Historical Perspectives on Research
UF College of Pharmacy

Perspectives
- Where Are We Now?
- From Where Did We Come?
- Where Are We Going?

• The research enterprise in the UF College of Pharmacy has made significant progress over the past forty years under the leadership of deans Finger, Schwartz, and Riffee.

• The enhancement of the reputation of the UF College of Pharmacy through advancements in the research agenda, via added faculty of national and international standing, was begun with the leadership of recent deans: Finger began the clinical research program, Schwartz significantly expanded the research productivity of faculty, and Riffee has enhanced and nurtured continued growth and transformation of research in the college.

Perspectives
- The UF College of Pharmacy has a rich history of research activity inclusive of offering the first PhD granted at UF.

- Women have been instrumental in the research success, particularly over the past twenty years; and, they will continue to be significant contributors into the future.

- Faculty recognitions on national and international pharmaceutical science levels have truly been outstanding.
Perspectives

- Development of research centers has added to the recognition and productivity of research in the College of Pharmacy.
- Influx of faculty and graduate students from other countries has enhanced the reputation of the UF College of Pharmacy through their research abilities and broader scientific connections in the world. The contributions of Derendorf, Bodor, Hochhaus, Hartzema, Winterstein, Schreier, Curry and others have been immeasurable.
- The Gator Global Gathering is just one significant manifestation of their impact.

Perspectives

- Funding by alumni and friends of the UF College of Pharmacy such as Dubow, DeSantis, Chandran, Speigel, and Massey has been vital to supporting the research enterprise.
- The creation of the Office for Development and Alumni Affairs and the National Advisory Board has been instrumental in stimulating funding for research and other needs in the UF College of Pharmacy.
- The establishment of the Associate Dean for Graduate Studies and Research has provided the hands-on leadership necessary to document, guide, and stimulate research activities in the five department structure of the UF College of Pharmacy. The contributions of Simpkins, Dawson, and Millard in this role cannot be over-emphasized.

Perspectives

- The success of the research enterprise is due to the support of all faculty and staff. The quality of graduate students and post-doctoral fellows is paramount.
- Recently renovated facilities and increased space to conduct research has and will be vital to enhancing research productivity.

Perspectives

- The graduate and post-doctoral research programs, of course, have their greatest impact on the development of new researchers that contribute to the advancement of knowledge in the pharmaceutical sciences.
- The accomplishments of our “research alumni” comprise the greatest testament of the quality and success of the research programs in the UF College of Pharmacy.
Perspectives

- Successful research depends on many factors
  - Qualified faculty
  - Excellent students (undergraduate, professional, and graduate)
  - Outstanding facilities
  - Administrative leadership
  - University supportive services (DSR, UFF, & others)
  - Well trained staff
  - All faculty – teaching, service, administration

Perspectives

- Research has obvious value in the advancement of knowledge.
- It also is paramount as a foundational basis for the profession of pharmacy.
- An outstanding research program strengthens the quality of education for pharmacy graduates, and insures that the profession will continue to evolve.

Where Are We Now?

Ranking UF College of Pharmacy

- Among top echelon of colleges of pharmacy in the USA for many years
- Survey ranking by U.S. News and World Report:
  - 9th – in 2008
  - Tied with Purdue, Arizona, Illinois- Chicago
  - Research productivity is a major determinant.
Status of Graduate Studies and Research

RESEARCH AND GRADUATE STUDIES OFFICE
UF COLLEGE OF PHARMACY ANNUAL REPORTS
http://www.cop.ufl.edu/millard/orgs_a~1/
Courtesy of Dr. William Millard’s excellent annual reports

2007-2008 Annual Report Highlights

- Four graduate/research specialties
  - Medicinal Chemistry 1978
  - Pharmacodynamics 1989
  - Pharmaceutical Outcomes and Policy 1996
  - Pharmaceutics 1998 (reorganized)

Collaborative Ph.D. track in Clinical Pharmaceutical Sciences (CPS) between Pharmaceutics and Pharmacotherapy and Translational Research

Centers in UF College of Pharmacy

The graduate studies and research enterprise significantly augmented by four centers.
- Center for Drug Discovery
- Center for Pharmacogenomics
- Center for Food-Drug Interaction Research & Education
- Center for Research in Pharmaceutical Care
- Past centers: Center for Neurobiology of Aging and Center for Pharmacokinetic Research

Graduate Faculty

- 45 faculty with graduate faculty status
- 62 full-time faculty
Graduate Students

- Pharmaceutics 45 of which 11 are in the CPS track with Pharmacotherapy and Translational Research
- Pharmacy Outcomes & Policy 24
- Medicinal Chemistry 17
- Pharmacodynamics 12
- 32% USA educational institutions
- 68% Foreign educational institutions

Pharm.D./Ph.D.

- 14 students involved with this program, which has continued to grow by 3-4 students/year in the last four years.

NIH Ranking via the AACP

- 2003 – ranked 15th
- 2004 – ranked 13th
- 2005 – ranked 13th
- 2006 – ranked 12th
- 2007 – ranked 20th
- 2008 – ranked 14th

Funding by Department

- ~$2.3 million – Pharmacotherapy and Translational Research
- ~1.9 million – Medicinal Chemistry
- ~1.2 million – Pharmaceutics
- ~0.5 million – Pharmacodynamics
- ~0.3 million – Pharmaceutical Outcomes & Policy
Sources of Funding

- U.S. Federal Agencies (NIH, DOD, USDA)
- Florida State Agencies (AHCA)
- Corporations and Companies
- Foundations and Societies (AHA, ADA, etc)
- Other

Endowed Chairs and Professorships

- Dr. Perry A. Foote Eminent Scholar Chair Fund - **Bram Hartzema**
- Frank A. Duckworth Eminent Scholar Chair in Drug Research and Development - **Ray Bergeron**
- V. Ravi Chandran, Ph.D. Professorship in Pharmaceutical Sciences - **Julie Johnson**
- Jack C. Massey Professorship Fund - **Margaret James**
- CVS/Pharmacy, Inc. Professorship - **Hartmut Derendorf**
- Debbie and Sylvia DeSantis Term Professorship in Natural Products - **Veronika Butterweck**
- Nicholas Bodor Professorship in Drug Discovery - vacant at this time

Comment on Budget

- Budget crises have been handled to date without compromising the quality of the research enterprise. The faculty are approximately 25% above last year in federal support for research (NIH).

From Where Have We Come?

Dean Leigh – First Dean of the College of Pharmacy

Goal – national and international reputation in chemistry, later pharmacy, at a major university in the South
Dean Leigh

- Implemented graduate program for Masters (1925) and Doctor of Philosophy (1931) degrees.
- First college of pharmacy in southeast to offer PhD degree in pharmacy.
- First PhD degree awarded at UF in 1934 to L.J. Klotz
- Expanded pharmacy curriculum to a four-year program.

Dean Leigh

- “The greatest men in the world are scientific men. Scientists are creators, discoverers, those who reach down into the dark unknown and create something new, something unheard of. Scientists are men who light up darkness never before lighted.”

Dr. W. J. Husa

- One of the great leaders in American Pharmacy from the 1920s through 1950s.
- His book, “Pharmaceutical Dispensing,” was a classic on drug compounding procedures, compatibility, and stability, and was used from 1925 to the 9th edition in 1984.

Dr. J. W. Husa

- Department Head of Pharmacy 1930-1960.
- Introduced PhD program in industrial pharmacy in the UF College of Pharmacy
- Ebert Prize from APhA in 1941.
- Research on extraction methods to purify active principles from plants.
Dr. Perry A. Foote

- Second Director of the School of Pharmacy 1939-1949
- Second Dean of the College of Pharmacy 1949-1967
- Respected leader in pharmacy.
- Research with volatile oils.

Dr. Perry A. Foote

- Expanded industrial pharmacy graduate program.
- Led move of the College from Leigh Hall to the Pharmacy Building in the Health Science Center in 1961.
- Established manufacturing laboratories in 1950 and expanded them in the new Pharmacy Building in 1961.

Dr. Edward R. Garrett

- First Graduate Research Professor.
- National and international acclaim for research focused on understanding drug action and metabolism, drug stability, pharmacokinetics and toxicity of drugs of abuse.

Dr. Edward R. Garrett

- Established many of the fundamental principles that serve as the foundation for modern research in pharmaceutical sciences.
- A pioneer in charting science-based approaches to determining optimal drug dosages, drug toxicity, and related clinical considerations of new pharmaceuticals.
Dr. Kenneth F. Finger

- Third Dean of the College of Pharmacy 1968-1978.
- Hired clinical pharmacy faculty with emphasis on research as well as teaching and service.

Ronald B. Stewart

- Supervised many graduate students for the MS in Hospital, later MS in Clinical Pharmacy, and established the post-baccalaureate PharmD program.
- Extensive research on the epidemiology of adverse drug reactions and drug effects in the elderly.

Dr. Michael A. Schwartz

- Dean of the College of Pharmacy 1978-1996
- Led significant expansion of the research capacity of the College of Pharmacy.
- Recruited outstanding faculty to increase the research productivity and recognition.

Dr. Nicholas Bodor

- Graduate Research Professor
- Director for the Center for Drug Discovery
- Florida Scientist of the Year
- Volwiler Award recipient from AACP
- Numerous other awards reflecting national and international acclaim.
Dr. Raymond Bergeron

- Graduate Research Professor
- Duckworth Eminent Scholar of Drug Development
- $3 million NIH merit award; consistent and excellent contributions to scientific knowledge.
- 119 patents; two drugs in clinical trials.

Dr. Hartmut Derendorf

- Distinguished Professor of Pharmaceutics
- CVS/Pharmacy, Inc. Endowed Professorship
- Chair, Department of Pharmaceutics
- Director, Center for Food-Drug Interaction and Research
- President, American College of Clinical Pharmacology.

Dr. Douglas Hepler

- Chair, Department of Pharmacy Health Care Administration.
- Director of the Therapeutic Outcomes Monitoring Project.
- Director, Center for Pharmaceutical Care.
- Remington Medal in 1997, the highest award in pharmacy.
- ASHP Award for Sustained Contributions to the Literature of Pharmacy Practice.
- FIP Pharmaceutical Practitioner of the Year.

Clinical Researchers

- Expansion of research applied to patient care.
- Dr. Leslie Hendeles, Dr. Lindsay DeVane, Dr. John Pieper and others joined the faculty and helped established the clinical pharmacy discipline as a mainstay in the UF College of Pharmacy.
- Research by these young faculty was instrumental in establishing credibility and acceptability of their role and importance in pharmacy education.
Dr. Leslie Hendeles

- Pediatric specialty practice with focus of research in pulmonology, especially medications to control asthma.
- Outstanding research with numerous awards.
- NIH support for research.
- Recipient of Sumner J. Yaffe Award for lifetime achievement in improving children’s health

Women Researchers

- More women have joined the faculty in the administrations of Schwartz and Riffee and made significant contributions in research, teaching, and service
  - Dr. Margaret James
  - Dr. Maureen Keller-Wood
  - Dr. Carole Kimberlin
  - Dr. Joanna Peris
  - Dr. Linda Strand
  - Dr. Earlene Lipowski

Women Researchers

- Dr. Janet Karlix
- Dr. Diana Goodwin
- Dr. Julie Johnson
- Dr. Almut Winterstein
- Dr. Veronika Butterweck
- Dr. Carrie Haskell-Luevano
- Dr. Teresa Kauf
- Dr. Dorette Ellis
- Dr. Rhonda Cooper-Dehoff
Dr. William H. Riffee

- Fifth dean of the College of Pharmacy
- PhD in Pharmacology
- Educational technology expert
- Entrepreneurial approaches to the educational and research enterprise
- Distance education programs implemented in many areas
- Research expands with addition of outstanding faculty.
- Additional research space through renovation of Pharmacy Wing and building of the new Pharmacy Building in the HPNP Complex.
- Increase in centers (Pharmacogenomics, Drug-Food Interaction)
- Increase in graduate students
- Planning for new research building in Orlando in association with the Burnham Institute.

Dr. Abraham Hartzema

- Perry A. Foote Eminent Scholar Chair
- UF Research Foundation Professor
- Outstanding research in pharmacoeconomics

Dr. Julie Johnson

- Chair, Department of Pharmacotherapy and Translational Research
- Ravi Chandran Professor of Pharmaceutical Sciences
- Director, Center for Pharmacogenomics
- Paul R. Dawson Biotechnology Award from AACP.
- Outstanding research in pharmacogenomics.
Where Are We Going?

- The UF College of Pharmacy is a young institution having been established in 1923.
- Great strides have been made to establish the UF College of Pharmacy as a premier research institution among colleges of pharmacy.
- Facilities have been improved and expanded, technology has been enhanced, faculty and graduate student numbers have increased, funding for research continues to rise in very competitive times, younger faculty have been added to advance the research capacity into the future.

Where Are We Going?

- New research facilities in other cities in Florida (e.g., plans ongoing for a building in Orlando).
- Expansion of research in pharmacogenomics and translational research.
- Continued enhancement of pharmacokinetic/pharmacodynamic research including more students in the PharmD/PhD track.
- Movement up the NIH ranking ladder into the top five funded colleges of pharmacy.
- Higher ranking by the UF College of Pharmacy into the top five colleges of pharmacy.
- Over 100 graduate students.
- Increase in faculty to over 70 members with a higher percentage involved in significant research.
- New drugs approved for the market to increase revenue to the UF College of Pharmacy research enterprise.

References

- William Millard
- Annual Reports for the Office of Graduate Studies and Research
- GatoRx Magazines
- Florida Pharmacy Association Journals
- A History of Pharmacy in Florida by L. G. Gramling
- Personal opinions, records and notes from being a faculty member in the UF College of Pharmacy for 37 years.

Who Are These Researchers?