

# DEPARTMENT OF PHYSICS

*“Charting a New Course for the New Millennium:  
Enhancing Rigor, Relevance and Relationships”*

# WHAT I INTEND TO DO TODAY

- Mention our accomplishments
- Give a hand to ourselves for several accomplishments over the past five years
- Discuss briefly a SWOT (Strengths, Weaknesses, Opportunities, Threats) Analysis
- Share with you my knowledge of what the external environment is like
- Share with you what we need to do to do better over the next five years
- Ask for your input
- Specify immediate and medium term action items
- Leave you with a few thoughts

# SWOT ANALYSIS

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graph TD; A[SWOT ANALYSIS] --> B[Strengths]; A --> C[Weaknesses]; A --> D[Opportunities]; A --> E[Threats];
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Strengths

Weaknesses

Opportunities

Threats

# STRENGTHS

- Qualified and highly credentialed faculty and staff
- Good diversity in ages (oops, I mean experiences)
- New faculty active in research, publications and grants
- State-of-the-art laboratories and facilities
- Sustainable funding for the undergraduate laboratories (Equipment Access Fee - more enrollment, more \$\$\$s - nice formula!)
- Every student (except Nursing) has to take at least one course from Physics
- Increased enrollments in PHSC courses

# OPPORTUNITIES


- Increased awareness for physics as an integral part of future education
- Contracting opportunities
- More funding for multi- and inter-disciplinary projects
- Increased support for Science and Mathematics education
- Students can motivate towards higher education

# THREATS

- Low to zero enrollment, attrition
- Department/Discipline mergers - Department of Physics and Chemistry or Department of Physical Science(s) or Department of Natural Sciences ...
- Physics departments closing down or being reduced all over (except in China, India, Japan, Korea, ...)
- Little interest on part of most faculty in science education
- Decreased funding in areas of interest to us



## **WE NEED TO KNOW WHAT THE EXTERNAL WORLD IS THINKING OF US**

- Institutions of higher education commonly exhibit a dangerous conceit.
  - They behave as if they are convinced that they are in charge of their destiny even when they refuse to take charge of their evolution.
  - They very often act like canoeists on a white water river who
  - believe that if they decline to paddle, their canoe will not move.
  - The fact is, it will move, and rapidly, whether they paddle or not.
  - Their survival among the rocks in the white water educational river may depend on their recognizing that fact!
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# Physics Department's Response & Strategic Plan for *Moving Forward*

- Curriculum reform planning for undergraduate programs to reflect interdisciplinary themes, in particular, relevant to pre-service teachers.
- Cross-departmental teaming in research and education type proposal writing.
- Distinguished lecture series with interdisciplinary themes: inter-departmental participation and organization.
- New faculty hiring plans and projections to reflect interdisciplinary themes.



# QUESTIONS TO ASK

What are the revenue raising improvements for growth necessary for success going into the next century?

What innovation capability could I develop that would catapult me far ahead of the competition?

What innovation capability could our university develop that would catapult it far ahead of the competition?

# FORMS OF ACQUISITION

**Grants &  
Contracts**

**Research  
Centers**

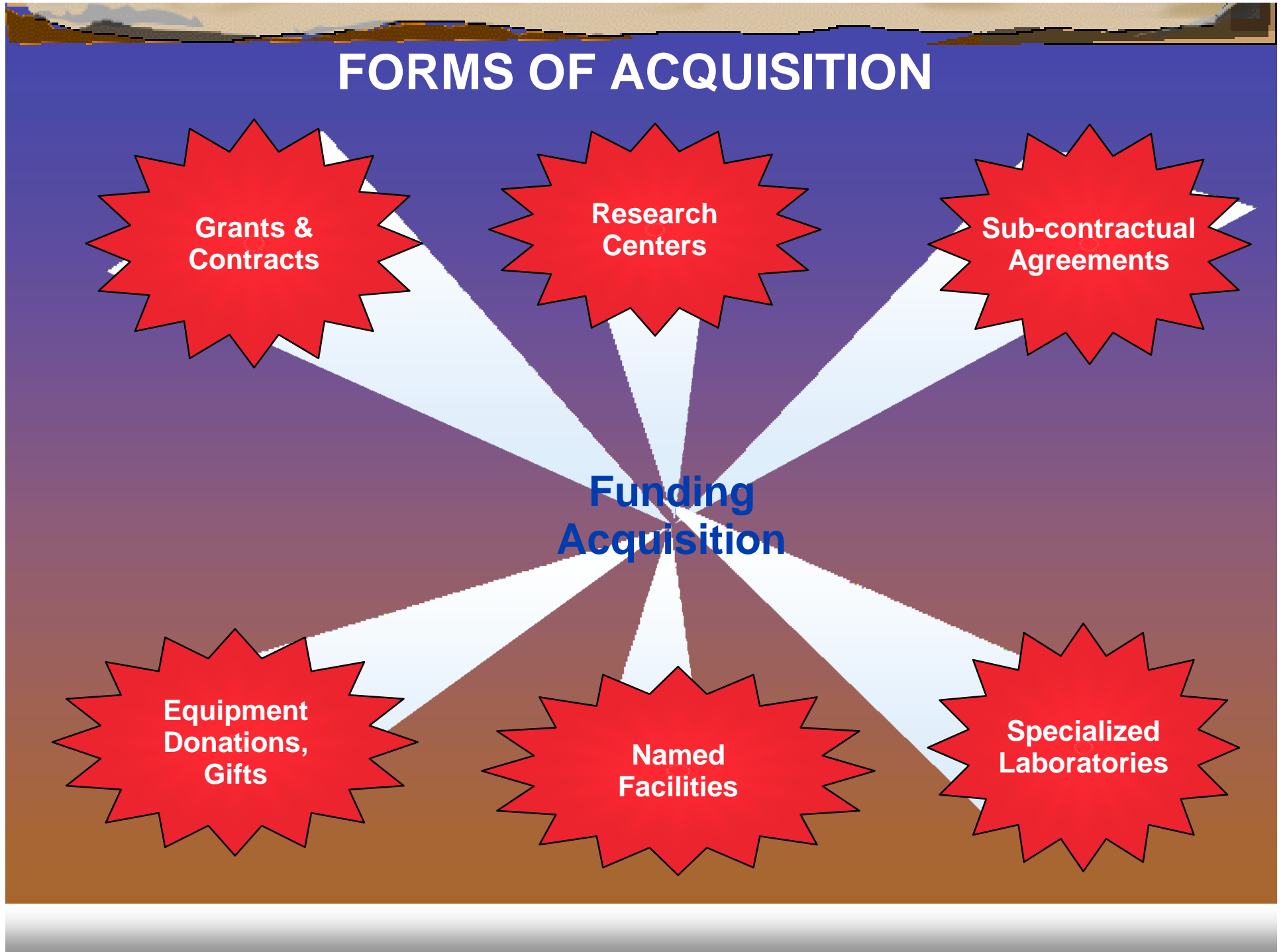
**Sub-contractual  
Agreements**

**Funding  
Acquisition**

**Equipment  
Donations,  
Gifts**

**Named  
Facilities**

**Specialized  
Laboratories**



# Strategies for Student Recruitment and Retention

- Irreproachable customer service
- Cultivate close contacts with schools - visits, student projects, teacher professional development
- Well-defined plan for reaching out to middle and high schools
- Aggressive plans to expand the undergraduate research assistantship, scholarship and stipend bases
- Interdisciplinary undergraduate curriculum
- Seminars in other departments and schools on the relevance of physics to one's life

# PROJECTED INTERDISCIPLINARY AREAS OF GROWTH

**Building on Existing Departmental Strengths  
And  
Developing Capabilities in Areas of Need**

Biophysics

Environmental Science

Medical Physics

Nuclear and Radiation Physics

Radiation Physics/Science

Science Education

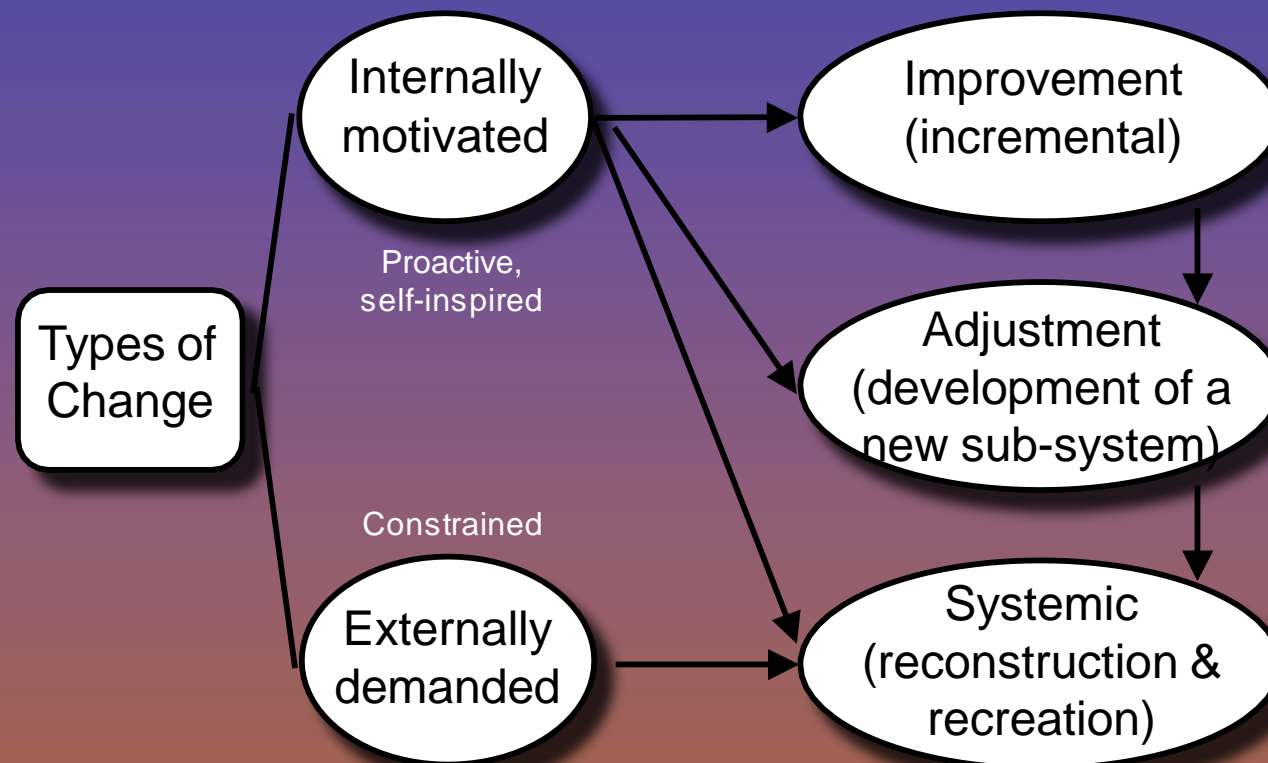
Applied Physics

Forensic Science

Engineering Physics

???

# TYPES OF CHANGE



*"There isn't a plant or a business on earth that couldn't stand a few improvements. Someone is going to think of them. Why not beat the other fellow to it?" - Roger Babson*

Thank You.

I look forward to continuing to  
work with you.

Any questions?

