on August 23, 2007.

U. T. Permian Basin's existing SIS is no longer supportable and the campus will realize savings through a co-implementation with U. T. Rio Grande Valley instead of through a stand-alone implementation.

3. U. T. System Board of Regents: Approval to create the University College at U. T. Tyler and amendment of Regents' *Rules and Regulations*, Rule 40601, Section 1.12 to add Subsection (g) to include the University College

RECOMMENDATION

The Chancellor concurs in the recommendation of the Executive Vice Chancellor for Academic Affairs, the Interim Vice Chancellor and General Counsel, and President Mabry that approval be granted for U. T. Tyler to create a University College and that the Regents' *Rules and Regulations*, Rule 40601, Section 1.12, concerning institutions comprising The University of Texas System, be amended to include the University College as set forth below in congressional style:

Sec. 1 Official Titles. The U. T. System is composed of the institutions and entities set forth below. To ensure uniformity and consistence of usage throughout the U. T. System, the institutions and their respective entities shall be listed in the following order and the following titles (short form of title follows) shall be used:

. . .

1.12 The University of Texas at Tyler (U. T. Tyler)

(a) The University of Texas at Tyler College of Arts and Sciences

(b) The University of Texas at Tyler College of Business and Technology

(c) The University of Texas at Tyler College of Education and Psychology

(d) The University of Texas at Tyler College of Engineering and Computer Science

(e) The University of Texas at Tyler College of Nursing and Health Sciences

(f) The University of Texas at Tyler Ben and Maytee Fisch College of Pharmacy

(g) The University of Texas at Tyler University College

BACKGROUND INFORMATION

This proposed amendment to the Regents' *Rules and Regulations*, Rule 40601 is to reflect the creation of the U. T. Tyler University College, which has been approved by the Executive Vice Chancellor for Academic Affairs pending approval by the Board.

U. T. Tyler proposes to create the University College, which would consist of a Department of Academic Success, Department of Educational Technology Services, and the Office of Instructional Design. The College would also offer a Bachelor of Applied Arts and Sciences (BAAS) academic degree, which is currently offered in the College of Business

and Technology. Options in the BAAS degree would be expanded to include courses offered by other academic colleges, and the academic deans would participate in the program planning. Furthermore, the University College would be responsible for the coordination of the online, hybrid, and technology-enriched programs and courses at U. T. Tyler.

Texas Education Code Section 65.11 authorizes the Board of Regents to provide for the "administration, organization, and names of the institutions and entities in The University of Texas System in such a way as will achieve the maximum operating efficiency of such institutions and entities[.]"

4. U. T. Tyler: Update on the Patriots Applying Technology for Success and Savings (PATSS)

REPORT

President Mabry, U. T. Tyler, will present a report on the Patriots Applying Technology for Success and Savings (PATSS) program. President Mabry's presentation is set forth on the following pages.

Dr. Rodney H. Mabry

President

U. T. System Board of Regents' Meeting

Academic Affairs Committee

February 2014

The University of Texas at Tyler

What is PATSS?

- Project to transform teaching across campus
- HyFlex courses
  - 50/50 blend of face-to-face and online learning
  - Emphasis on project-based learning (PBL)
- Outcomes
  - Increased learning
  - Reduced costs
  - Increased student satisfaction

PATSS: Increased Learning

- Increased learning
  - In class, more student engagement with PBL
  - Out of class, more time on task with study flexibility
- Increased retention

PATSS: Increased Satisfaction

- Increased satisfaction with
  - Course material and methods
  - More flexible academic schedules
  - More flexible work schedules
  - Greater availability of faculty (online and in office)

PATSS: Reduced Costs

- For students
  - Reduced time to degree
  - Ability to work more with more flexible schedules
  - Commuters save fuel and time
- For university and state
  - Shorter time to degree
  - More degrees from more successful course completion and increased enrollment
  - Fewer buildings

Video

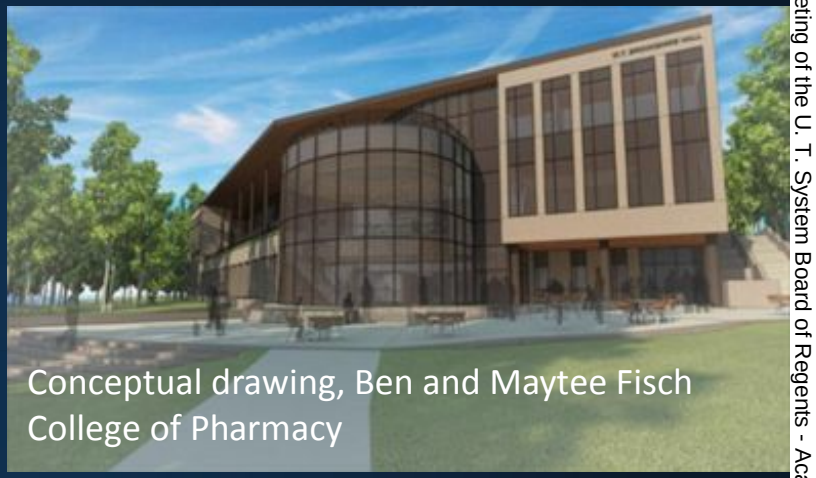
Why U. T. Tyler?

Size - Just Right

- 7,524 Enrollment
- Students from 45 states and 35 nations
- Two satellite campuses in Longview and Palestine

Six Colleges

- Arts & Sciences
- Business & Technology
- Education & Psychology
- Engineering & Computer Science
- Nursing & Health Sciences
- Ben and Maytee Fisch College of Pharmacy - Coming Fall 2015



Conceptual drawing, Ben and Maytee Fisch College of Pharmacy

We’re All About Innovation

Our Vision

To be the premier public university in Texas focusing on undergraduate students who want a more innovative, personal educational experience in a park-like campus setting.

We Are All About Excellence

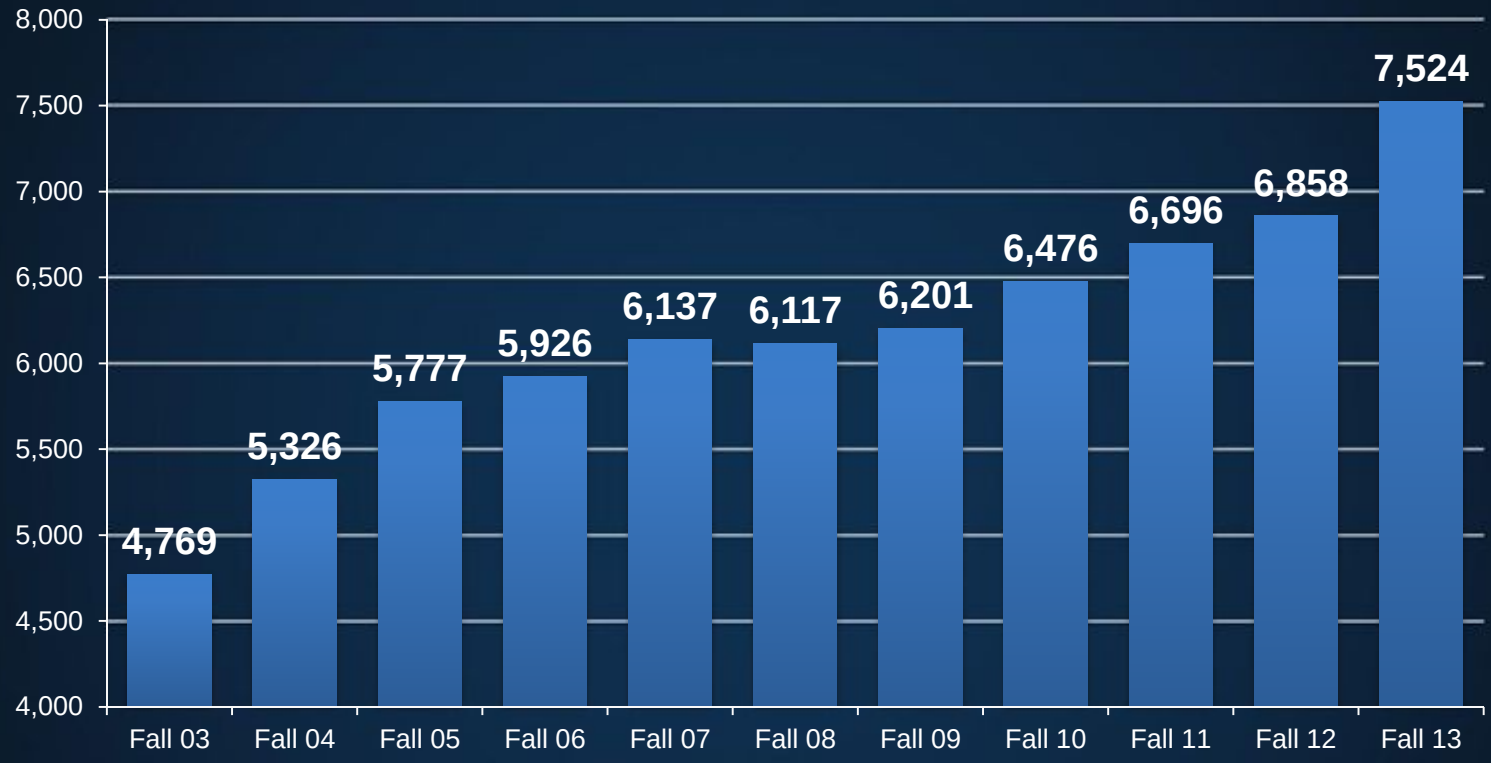
- Ranked 22nd among public, master's level universities in the West, 2013
- Ranked 1st in reputation among ranked Texas public master's universities by peers
- Lowest student-to-faculty ratio among ranked Texas institutions

Measurable Excellence

- State licensure pass rate for nursing: 95%
- Teacher certification pass rate: 94%
- Electrical engineering pass rate, FE Exam: 100%

- One of the best universities in Texas for personal attention
  - The College Database
- One of the best “high return on investment” universities in Texas
  - Affordable Colleges Online
- One of the best universities in the U.S. for veterans’ services.
  - Military Times

Strong Growth 2003-2013



The University of Texas at Tyler

Top Majors for U. T. Tyler

1. Nursing
2. Business
3. Health and Kinesiology
4. Biology
5. Mechanical Engineering
6. Psychology
7. Teaching
8. Civil Engineering
9. Health Sciences
10. Electrical Engineering
11. Computer Science & Computer Information Systems

The University of Texas at Tyler

Academic Excellence

- Chemistry seniors scored in top 4% nationally on the College Board major field test
- Criminal justice seniors scored in the top 5% nationally on the College Board major field test

The Perfect Environment for PATSS

- Small class size
- History of building innovative learning environments
- Faculty willing to implement new teaching model, techniques

Investment

- PATSS is an $8 million project (over 5 years)
  - $4 million in Permanent University Funds (PUF) and $4 million local match
- Expenditures to date include
  - $231,000 in infrastructure improvements, including a classroom designed for flexible learning and lecture capture

Investment (cont.)

- $165,000 for software module designed to give students preparation for and support during HyFlex learning
- $144,000 in faculty training and course development

2013-14 Pilot Year

- 1,676 students
- 49 sections
- 31 separate courses
- 25 faculty members trained and participating

Early PATSS Results

- Students support increased flexibility
- Students report increased engagement
- Early academic reports are favorable
- Faculty willing to increase available courses
- Facility use effects beginning with nine “matched” classes in Spring 2014

Student Survey Responses

- **I can control the pace of my own learning**
  - 78% of students surveyed responded “Agree” or “Strongly Agree.”
- **The course was well organized**
  - 71.1% responded “Agree” or “Strongly Agree.”
- **I can organize my time better**
  - 70% of students surveyed responded “Agree” or “Strongly Agree.”

Video

Student Survey Comments

"I feel that it is much more organized…Time spent in class is more efficient and effective, and we are able to do engaging activities."

"Online lectures are nicely prepared and easy to understand."

"I love being able to do the homework on my own time."

"I learned so much more than I would in a straight-up lecture course or online course."

5. U. T. System: Request to retain low-producing degree programs at U. T. San Antonio

RECOMMENDATION

The Chancellor concurs in the recommendation of the Executive Vice Chancellor for Academic Affairs that the following low-producing degree programs be retained at U. T. San Antonio:

Ph.D. in Business Administration - Accounting
Ph.D. in Business Administration - Finance
Ph.D. in Business Administration - Management and Organizational Studies
Ph.D. in Business Administration - Marketing
Ph.D. in Business Administration - Information Technology

BACKGROUND INFORMATION

Senate Bill 215, passed into law by the 83rd Texas Legislature, removed the Texas Higher Education Coordinating Board's (Coordinating Board) authority to close or consolidate degree programs. The Coordinating Board is only permitted to make recommendations, and Senate Bill 215 gave explicit authority over the closure or consolidation of programs to the governing boards of Texas public institutions of higher education.

In Fall 2013, the U. T. System Offices of Academic Affairs and Health Affairs collaborated on a review process for programs identified as low-producing and recommended by the Coordinating Board for closure or consolidation. The U. T. System review process for low-producing programs includes a recommended process that an institution may follow to proactively address low productivity well before a program is recommended for closure. It also documents the U. T. System-level review once a program is recommended for closure, which includes a thorough review of the quantitative data related to a degree program. Additionally, if an institution wishes to retain a low-producing program, it is allowed to present other relevant information such as indicators of the high quality of the program, regional access, and other considerations as appropriate.

In November 2013, the Coordinating Board staff issued a recommendation on low-producing programs at one U. T. System academic institution. The Coordinating Board staff recommended that five Ph.D. programs in Business Administration offered at U. T. San Antonio, some of which had not met the State threshold for the number of degrees conferred for a doctoral program, be consolidated into one Ph.D. in Business Administration.

The Coordinating Board standard for doctoral programs is 10 graduates over a five-year period. From FY 2008 - 2012, Accounting produced nine graduates, Finance produced 12 graduates, Management and Organizational Studies produced seven graduates, Marketing produced two graduates, and Information Technology produced nine graduates, totaling 39 graduates during the five-year period. Consolidating the five business administration Ph.D. programs into one would not, however, result in any cost savings to the University. The programs were originally designed to be efficient; all students take a common set of doctoral-level courses in research

methods, statistics, and economics. In addition to this common set of courses, students take additional courses in their major area of emphasis. Nothing about the curricular structure would change if the degree programs were consolidated.

Following Board action, the Office of Academic Affairs will respond to the Coordinating Board by the required March 1, 2014 deadline.

6. U. T. System: Quarterly report on academic matters of interest to the U. T. System, including a discussion on research in computational sciences

REPORT

Executive Vice Chancellor Reyes will report on academic matters of interest to the U. T. System and then introduce Dr. J. Tinsley Oden, Associate Vice President for Research and Director of the Institute for Computational Engineering and Science at U. T. Austin, to discuss research in computational sciences. Dr. Oden's presentation is set forth on the following pages.

The University of Texas' Role in the Computational Revolution in Medicine, Engineering, and Science

J. Tinsley Oden,
Associate Vice President for Research, Director of the Institute for Computational Engineering and Science, U. T. Austin

U. T. System Board of Regents' Meeting

Academic Affairs Committee

February 2014

The University of Texas System
Nine Universities. Six Health Institutions. Unlimited Possibilities.
www.utsystem.edu

The Foundations of Science and Engineering: Basic Definitions and Questions

Definitions and Questions:

- What is Science?
- What is Medicine?
- What is Engineering?

Science: The activity concerned with the systematic acquisition of knowledge (the enterprise that builds and organizes knowledge in the form of testable explanations and predictions about the universe).

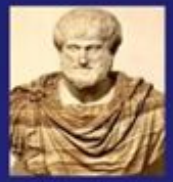
Medicine: The field of applied science, devoted to healing by diagnosis, treatment, and prevention of disease.

Engineering: The activity of applying scientific knowledge and practical knowledge for the benefit or needs of mankind.

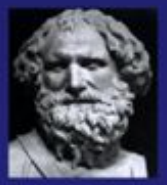
An Ancient Question and Debate

The historic debate in the philosophy of science on how knowledge is acquired

Socrates
469-399 BC
recollection-devine insight



Aristotle
384-322 BC
reasoning demonstration



Archimedes
287-212 BC
mechanics - applications

Sir Francis Bacon
1561-1626
learn by organized observations

. . .
Newton,
Leibniz
. . .

David Hume
1711-1776
Skepticism - induction does not lead to knowledge

. . .
Maxwell,
Einstein,
Bohr, Darwin,
Mendel
. . .

Sir Karl Popper
1902-1994
Principle of Falsification

Sir Arthur Eddington
1882-1944
Not accept experimental results

Edwin T. Jaynes
1922-1998
All scientific knowledge has been obtained by induction

The Classical Pillars of Science

I. OBSERVATION - Experimental Science (The use of human senses aided by instruments to observe natural events.)

II. THEORY - Induction, the use of hypotheses about causes of events (of physical events) to infer general principles from specific facts

An inductive argument is *probable*, based on evidence. A deductive argument is supposed to be *certain*.

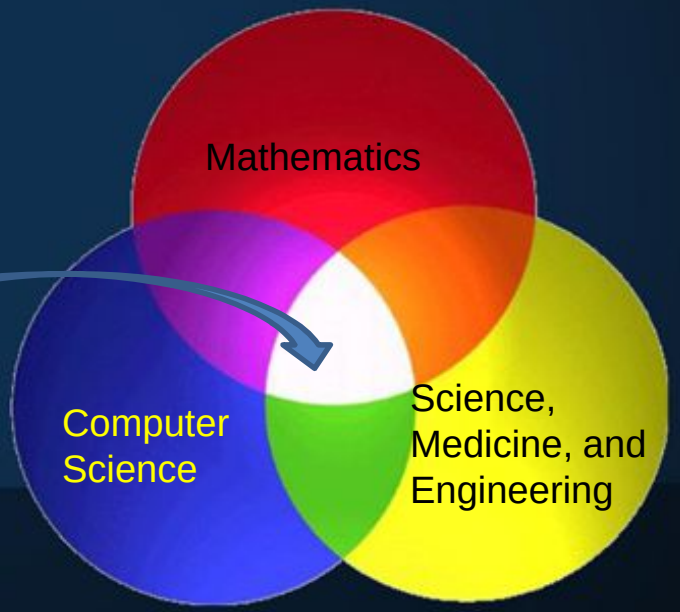
The Scientific Method (Oxford Dictionary)
"A method or procedure that has characterized natural science since the 17th century consisting of systematic observations, measurement, and experiment (# I) and the formulation, testing, and modification of hypotheses (# II)"

Is There a Third Pillar?

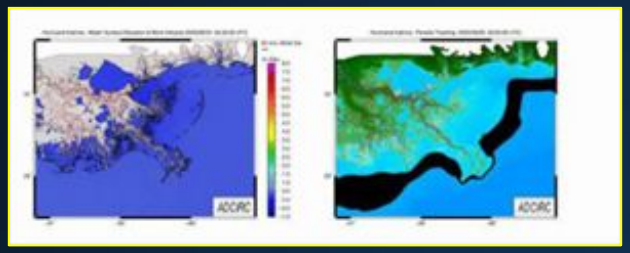
Computational Science: the discipline concerned with the use of computational methods and devices to enable scientific discovery, medical and engineering applications of science

The Common Ground in Computational Science: The translation of data and hypotheses into a language that can be processed by computers.

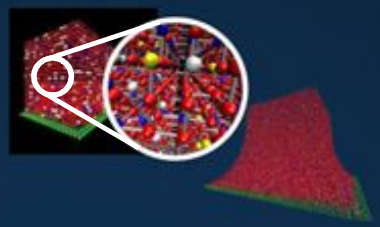
Computational Science



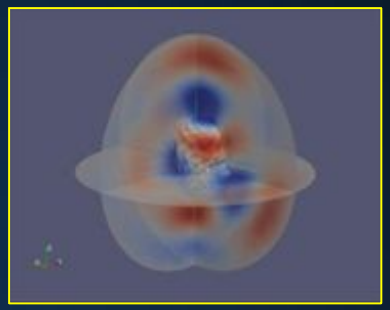
Research at ICES



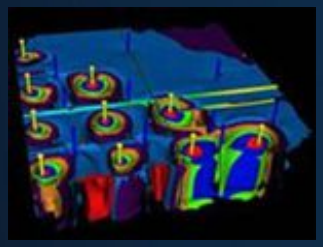
Oil Spills



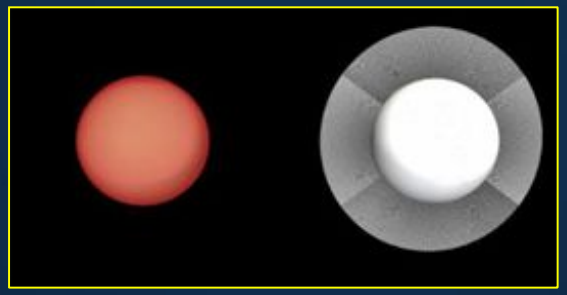
Polymerization



Communications Devices



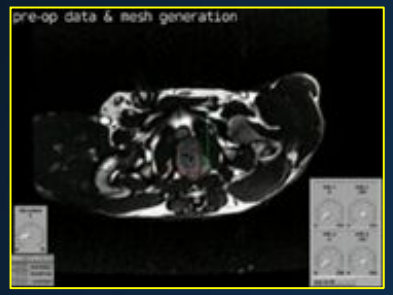
Subsurface Modeling



Mantle Convection

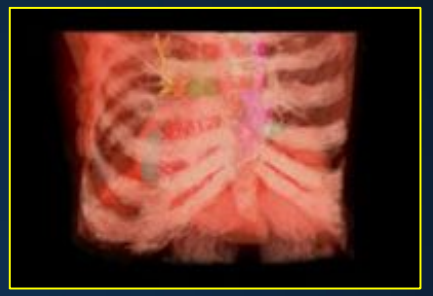
Earthquakes

Research at ICES (cont.)

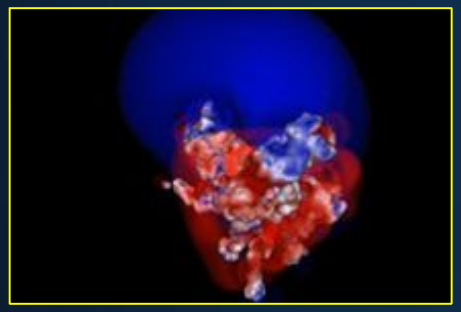


Laser Treatment
of Cancer

DNA Synthesis

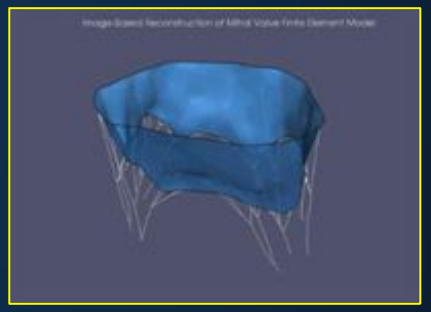


Visualization & Image
Processing



Drug Design

Aneurysm Blood Flow



Cardiovascular Modeling

Concluding Comments

Computational Science is regarded as the most important development in the 400,000 years of human existence. It will change forever the way science is done and have a profound impact on higher education worldwide.