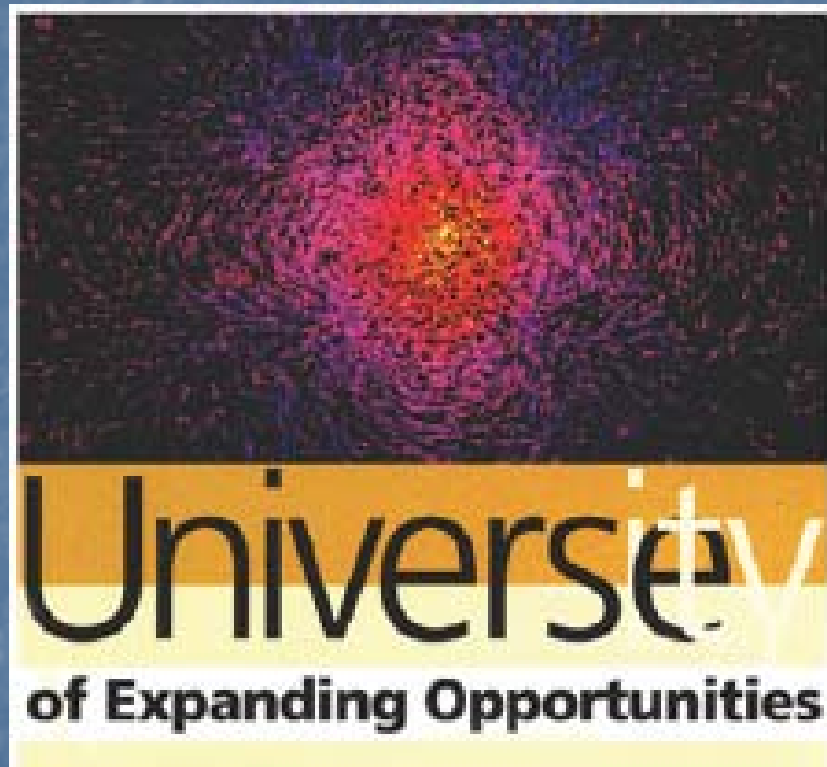


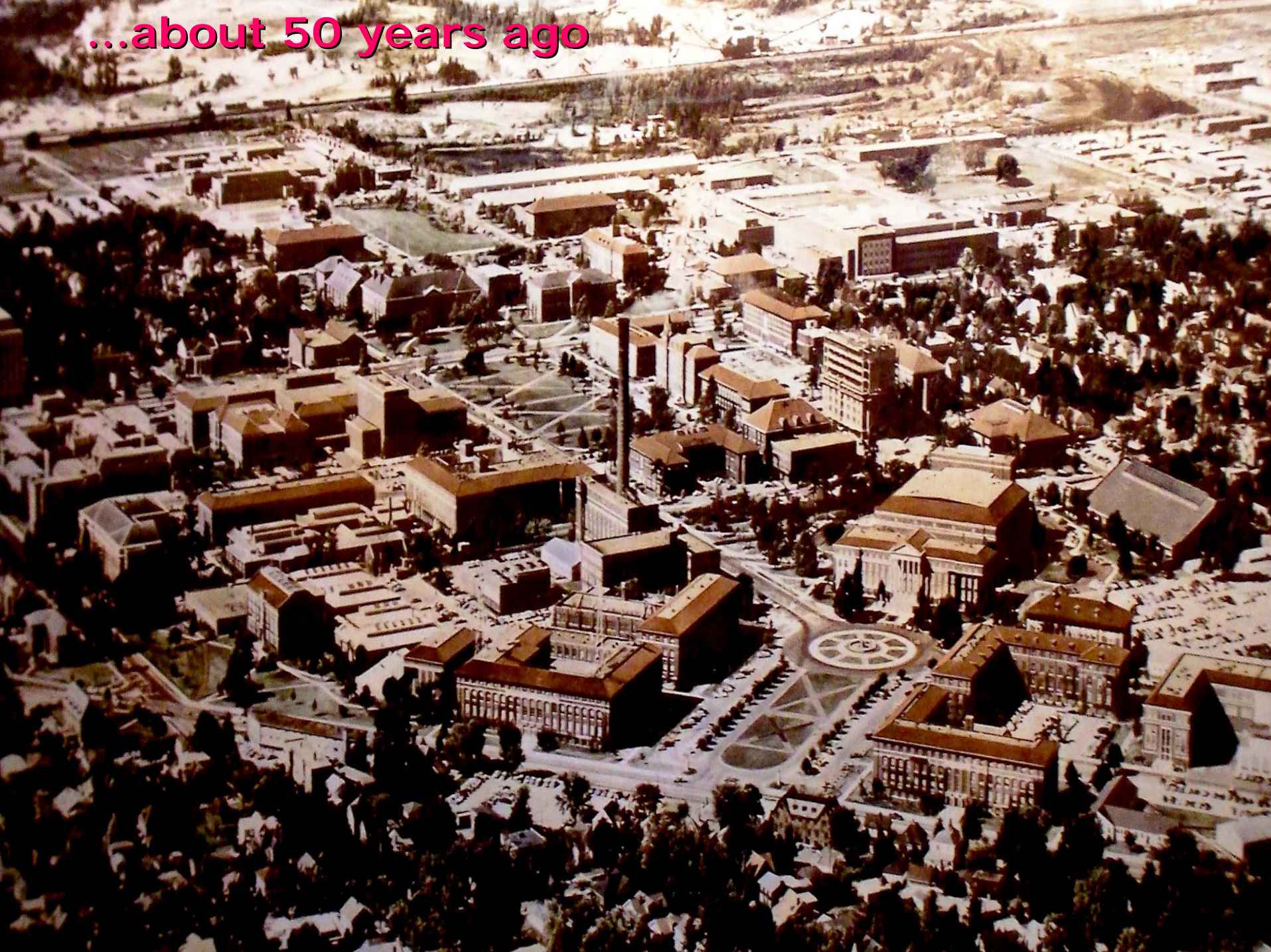


Chemical Engineering **PURDUE UNIVERSITY**



2006

...about 50 years ago



PATH THROUGH HISTORY



The first chemical engineering courses, "Industrial Organic Chemistry Lectures," is offered by Professor Percy H. Owens.



1902



April 16, 1907
President Winthrop C. Stone's recommendation to the Board of Trustees is approved, and a "chemical engineering curriculum" is formed within the Department of Chemistry.



1907



May 1909
Purdue's first bachelor's degree in chemical engineering is awarded to Berjevin M. Ferguson, a quarterback on the 1909 championship team.



1909



Purdue's School of Chemical Engineering is founded. The school's first faculty member and head, Dr. Henry C. Puffer, is hired and stays on until 1934.



1911



Chemical Engineering's graduate program is established and the first advanced degree, a professional degree in chemical engineering, is awarded to Marie R. Meacham.



1916



The first master's degree in chemical engineering is awarded to Ernest H. Hartwig. In 1916, he becomes the 120th person to receive a bachelor's degree from the school. His full-time tuition is \$30 per year.



1921

The Catalyst Club is "organized in fun." The first meeting (convention) was held on an island in the Washburn Reservoir. Robert Backster was one of the organizers, and H.C. Puffer was the first faculty advisor.



1923

The Chemical Engineering Society originally formed in 1924, becomes the fifth A.I.C.E. student chapter in the country. H.C. Puffer serves as advisor.



1929



The first chemical engineering doctorate is awarded to William H. Prichard, Jr. Elizabeth Hanks becomes the first woman to graduate from Purdue with a bachelor's in chemical engineering.



1935

Sponsored by the Catalyst Club, the first "Beer Banquet" is held: "a last get-together and griddle banquet at which the quills of the professors were unceremoniously broiled." In 1935, the faculty began taking appropriate "rewards" with a bit of their own about the senior students. Professor Alden Ensey ably aided his playwriting talents to this effort for years.



1935



March 31, 1938
The conversions on the new Chemical and Metallurgical Engineering (CMEET) Building is laid. The building is completed in August 1940, at a total cost of \$500,000.



1938

The Omega Chi Epsilon chapter is established, with the goal to "recognize excellence in chemical engineering, to promote original investigation in all branches of chemical engineering, and to provide service to the school."



1943



Robert and Marilyn Forney graduate, each with a bachelor's in chemical engineering. Robert Forney retired in 1960 as executive vice president of DuPont, and Marilyn Forney spent over 20 years offering expertise in the construction of low-income housing units for the elderly and disabled in Delaware and Pennsylvania.



1947



S. Margaret Willoughby becomes the first woman to receive a doctorate degree in chemical engineering from Purdue.



1950

Purdue-Taiwan Project, directed by Dr. R.H. Shreve, was an extensive academic exchange in the development of the Taiwan Engineering College into the National Cheng Kung University.



1952-61



May 12, 1955
Professor Shreve retires. Shreve served as Chemical Engineering third head from 1947 through 1955. Upon retirement, he donated his chemical abstracts, his books, gems, and gold collection to the school. The Shreve Trust and the Shreve Plaza have been established in his name.



1955



The Kelly Lecture is established with Warren L. McCabe as the inaugural speaker.



1965



Dr. G.V. Reklaitis serves as the ninth head of Chemical Engineering. Dr. Reklaitis envisions the expansion of the CMEET building that will eventually become the Chemicals of Excellence campaign.



1987-2003



The New Directions Industrial Advisory Council was created through the leadership support of senior executives from Abbott Laboratories, Air Products, Amoco, Dow Chemical, and Quantum Chemical.



1988



June 2000
Purdue trustees approve the construction of the building addition. The architectural firm Schmidt Associates is hired to design and oversee the \$19.5 million project.



2000



September 28, 2002
Ground is broken for the new addition. It is the largest expansion project in school history.



2002



January 1, 2004
Dr. Arvind Varma becomes the 10th head of Chemical Engineering.



2004



October 22, the CMEET building and new addition is renamed and dedicated as Forney Hall of Chemical Engineering in honor Robert and Marilyn Forney's longtime support of Purdue.



2004



The renovation of the older part of Forney Hall—the CMEET building built in 1940—begins.



2005

ChE Department Heads

H. C. Puffer	1911-1924
J. L. Gray	1926-1947
S. N. Shreve	1947-1955
E. W. Corning	1951-1955
S. Golding	1955-1956
S. Greenkorn	1957-1973
L. Koppel	1974-1981
E. Andrus	1981-1987
G. V. Reklaitis	1987-2003
A. Varma	2004-present



**R. N. Shreve (1885-1975)
(Head, 1947-51)**

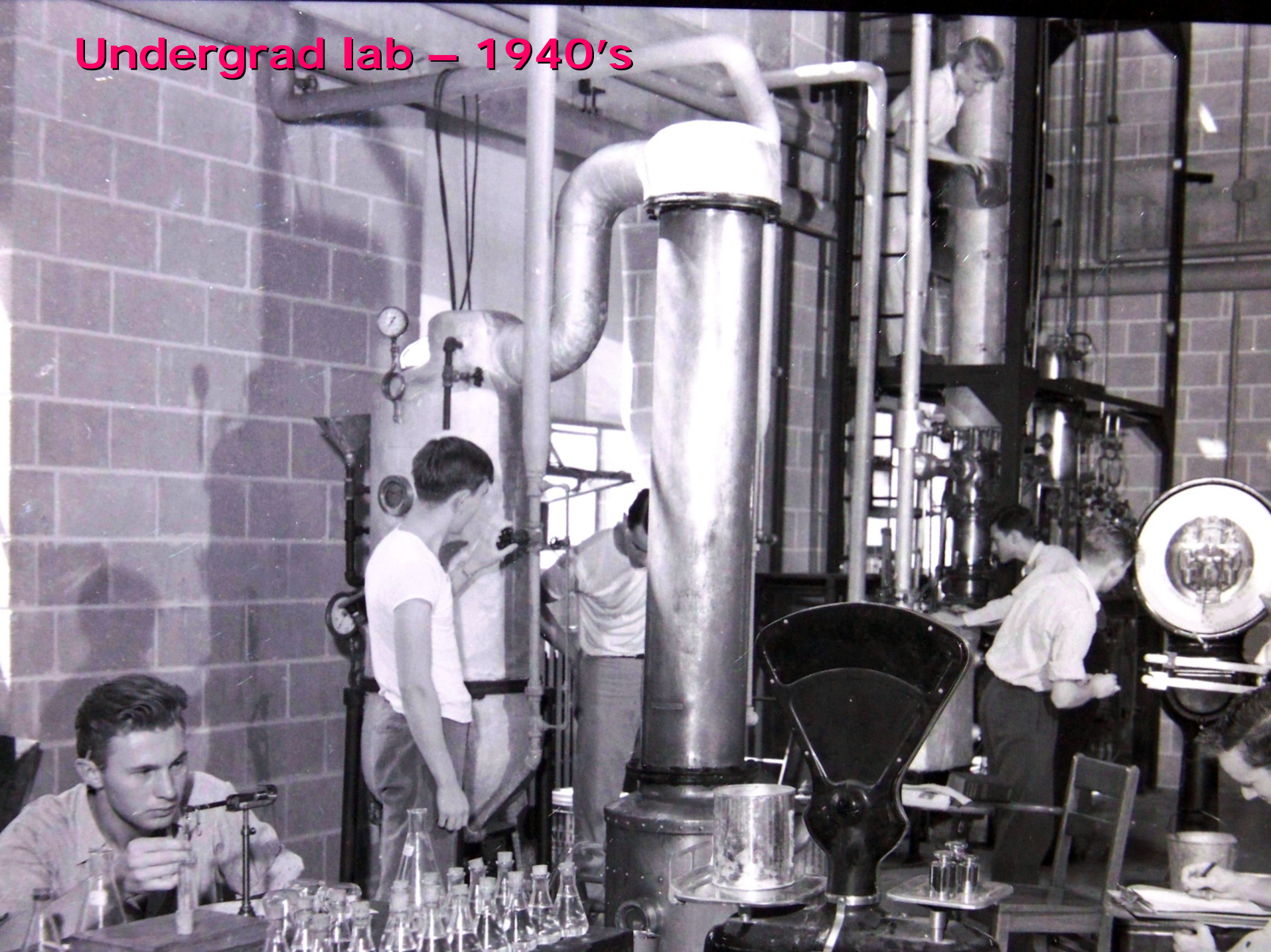
**Dean Potter - cornerstone
dedication - CMET, 1939**



CMET Building ~ 30 years ago



Undergrad lab – 1940's



**Metallurgy option
1940**





Mixing study –
C.L Lovell, 1941





Forney Hall 2006

Chemical Engineering Faculty



Rakesh Agrawal
Sc.D., MIT, 1980



Osman Basaran
Ph.D., Minnesota, 1984



Chelsey D. Baertsch
Ph.D., UC - Berkeley, 2001



Stephen P. Beaudoin
NCState, 1995



James M. Caruthers
Sc.D., MIT, 1977



David S. Corti
Ph.D., Princeton, 1997



W. Nicholas Delgass
Ph.D., Stanford, 1969



Elias I. Franses
Ph.D., Minnesota, 1979



Robert E. Hannemann
M.D., Indiana, 1959



Michael T. Harris
Ph.D., Tenn.-Knoxville, 1992



Hugh W. Hillhouse
Ph.D., Massachusetts, 2000



R. Neal Houze
Ph.D., Houston, 1968

ChE Faculty



Sangtae Kim
Ph.D., Princeton, 1983



Gil Lee
Ph.D., Minnesota, 1992



Julie Liu
Ph.D., CalTech, 2006



John A. Morgan
Ph.D., Rice, 1999



Joseph F. Pekny
Ph.D., Carnegie Mellon,
1989



R. Byron Pipes,
Ph.D., Texas-Arlington,
1972



Doraiswami Ramkrishna
Ph.D., Minnesota, 1965



Gintaras V. Reklaitis,
Ph.D., Stanford, 1969



Fabio H. Ribeiro
Ph.D., Stanford, 1989



Kendall T. Thomson
Ph.D., Minnesota, 1999



Arvind Varma
Ph.D., Minnesota, 1972



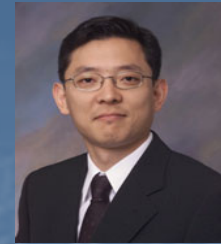
**Venkat
Venkatasubramanian**
Ph.D., Cornell, 1984



Nien-Hwa Linda Wang
Ph.D., Minnesota, 1978



Phillip C. Wankat
Ph.D., Princeton, 1970



You-Yeon Won
Ph.D., Minnesota, 2000

Emeritus Faculty



Lyle F. Albright
Ph.D., Michigan, 1950



Ronald P. Andres
Ph.D., Princeton, 1962



Kwang-Chu Chao
Ph.D., Wisconsin, 1956



Robert A. Greenkorn
Ph.D., Wisconsin, 1957

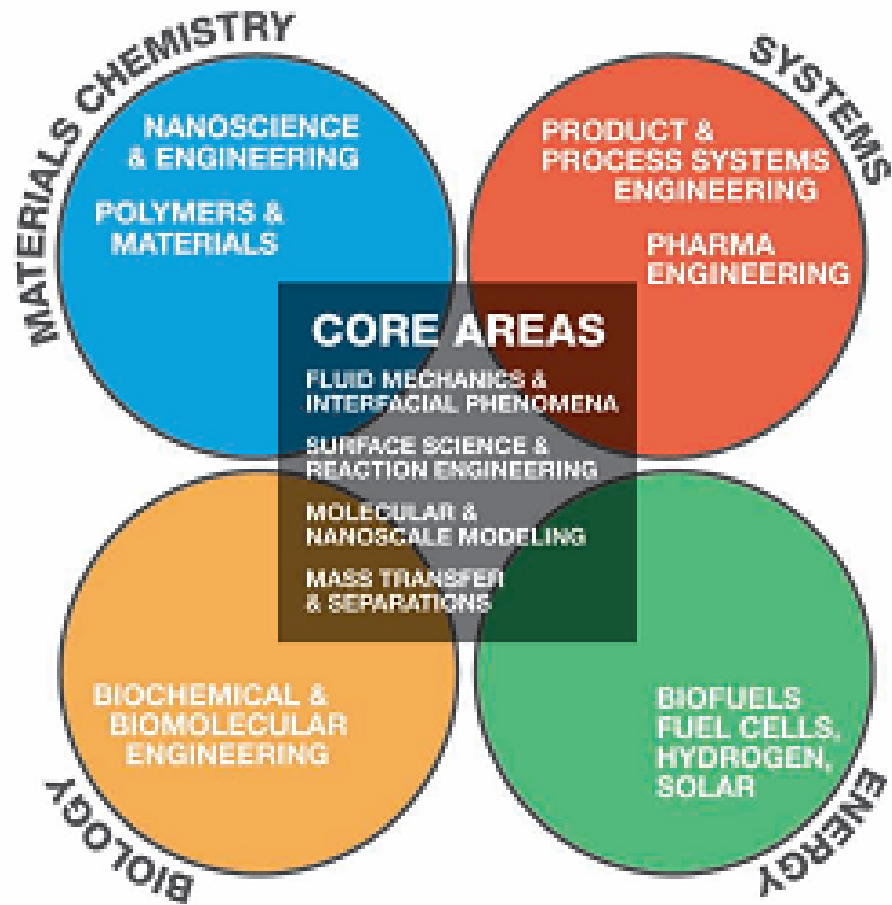


Robert G. Squires
Ph.D., Michigan, 1963



George T. Tsao
Ph.D., Michigan, 1960

RESEARCH FRONTIERS



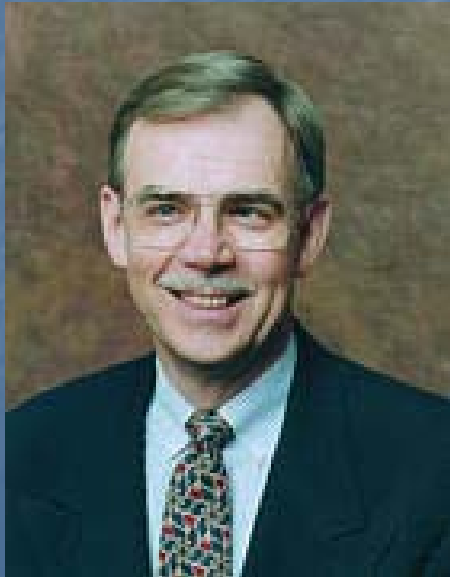
Congratulations to ChE Faculty, Staff & Alumni!



Purdue awarded \$15 million NSF Engineering Research Center

[Along with Rutgers, NJ Institute of Technology, U of Puerto Rico]

"to research and improve the way
pharmaceuticals, foods and agricultural
products are developed and manufactured."



Rex Reklaitis

Lead investigator for Purdue,
Deputy Director

Congratulations to ChE Faculty



Rakesh Agrawal

AIChE Practice Award



Ronald Andres

AIChE Nanoscale Science & Engineering
Forum Award

Congratulations to ChE Faculty



W.N. Delgass

New York Catalysis Society
Excellence in Catalysis Award



Michael T. Harris

Purdue Engineering Mentoring Award

Congratulations to ChE Faculty



Arvind Varma

Technology and Innovation Award
(*Industry Week*)



Venkat Venkatasubramian

Shreve Award for Outstanding Teaching

Congratulations to ChE Staff



Jeffrey Valley

Purdue's "One Brick Higher" Award



Alumni Honors

- **Honorary Doctorate**
- **Distinguished Engineering Alumni**
- **Outstanding Chemical Engineer**
- **AIChE Awards**

Honorary Doctorate in Engineering

Don Orr (BS '61)

**Senior Corporate Vice President (ret.)
Air Products & Chemicals Inc.**





AIChE R. H. Wilhelm Award

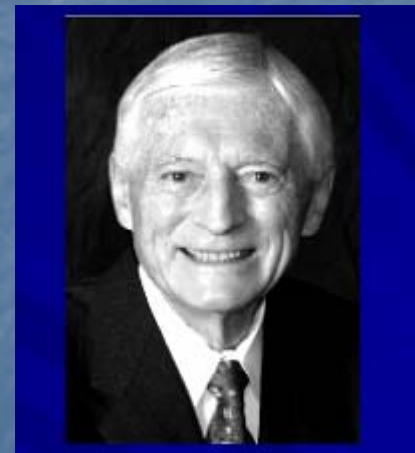
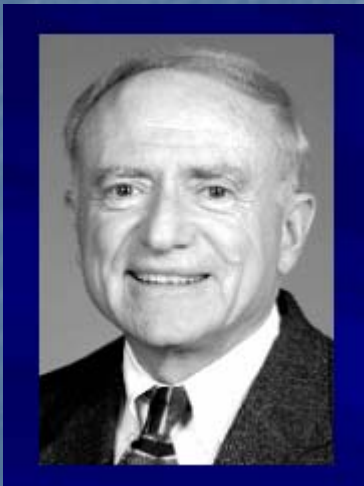


Christopher Bowman (PhD '90)



2006 Distinguished Engineering Alumni

Chemical Engineering









2006

SCHOOL OF CHEMICAL ENGINEERING



OUTSTANDING CHEMICAL ENGINEER AWARDS



Michael Ladisch (MS'74, PhD '77)

Director, Laboratory of Renewable Resources Engineering (LORRE)
Distinguished Professor, Agricultural and Biological Engineering

James Rust (BS '58, PhD '65)

Professor, Nuclear Engineering, Georgia Tech (ret.)

James Stake (BS '74)

Executive Vice President
Enterprise Services
3M Corporation



First
"Outstanding Chemical Engineer"
Convocation

1993





2006 Kelly Lecture

Frances H. Arnold

Dick and Barbara Dickinson Professor of Chemical Engineering
and Biochemistry, California Institute of Technology

“An Artificial Protein Family Created by Structure-Guided Recombination”

Tuesday, April 4, 2006 at 3:30 p.m. in FRNY G140

“Engineering by Evolution”

Wednesday, April 5, 2006 at 11:30 a.m. in FRNY G140

PURDUE
UNIVERSITY

School of Chemical Engineering



ChE ACADEMIC ADVISORY BOARD

Alexis Bell

Warren and Katharine Schlinger Distinguished Professor
UC Berkeley

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Rudolph R. and Florence Dean University Professor of
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Bayer Professor of Chemical Engineering, MIT

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UC Santa Barbara

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NEW DIRECTIONS

Industrial Advisory Council

School of Chemical Engineering

INFLUENCE

ACHIEVE

INNOVATE

*Working together to create
an educational environment
to prepares today's
chemical engineering
students for the 21st century*

PURDUE
UNIVERSITY




New Directions Industrial Partners

 3M Corporation

 Air Products and Chemicals Inc.

 Anheuser-Busch, Inc.

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 Chevron Phillips Chemical Company

 Dow Chemical Company

 Eli Lilly and Company

 Exxon Mobil Corporation

 Kimberly-Clark Corporation

 Lubrizol Corporation

 Lyondell Chemical Company

 National Starch & Chemical Corp.

 Procter & Gamble Company

 Shell Oil Company



Voices of Inspiration

Vern Weekman (BS '53, PhD '63, DEA 1980)

...sharing experience and
wisdom with undergraduates







Personal Experiences in Chemical Engineering and Recent R&D Topics at Dow

William Banholzer

Corporate Vice President and Chief Technology Officer
The Dow Chemical Company
February 28, 2006

...and the latest ideas
and trends.

Graduate Student Organization

President

Nanette Boyle

Vice President

Bich-Van Pham

Voting Representative

Hari Nair

First Year Representative

Dana Gary

Social Committee Chair

Pavan Akkisetty

PGSG Senator

Oi Xu





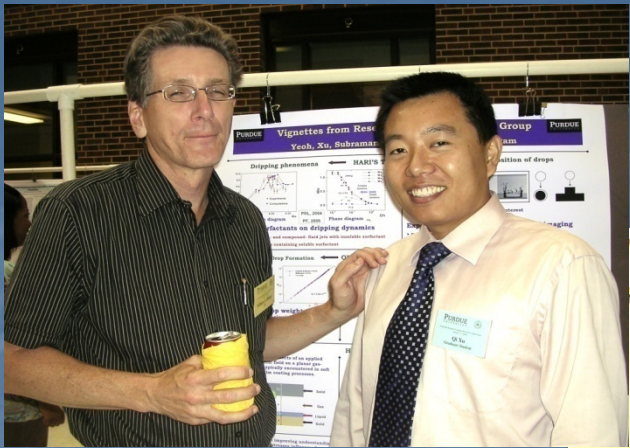
PURDUE UNIVERSITY
SCHOOL OF CHEMICAL ENGINEERING

Program and Abstracts

Fifteenth Annual
Graduate Research Symposium
August 17, 2006



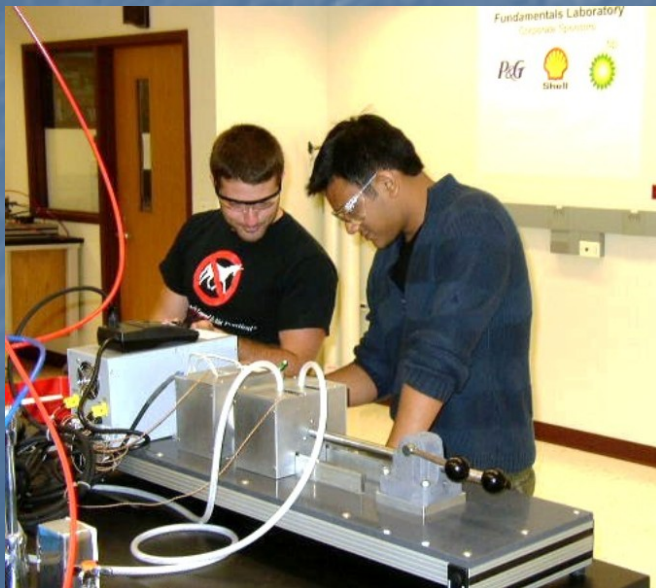
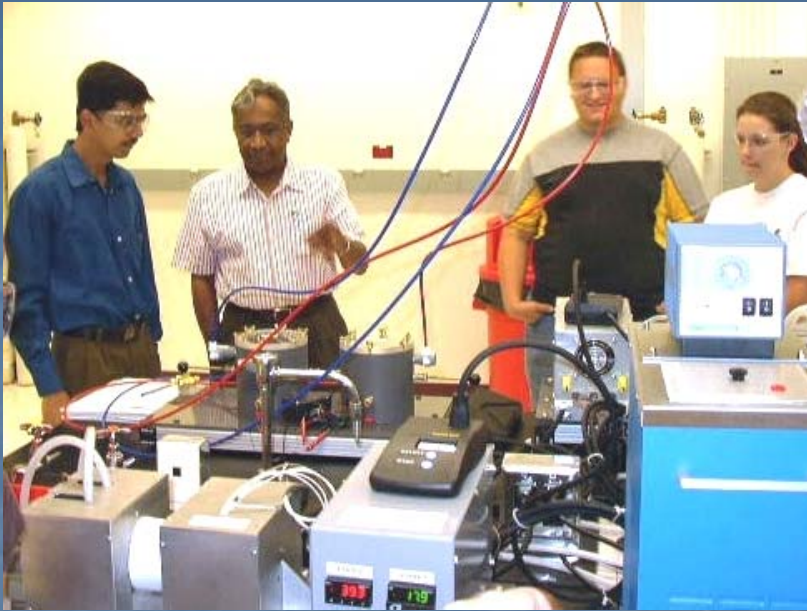






Fundamentals Lab

Our first class ...



Fundamentals Laboratory
Corporate Sponsors



AIChE: The Purdue Student Chapter of the American Institute of Chemical Engineers

ChE-Car
Regional Champs,
Spring 2004



Promoting:

Leadership
Professionalism
Community Involvement
Social Engagement



Fun with
Chemistry



AIChE National Conference 2003,
San Francisco



There is more
to us than just
Chemical
Engineering



REBOILER

Please feel free to take a look at the first Reboiler of the semester and see who is involved in AIChE.



THE REBOILER

Brought to you by the
Purdue Chapter of the
American Institute of
Chemical Engineers

November 2005

Edited By: Sandra Azzano

Frontiers in AIChE

By: Adam Slaboski

With strong dedication and hard work from our committee heads and executive board, this has been a very exciting semester for the Purdue Student Chapter of AIChE! Through our Industrial Roundtable Banquet, our various company information sessions, and our industrial teleconference, the AIChE members have enjoyed many opportunities to network with industry representatives. I have received much positive feedback from the company representatives about how much they enjoyed the opportunity meeting the members of Purdue AIChE. Many companies are also taking a more active role with our chapter. Shell and Purdue AIChE established a strong partnership last year, and they have continued their commitment with strong financial support this year. Corox, Procter & Gamble, and Air Products all contributed to sponsoring our chapter's trip to the AIChE National Conference in Cincinnati this past October. And Lyondell has generously sponsored our Chem-E-Car team, who is very excited to reclaim national recognition for Purdue!

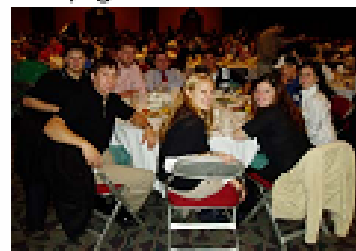
Thanks to the strong support from our two chapter advisors, Dr. Morgan and Dr. Kim, as well as continued support from Dr. Vama, Dr. Beau-doin, and many other professors, AIChE has enjoyed a much closer relationship with the ChE faculty this semester. An unprecedented number of professors have been attending our Student/Faculty Luncheons and Rubbing events.

All of the students and professors who have attended these events have really enjoyed the opportunities to get to know one another outside of the classroom.

I encourage all of you to continue developing relationships and friendships with the Purdue professors. Personally, talking with and getting to know the professors outside of the classroom has helped me with topics to discuss in job interviews as well as with recommendation letters.

The AIChE National Conference took place on the weekend of October 29 in Cincinnati, OH. Sixteen AIChE members attended and had a great time getting to know one another, networking with ChE students from all parts of the nation, and learning skills and programs to enhance our chapter's operations. If you have not yet heard, I am excited to inform you that Purdue will be hosting the North Central Regional Conference, which will take place on April 1, 2006.

Continued on page 8



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Zoo / ChE Car

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Hardy Engineering
Conversions

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Game Center / Pla-
lantrophy

Page 6-7

Nationals/
Get to Know Kevin

Page 8-9

Answers to Games

Page 10

Around the School...



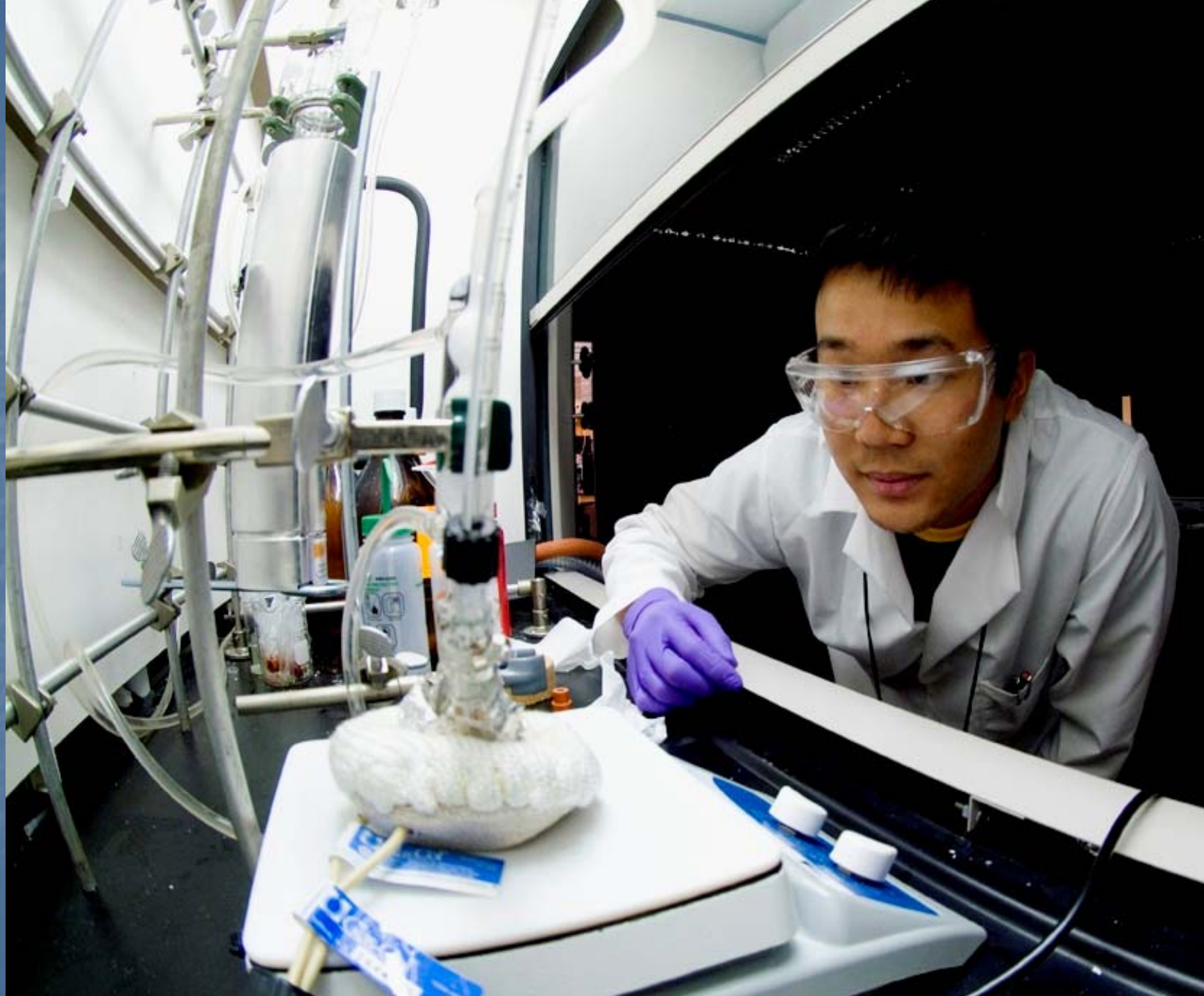
EXIT

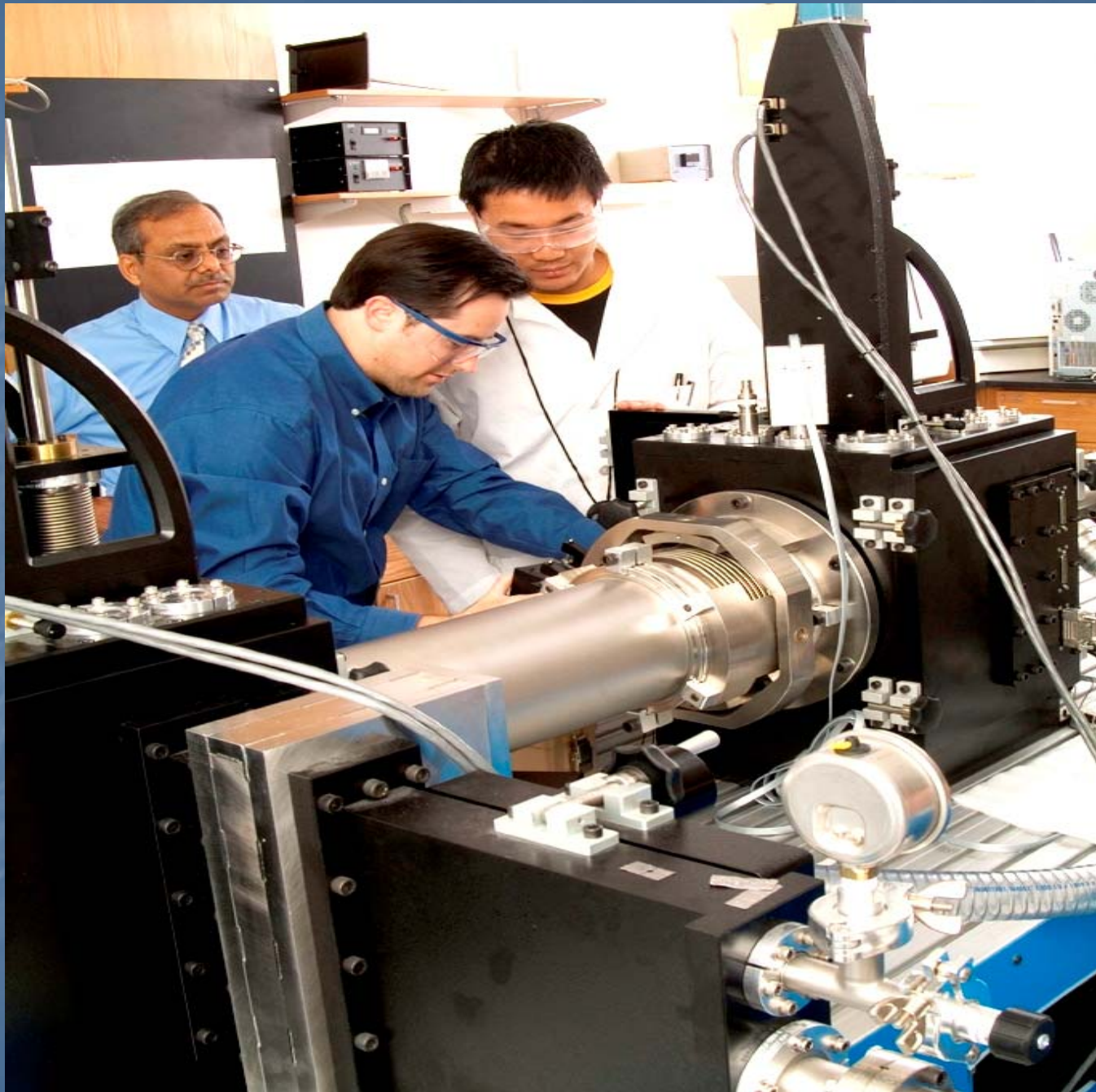




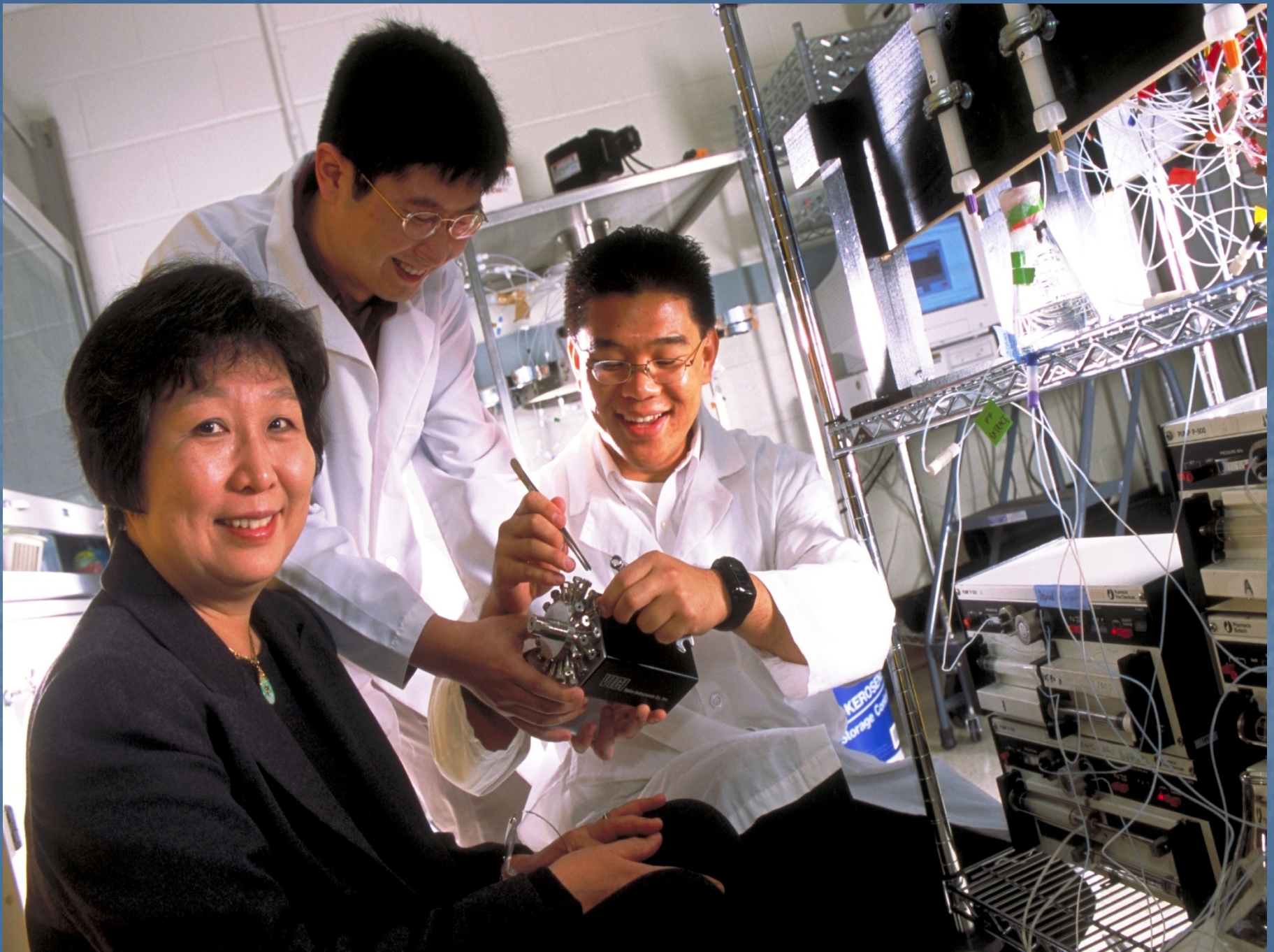














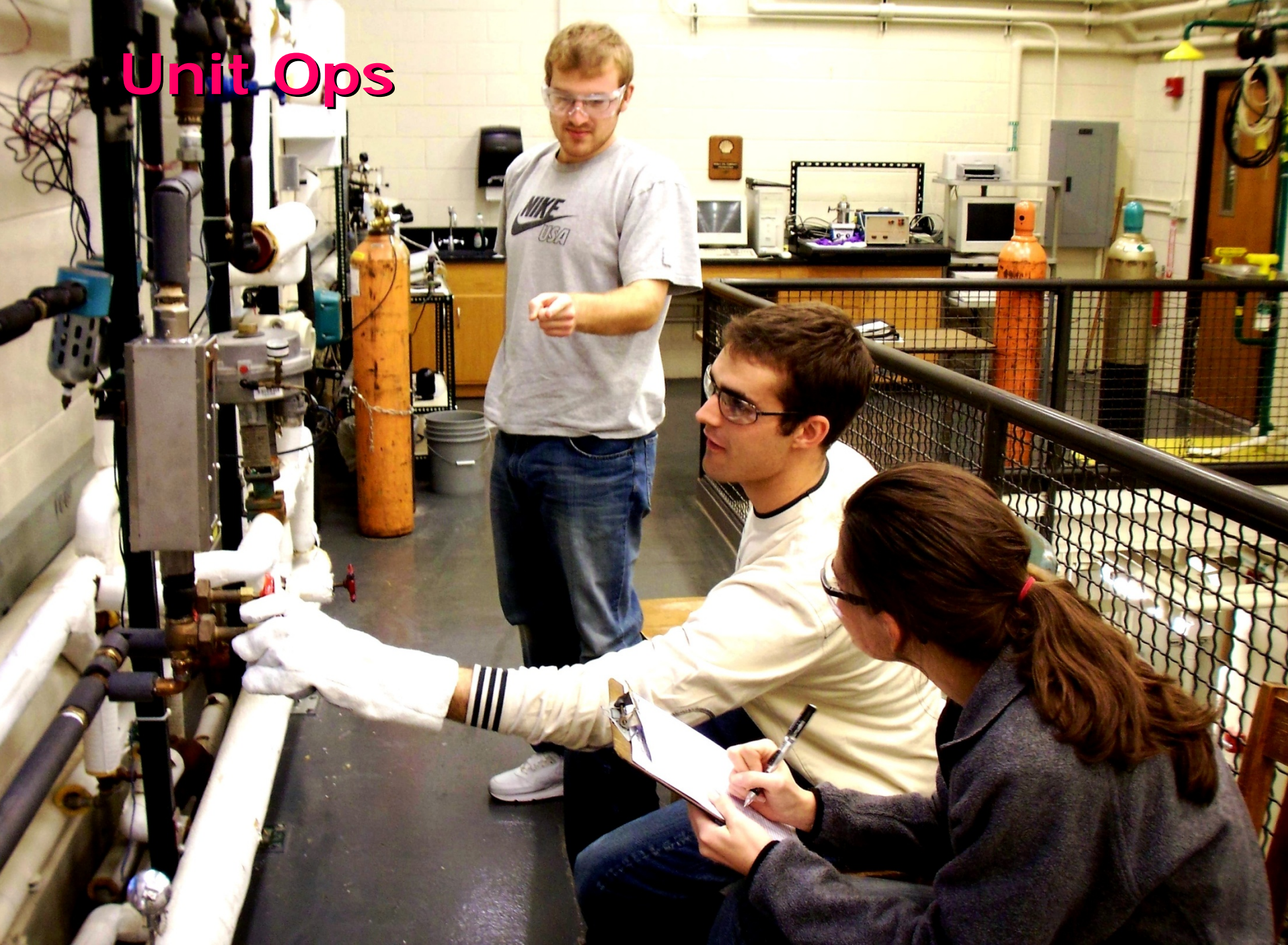
Unit Ops



Unit Ops



Unit Ops



Unit Ops





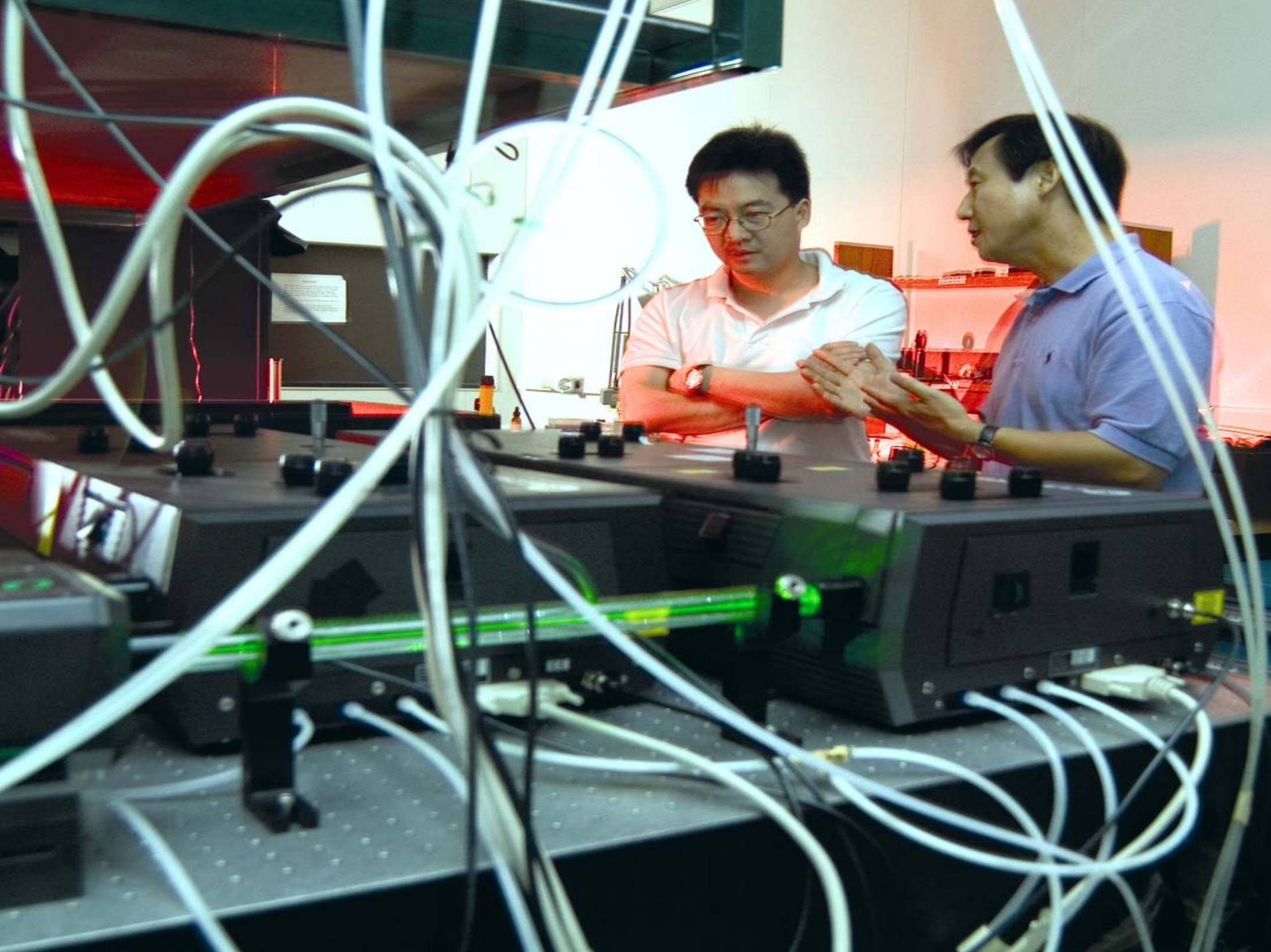




Wipe
Utility Wipers
811

SPECTRUM
Aldrich

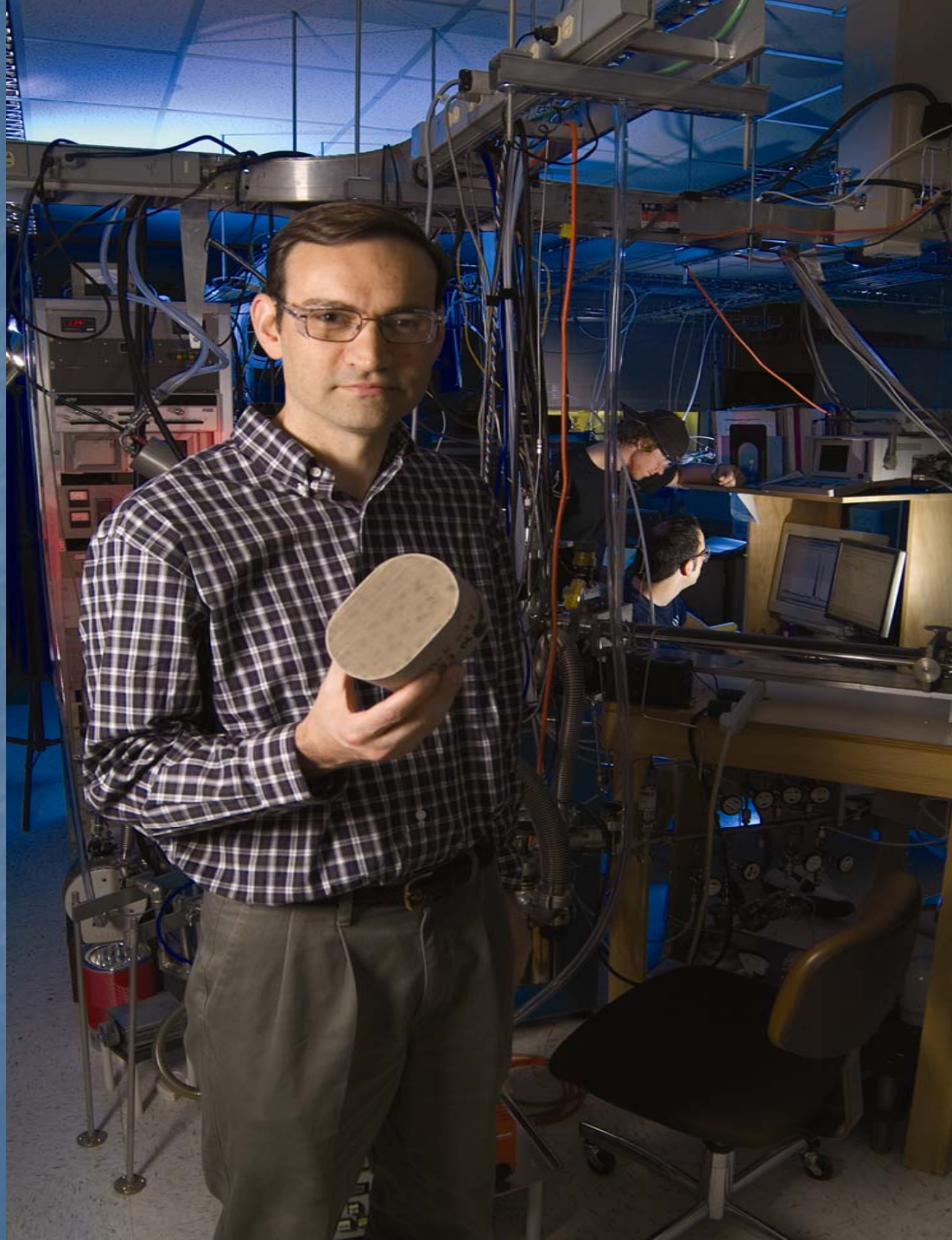












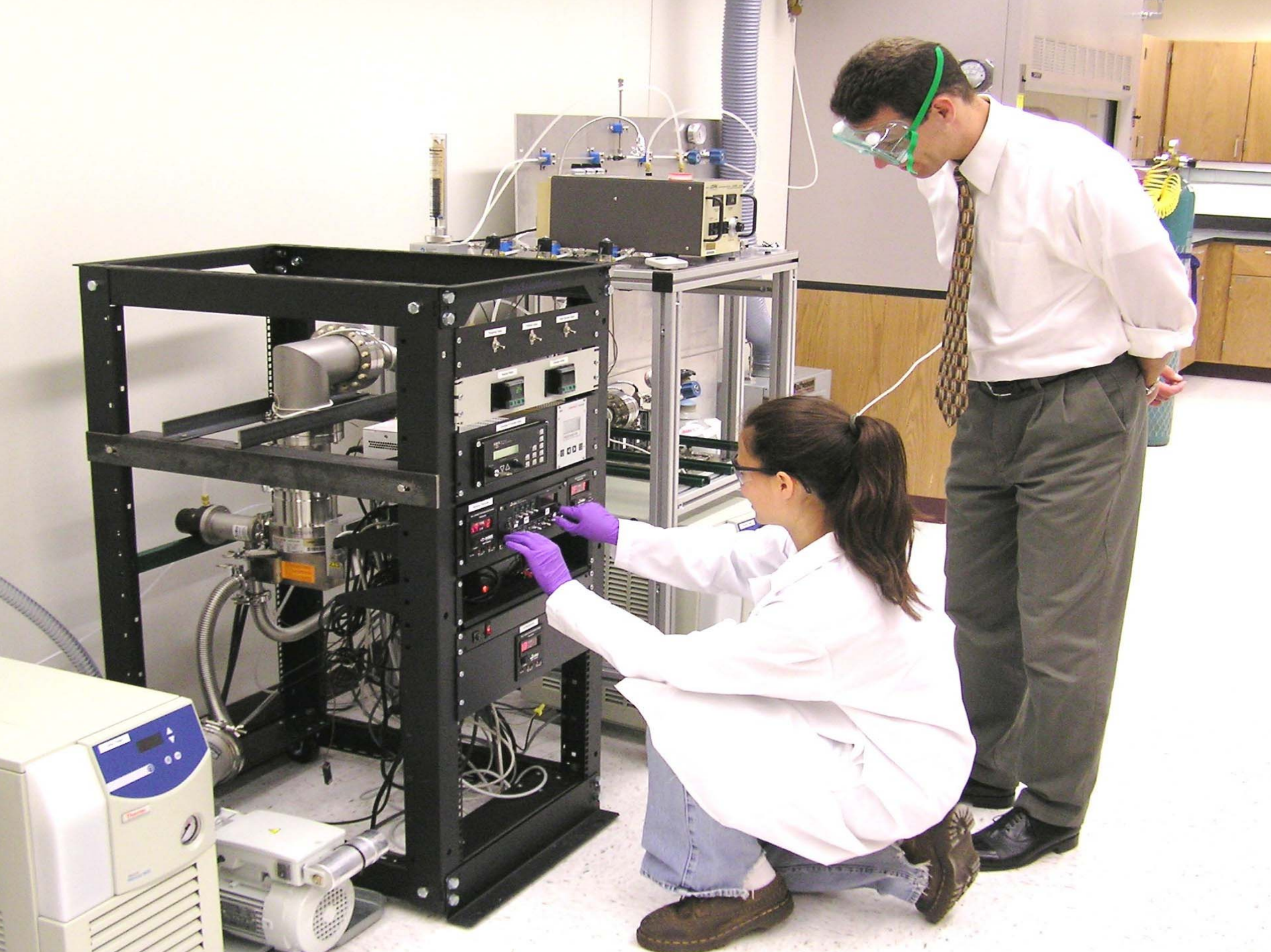


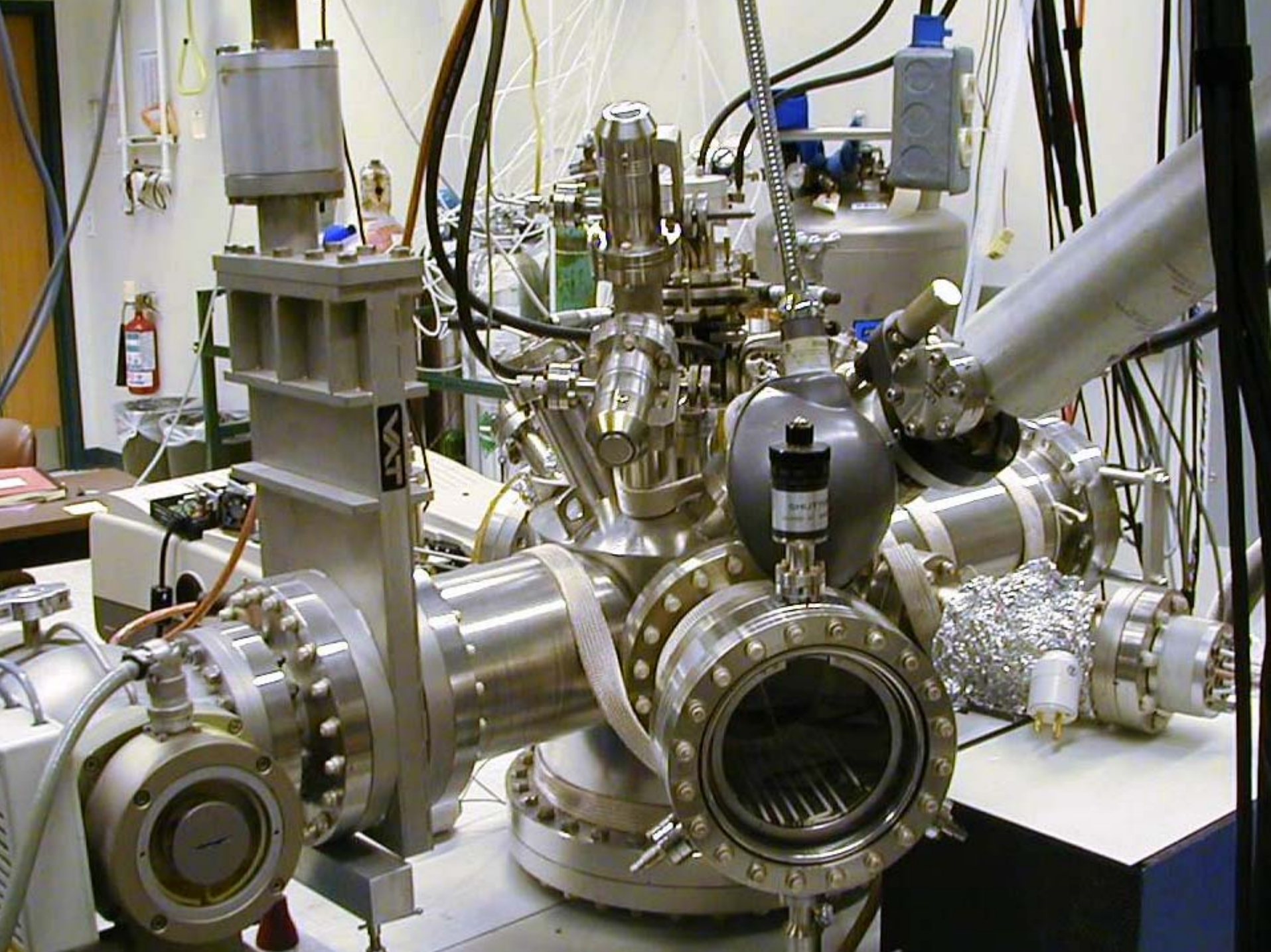
THIS ROOM RESERVED FOR
CHEMICAL ENGINEERING STUDENTS

Only use
Dry Erase Markers
on the Board

Piz
M
All CHE's











H → Change P & const T
ΔH = ΔU + PΔV

ΔH = ΔU + PΔV
ΔH = ΔU + PΔV

ΔH for U & const
ΔU = ΔH = 0
ΔH = ΔU + PΔV

const volume
 $\frac{dU}{dT} = Cv = \text{specific heat}$
 $\frac{dH}{dT} = Cp = \text{specific heat}$
with volume







Exam #2
Thursday, 7:00pm
CIVL 1252

REVIEW:

1. Balance Eqns.
Mass & Thermal Energy
(micro & macro)
2. Rate Eqns.
(Conduction & Convection)
3. S-S & Transient Conduction

- a. Thermal Resistances
- b. Bi, Fo
- c. Finned Surfaces
4. Convective H.T.
 - a. Nu, Re, Pr, St
 - b. Analogies, Reynolds
Colburn
 - c. Correlations

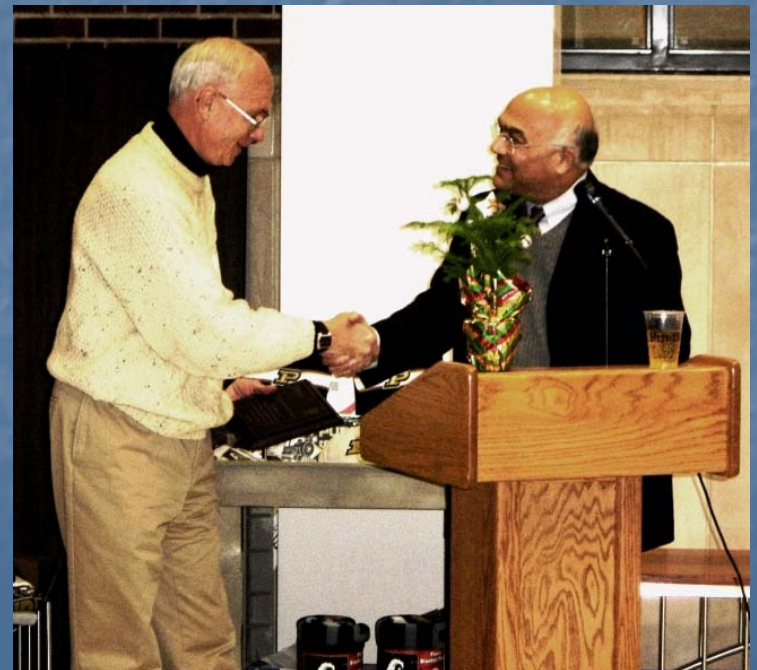
5. System Design
 $\dot{Q} = UA(F\Delta T_{lm})$
 $Fo = \frac{\alpha t}{L^2}$





*School of Chemical
Engineering*
Annual
Faculty/Staff
&
Graduate Student
Recognition Reception

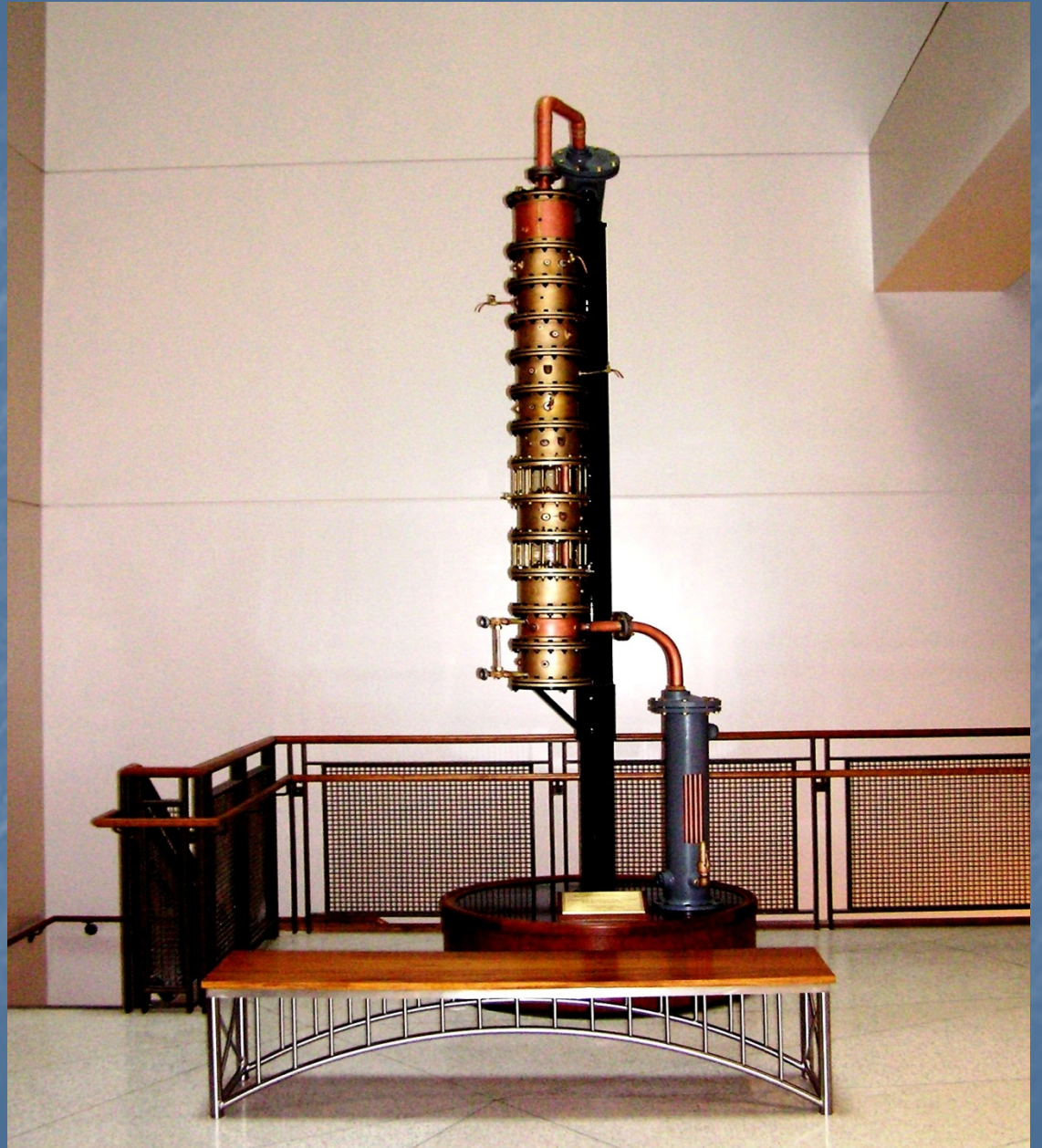
Prof Andres honored for years of service 1981 - 2005







"Old Faithful"



Come celebrate...April 13, 2007



Purdue ChE Curriculum Centennial

Champions of Excellence

The next step...

*Renovation
Phase 2*

