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I. Executive Summary

1997 was a year of transition for the Department of Pharmacology and Toxicology. The most obvious change was the retirement of Dr. William J. Waddell as Chairman on July 1 following twenty years of outstanding leadership as Chairman of the Department of Pharmacology and Toxicology. Dr. Waddell was appointed Chairman Emeritus and was honored with a reception sponsored by the Dean’s office in November. A search committee was formed to select an individual to succeed Dr. Waddell, chaired by Dr. Russell A. Prough, Professor and Chairman of the Department of Biochemistry and Molecular Biology. Following a nationwide search, Dr. David W. Hein, Chester Fritz Distinguished Professor and Chairman of the Department of Pharmacology and Toxicology at the University of North Dakota School of Medicine and Health Sciences accepted appointment as Professor and Chairman effective August 1. Dr. Hein was also appointed a University of Louisville Distinguished University Scholar and Peter K. Knoefel Professor. Dr. Hein’s start-up package included two endowments, one funding the Peter K. Knoefel Professorship and the second funding graduate student assistantships, departmental operating expenses, and three new faculty positions.

Faculty highlights included the promotions of Dr. Frederick W. Benz and Dr. William M. Pierce, Jr., from associate professor to professor effective July 1. In addition, Dr. Walter M. Williams received the Golden Apple Award for excellence in teaching. Several faculty were successful in receipt of research grant funding, including receipt of a major NIH shared instrumentation grant by Dr. Pierce for purchase of a HPLC Electrospray Mass Spectrometer. Several Departmental core research laboratories were planned and initiated for radioisotopes, mass spectrometry, spectroscopy, tissue culture and image analysis, centrifugation and autoclave, and distilled water/ultrafreezer storage/ice machine. Renovations were completed for several of the core research laboratories, as well as Dr. Hein’s research laboratory and the Department office suite. Ethernet connections were provided to all primary faculty and the office staff.

The Department faculty held two retreats to review its mission, strategic plans, graduate program, teaching program, and policies for appointment, promotion, tenure, and periodic career review of faculty. The faculty also reviewed current policies for faculty work assignments, annual evaluations, and determination of performance-based salary increases. Following these faculty retreats, major revisions were made in a number of departmental programs and documents. Each of the following documents was initiated or underwent major revision. Each was approved by unanimous vote of the departmental faculty:

1. Departmental Mission Statement.
2. Departmental Policy for Appointment, Promotion and Tenure, and Periodic Career Review.
3. Departmental Guidelines for Appointment, Promotion and Tenure, and Periodic Career Review of Special Faculty.
4. Departmental Guidelines for Preparation of Faculty Periodic Career Review Portfolio.
5. Departmental Template for Faculty Annual Work Assignments.
6. Departmental Guidelines for Preparation of Annual Reports.
7. Departmental Faculty Teaching Evaluation Form.
The faculty discussed and planned major changes in the graduate program and the strategic plan to emphasize research excellence. The graduate program changes and a Department Strategic Plan were formally approved in 1998. Five students successfully completed the pharmacology and toxicology Ph.D. graduate program and seven new students were accepted into the program in 1997.

The faculty also established and elected five standing committees to implement the new policies and programs initiated:

1. Graduate Program Committee (Dr. Leonard C. Waite, Chair)
2. PBSI/Grievance Committee (Dr. Peter P. Rowell, Chair)
3. Teaching Evaluation Committee (Dr. Laurence A. Carr, Chair)
4. Seminar Committee (Dr. Donald E. Nerland, Chair)
5. Core Laboratories/Research Administration Committee (Dr. William Pierce, Jr., Chair)

The Chair also formed an ad hoc faculty search committee to initiate the recruitment for the three new positions. The faculty determined that the emphasis for selection would be excellence in research and research training, with priority given to research areas that complement the University of Louisville Challenge for Excellence and assist the University of Louisville in reaching Carnegie Level 1 research status.

II. Mission Statement

The Department of Pharmacology and Toxicology is committed to academic excellence and to the attainment of regional, national, and international recognition for the quality of its educational, research, and service activities. Guided by the University of Louisville Challenge for Excellence to become a preeminent metropolitan research university, the Department Strategic Plan will focus on accomplishment of five broad objectives:

- Provide instruction in pharmacology and toxicology of the highest quality for the education and preparation of medical, dental, nursing, and other health care professional students. Emphasis will be placed on the fundamental principles necessary for life-long learning and the essential knowledge required for rational, effective, and safe use of drug therapy.

- Advance biomedical knowledge through active contribution to high quality research and other scholarly activities, particularly in pharmacology and toxicology and other areas of focus within the University of Louisville Challenge for Excellence.

- Provide high quality research and educational experiences in pharmacology and toxicology for the education and training of future biomedical scientists who can provide and advance biomedical education, research, and service.

- Provide instruction of the highest quality in pharmacology and toxicology that is appropriate for students at the undergraduate, graduate, and postgraduate levels.
• Provide high quality service to the School of Medicine, the Health Sciences Center, the University, the people of Louisville and the surrounding region, the Commonwealth of Kentucky, professional organizations, the nation, and the world.

III. Personnel Listing

A. Faculty with Primary Appointments

Benz, Frederick W., Professor; Ph.D., Pharmacology, University of Iowa (1970).

Carr, Laurence A., Professor; Ph.D., Pharmacology, Michigan State University (1969).

Chen, Theresa S., Professor; Ph.D., Pharmacology, University of Louisville (1971).

Hein, David W., Peter K. Knoefel Professor and Chair; Ph.D., Pharmacology, University of Michigan (1982).

Hurst, Harrell E., Professor; Ph.D., Toxicology, University of Kentucky (1978).

Myers, Steven R., Associate Professor; Ph.D., Pharmacology, University of Kentucky (1986).

Nerland, Donald E., Professor; Ph.D., Medicinal Chemistry, University of Kansas (1974).

Pierce, William M., Jr., Professor; Ph.D., Pharmacology and Toxicology, University of Louisville (1981).

Rowell, Peter P., Professor; Ph.D., Pharmacology and Therapeutics, University of Florida (1975).

Waddell, William J., Professor and Emeritus Chair; M.D., University of North Carolina (1955).

Waite, Leonard C., Professor and Vice Chairman; Ph.D., Pharmacology, University of Missouri (1969).

Williams, Walter M., Professor; Ph.D., Pharmacology, University of Louisville (1970); M.D., University of Louisville (1974).

B. Faculty with Joint Appointments

Aronoff, George R., Professor of Medicine, and Pharmacology and Toxicology; M.D., Indiana University (1975).

Delamere, Nicholas A.; Ph.D., Professor of Ophthalmology and Visual Sciences, and Pharmacology and Toxicology; Ph.D., Membrane Physiology and Biophysics, University of East Anglia, Norwich, England (1976).
Kang, Y. James, Associate Professor of Medicine, and Pharmacology and Toxicology; Ph.D., Cell Biology and Zoology, Iowa State University (1989).

Miller, Frederick N., Professor of Physiology and Biophysics, and Pharmacology and Toxicology; Ph.D., Pharmacology, University of Cincinnati (1971).

Rodgers, George C., Jr., Professor of Pediatrics, and Pharmacology and Toxicology; Ph.D., Organic Chemistry, Yale University (1964); M.D., State University of New York (1975).

Tamburro, Carlo H., Professor of Medicine, and Pharmacology and Toxicology, and Chief, Division of Occupational Toxicology; M.D., Seton Hall (1962); M.P.H., Columbia University (1985).

Wong, John L., Professor of Chemistry, and Pharmacology and Toxicology; Ph.D., Chemistry, University of California at Berkeley (1966).

Zimmerman, Thom J., Professor and Chairman of Ophthalmology and Visual Sciences, and Pharmacology and Toxicology; Ph.D., Pharmacology, University of Florida (1976); M.D., University of Illinois (1968).

C. Faculty with Associate Appointments

Brier, Michael E., Associate Professor of Medicine; Ph.D., Industrial and Physical Pharmacy, Purdue University (1986).

Edmonds, Harvey L., Professor of Anesthesiology; Ph.D., Pharmacology, University of California at Davis (1974).

Jumblatt, James E., Professor of Ophthalmology and Visual Sciences; Ph.D., Biological Sciences, Columbia University (1975).

Lang, Calvin A., Professor of Biochemistry and Molecular Biology; Sc.D., Biochemistry and Nutrition, Johns Hopkins University (1954)

Rigor, Benjamin, Professor and Chairman of Anesthesiology; M.D., University of the East Ramon Magsaysay Memorial Medical Center (1962).

Ross, Mitchell P., Assistant Professor of Pediatrics; M.D., Oregon Health Sciences University (1985).

Schurr, Avital, Professor of Anesthesiology; Ph.D., Biochemical Pharmacology, Ben Gurion University, Beer Sheva, Israel (1977).

Sullivan, Janice, Assistant Professor of Pediatrics; M.D., University of Minnesota (1988).
D. Faculty with Emeritus Appointments

Dagirmanjian, Rose, Professor Emerita; Ph.D., University of Rochester (1960).
Huang, Kee Chang, Professor Emeritus; M.D. Columbia University (1953).
Jarboe, Charles H., Professor Emeritus; Ph.D., University of Louisville (1956).
Knoefel, Peter K., Emeritus Professor and Chairman; M.D., Harvard University (1931).
Scharff, Thomas G., Emeritus Professor; Ph.D., University of Rochester (1956).
Waddell, William J., Emeritus Chairman; M.D., University of North Carolina (1955).

E. Faculty with Adjunct Appointments

Friedman, Marvin A., Adjunct Professor of Pharmacology and Toxicology; Ph.D., Massachusetts Institute of Technology (1967).
Hayes, A. Wallace, Adjunct Professor of Pharmacology and Toxicology; Ph.D., Auburn University (1967).
Matyunas, Nancy, Adjunct Instructor of Pharmacology and Toxicology; Pharm.D., University of Utah (1983).
Nicholson, John A., Adjunct Assistant Professor of Pharmacology and Toxicology; D.M.D., University of Louisville (1979); Ph.D., University of Louisville (1968).
Woodcock, Thomas M., Adjunct Professor of Pharmacology and Toxicology; M.D., Columbia University (1970).

F. Faculty with Emeritus Adjunct Appointments

Csaky, Tihamer Z., Emeritus Adjunct Professor of Pharmacology and Toxicology; M.D., University of Budapest (1939).
Darby, Thomas D., Emeritus Adjunct Professor of Pharmacology and Toxicology; Ph.D., Medical College of South Carolina (1957).
Gordon, Helmut A., Emeritus Adjunct Professor of Pharmacology and Toxicology; M.D., University of Budapest (1932).
G. Staff

Carpenter, Sharon; Administrative Secretary

Clark, Denny, Lab Tech III; Therapeutics and Toxicology Laboratory

Corbett, Donna; Lab Tech III

Doll, Mark; Research Associate

Duggan, Deborah; Lab Tech III

Emery, Nicole; Lab Tech III

Jamison, Andrea; Lab Tech II

Marlowe, Carolyn; Research Associate

Metaxas, John; Coordinator, Therapeutics and Toxicology Laboratory

Greca, Edie; Business Manager II

Rubin-Teitel, Hedly; Program Assistant III

Smith, Ned; Lab/Research Technician III

Srinivasan, Chandrika, Ph.D., Student Assistant

Wenger, Aaron; Student Assistant, Therapeutics and Toxicology Laboratory

H. Graduate Students

Alimgozhin, Talgat; (Ph.D.)

Brewer, Bradley G.; (Ph.D.)

Cai, Jian; (Ph.D.)

Fretland, Adrian; (Ph.D.; University Fellow)

Fu, Xin; (Ph.D.)

Han, Sue (Ph.D. awarded August, 1997)

Hasselbacher, David; (M.S.)
Kreklau, Emiko; (Ph.D. awarded December, 1997)
Hennion, John; (Ph.D.)
Jacobs, Al (Chip); (Ph.D.)
Leff, Matthew; (Ph.D.)
Li, Junyu; (Ph.D.)
Li, Mary (Ph.D. awarded August, 1997)
Melo, Nicolas; (M.S.)
Payne, Scot; (Ph.D.)
Spinnato, Joe; (Ph.D.)
Srinivasan, Chandrika (Ph.D. awarded May, 1997)
Wu, Qiang (Ph.D. awarded August, 1997)

I. Postdoctoral Fellows

Meng, Xianweng
Wang, Guang-wu
Wang, Ju-Feng
Wu, Huiyun

J. Division of Occupational Toxicology

Buchanan, Stephanie, B.S.N.; Clinical Research Coordinator
Canchis, Willie, M.D.; Research Fellow
Cho, Lori; Student Assistant
Crawford, Robert; Student Assistant
Cutno, Shannon; Student Assistant
Deeb, Lililane, M.D.; Research Fellow
Fortwengler, Philip; Manager, Medical Surveillance
Hahn, Hye; Clerical Specialist III
Hall, Carl, Ph.D.; Project Coordinator
Henry, Nancy; Secretary II
Hill, Don; Student Assistant
Hiser, Melissa; Clerical Specialist III
Jackman, Maria; Executive Secretary
Jarman, Susanna; Student Assistant
Kapoor, Sandeep, M.D.; Research Fellow
Kara, Jasmine; Student Assistant
Matthews, Sherri; Executive Secretary
Miller, Barbara L., B.S.N., M.S.; Senior Clinical Research Coordinator
O’Connell, Kathleen, Ph.D.; Research Facilitator
Quiggins, Patricia, Ph.D.; Research Associate
Redferin, Lauren; Student Assistant
Reynolds, Eva; Receptionist
Reynolds, Lark; Program Assistant III
Richardson, Rita; Secretary II
Self, Jessica; Student Assistant
Sherrill, Mike; Student Assistant
Sterry, Rachel; Student Assistant
Tamburro, Carlo H., M.D, M.P.H.; Division Chief
K. Faculty and Staff Appointments

Doll, Mark A., M.S., Research Associate, September 1, 1997
Emery, Nicole, Lab Technician III, October 15, 1997
Hayes, A. Wallace, Ph.D., Adjunct Professor, October 1, 1997
Hein, David W., Ph.D., Peter K. Knoefel Professor and Chairperson, August 1, 1997
Jamison, Andrea, Lab Technician II, November 17, 1997
Srinivasan, Chandrika, Ph.D., Student Assistant, November 10, 1997
Waddell, William J., M.D., Chairman Emeritus, July 1, 1997

L. New Graduate Student Appointments

Alimozhin, Talgat
Brewer, Bradley
Fretland, Adrian
Fu, Xin
Hennion, John
Leff, Matthew
Melo, Nicolas

M. Graduations

Han, Sue (Ph.D. awarded August, 1997)
Kreklau, Emiko Hatcher (Ph.D awarded December, 1997)
Li, Mary (Ph.D. awarded May, 1997)
Srinivasan, Chandrika (Ph.D. awarded May, 1997)
Wu, Qiang (Ph.D. awarded August, 1997)
N. Periodic Career Reviews

Carr, Professor Laurence (satisfactory)

Tamburro, Professor Carlo (satisfactory)

Waite, Professor Leonard (satisfactory)

IV. Manuscripts and Book Chapters


**V. Abstracts**


Cai, J., Benz, F.W., Nerland, D.E., Li, J., Corbett, D., and Hurst, H.E.  The nonlinear dose-dependent toxicodynamics of acrylonitrile can be explained by the similar dose-dependence of its toxicokinetics.  *Proceedings of the Twenty-Third Annual Student Research Day*, University of Louisville Health Sciences Center, October, 1997.


VI. Invited Scientific Presentations and Seminars

Hein, D.W. “Acetyltransferases and genetic predisposition to cancers from aromatic and heterocyclic amines.” Department of Pharmaceutical Sciences, Wayne State University, Detroit, MI, October, 1997.

Hein, D.W. “Pharmacogenetics of N-acetyltransferases: implications for genetic predisposition to cancer from aromatic amines.” Department of Pharmacology, University of Michigan, Ann Arbor, MI, October, 1997.

Hein, D.W. “Pharmacogenetics of N-acetyltransferases: implications for genetic predisposition to cancer from aromatic and heterocyclic amine carcinogens.” Bicentennial Seminar Series, Center for Genetics and Molecular Medicine, University of Louisville Health Science Center, Louisville, KY, December, 1997.


Kang, Y.J. “Suppression of cardiac toxicity of doxorubicin in the metallothionein overexpressing heart of transgenic mice.” Plenary Lecture, the Second National Congress of Chinese Society of Toxicology, Xi’an, China, May 14, 1997.

Kang, Y.J. “Transgenic approach to cardiac protection against copper deficiency induced oxidative injury.” Multidisciplinary Graduate Program in Nutritional Sciences, University of Kentucky, Lexington, KY, February 26, 1997.

Kang, Y.J. “Experimental approaches to selective modulation of doxorubicin cardiotoxicity and drug resistance in cancerous cells.” Department of Biochemistry, University of Louisville, Louisville, KY, February 17, 1997.

Kang, Y.J. “Transgenic approach to cardiac oxidative injury and protection.” Graduate Center for Toxicology, University of Kentucky, Lexington, KY, February 10, 1997.


Kang, Y.J. “Cardiac catalase and oxidative injury.” Department of Physiology and Biophysics, University of Louisville, Louisville, KY, January 14, 1997.


Pierce, W.M., Jr. “Development of bone targeted carbonic anhydrase inhibitors for medical management of osteoporosis.” Tianjin Medical University, Tianjin, P.R. China, December, 1997.


Waddell, W.J. "Effects of environmental estrogens: epidemiological studies." Kuwait University Faculty of Medicine, Department of Pharmacology and Toxicology, March 24, 1997.

Waddell, W.J. "Epidemiological studies on the effects of environmental estrogens." Presented at the Fall Meeting of the Ohio Valley Chapter of the Society of Toxicology, November 7, 1997.


VII. Research Grants and Contracts

A. Research Grant and Contract Proposals Submitted

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<tr>
<th>Agency</th>
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<th>w/Indirect Total</th>
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<tr>
<td><strong>Dr. Frederick W. Benz</strong></td>
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<tr>
<td>Acute Acrylonitrile Intoxication: Antidotal Assessment (P.I.)</td>
<td>NIH-NIEHS</td>
<td>$105,432</td>
</tr>
<tr>
<td>Acute Acrylonitrile Intoxication: Antidotal Assessment-Suppl (P.I.)</td>
<td>NIH-NIEHS</td>
<td>$7,908</td>
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<tr>
<td><strong>Dr. Laurence A. Carr</strong></td>
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<tr>
<td>An Immunomodulatory Role for Brain Dopamine Systems (P.I.)</td>
<td>SOM Research Committee</td>
<td>$13,477</td>
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<td>Dr. Theresa S. Chen</td>
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<tr>
<td>Acute Acrylonitrile Intoxication: Antidotal Assessment (Co-I. w/Dr. Benz)</td>
<td>NIH-NIEHS</td>
<td>$105,432</td>
</tr>
<tr>
<td>Acute Acrylonitrile Intoxication: Antidotal Assessment-Suppl (Co-I. w/Dr. Benz)</td>
<td>NIH-NIEHS</td>
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<tr>
<td>Enhancement of hepatic Glutathione Synthesis on Prevention of Acetaminophen-Induced Liver Toxicity by a new Class of Drugs (Co-I. w/Dr. Williams)</td>
<td>Alliant</td>
<td>$39,751</td>
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<tr>
<td>Enhancement of Hepatic Glutathione Production (Co-I. w/Dr. Williams) – 3 years</td>
<td>NIH</td>
<td>$317,056</td>
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<tr>
<td>Pharmacogenetics of Drug and Carcinogen Metabolism (P.I.) – 5 years</td>
<td>NIH-NCI</td>
<td>$1,290,345</td>
<td>$1,859,936</td>
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<td>Metabolic Basis of Sulfonamide Toxicity in AIDs patients (P.I.) – 3 years</td>
<td>NIH-Subcontract from Wayne State</td>
<td>$55,688</td>
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<td>Louisville Environmental Prevention/Intervention Program (Co-I. w/Dr. Prough) - multiyear</td>
<td>NIH-NIEHS</td>
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<td>Pharmacogenetics of Fetal Tobacco Smoke Exposure (Co-I. w/Dr. Myers) – 3 years</td>
<td>NIH</td>
<td>$510,435</td>
<td>$729,646</td>
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<td>Acute Acrylonitrile Intoxication: Antidotal Assessment (Co-I. w/Dr. Benz)</td>
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<td>1997 WHAS Crusade for Children Drug Testing Equipment Request (P.I.)</td>
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<td><strong>Dr. Y. James Kang</strong></td>
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<td>Cardiac Metallothionein and Adriamycin Toxicity (P.I.) - multiyear</td>
<td>NIH</td>
<td>$146,824</td>
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<td>Butylated Hydroxyanisole-Mediated Hypercholesterolemia (P.I.) - multiyear</td>
<td>USDA</td>
<td>$202,232</td>
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<td>Metallothionein and Adriamycin Cardiotoxicity (P.I.) - multiyear</td>
<td>NIH</td>
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<td>Metallothionein and Myocardial Preconditioning (P.I.) - multiyear</td>
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<td>Protein Adducts as Ecological Exposure Markers; Use of GC/MS and Capillary Electrophoresis to Quantify Hemoglobin Adducts of Nitroaromatic Munitions Chemicals (P.I.)</td>
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<td>$46,270</td>
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<td>DMBA Hemoglobin Adducts (P.I.)</td>
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<td>Maternal and Fetal Exposure to Tobacco Smoke (P.I.) – 2 years</td>
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<td>$165,523</td>
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<td><strong>Dr. Donald E. Nerland</strong></td>
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<td>Acute Acrylonitrile Intoxication: Antidotal Assessment (Co-I. w/Dr. Benz)</td>
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<tr>
<td>Acute Acrylonitrile Intoxication: Antidotal Assessment-Suppl (Co-I. w/Dr. Benz)</td>
<td>NIH-NIEHS</td>
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<td><strong>Dr. William M. Pierce, Jr.</strong></td>
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<tr>
<td>Bone Targeting of Pharmaceutical Agents for Osteoporosis (P.I.)</td>
<td>KOWA</td>
<td>$255,238</td>
<td>$315,985</td>
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<td>Aging Induced Renal Dysfunction: G Protein Activity (Co-I. w/Dr. John Passmore- multiyear)</td>
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<td>Riverine Food Webs and Their Roles in Contaminant Transport (Co-I. w/Dr. Bukaveckas) - multiyear</td>
<td>EPA-EPSCoR</td>
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<td><strong>Dr. Peter P. Rowell</strong></td>
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<td>Functional Activity of Presynaptic Nicotinic Receptors (P.I.)</td>
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<td>Bone Targeting of Pharmaceutical Agents for Osteoporosis (Co-I. w/Dr. Pierce)</td>
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<td>Enhancement of Hepatic Glutathione Synthesis and Prevention of Acetaminophen-Induced Liver Toxicity by a New Class of Drugs (γ-glutamyl cysteine precursors) (P.I.)</td>
<td>Alliant</td>
<td>$39,751</td>
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<td>Enhancement of Hepatic Glutathione Production (P.I.) – 3 years</td>
<td>NIH</td>
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## B. Research Grants and Contracts in Force

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<th>Agency</th>
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<td><strong>Dr. Frederick W. Benz</strong></td>
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<tr>
<td>Acute Acrylonitrile Intoxication: Antidotal Assessment (P.I.)</td>
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<td><strong>Dr. Theresa S. Chen</strong></td>
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<tr>
<td>Acute Acrylonitrile Intoxication: Antidotal Assessment (Co-I. w/Dr. Benz)</td>
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<td>Acute Acrylonitrile Intoxication: Antidotal Assessment-Suppl (Co-I. w/Dr. Benz)</td>
<td>NIH-NIEHS</td>
<td>$7,908</td>
<td>$7,908</td>
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<tr>
<td>Glutathione Status and Lipid Peroxidation in Chronic Toxicity (P.I.)</td>
<td>ULCHES-NIEHS</td>
<td>$16,000</td>
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<tr>
<td><strong>Dr. David W. Hein</strong></td>
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<td>Pharmacogenetics of Drug and Carcinogen Metabolism (P.I.) – 5 years</td>
<td>NIH-NCI</td>
<td>$1,290,345</td>
<td>$1,859,936</td>
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<td>Metabolic Basis of Sulfonamide Toxicity in AIDS patients (P.I. on subproject) – 3 years</td>
<td>NIH-Subcontract from Wayne State</td>
<td>$55,688</td>
<td>$80,349</td>
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<tr>
<td><strong>Dr. Harrell E. Hurst</strong></td>
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<tr>
<td>Acute Acrylonitrile Intoxication: Antidotal Assessment-Suppl (Co-I. w/Dr. Benz)</td>
<td>NIH-NIEHS</td>
<td>$103,930</td>
<td>$150,699</td>
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<tr>
<td>Acrylonitrile Biomonitoring: Model Chemical Biomarkers II (P.I.)</td>
<td>ULCEHS-NIEHS</td>
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<tr>
<td>Project Description</td>
<td>Agency</td>
<td>Direct</td>
<td>w/Indirect Total</td>
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<td>Environmental Hazards to Reproductive Health (Co-I. w/Dr. Hendler) – 3 years</td>
<td>VA</td>
<td>$949,100</td>
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<td>1997 WHAS Crusade for Children Drug Testing Equipment (P.I.)</td>
<td>WHAS</td>
<td>$80,000</td>
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<td>UofL NIEHS Developmental Center Grant (Co-I. w/Dr. Prough) – 3 years</td>
<td>NIH-NIEHS</td>
<td>$525,000</td>
<td>$763,326</td>
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<td>HPLC Electrospray Mass Spectrometer (Co-I. w/Dr. Pierce)</td>
<td>NIH-NCI</td>
<td>$307,954</td>
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<td>Agreement for Drug Screening</td>
<td>UofL Athletics Association</td>
<td>$37,500</td>
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<td><strong>Dr. Y. James Kang</strong></td>
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<td>Effect of Catalase on Adriamycin Cardiotoxicity (P.I.) – multiyear</td>
<td>NIH-NCI</td>
<td>$168,671</td>
<td>$244,573</td>
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<td>Suppression of Cardiac Ischemia-Reperfusion Injury by Over-expression of Metallothionein (P.I.) – 3 years</td>
<td>AHA</td>
<td>$272,925</td>
<td>$298,200</td>
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<td>The Role of Catalase in Protection Against Copper Deficiency-Induced Heart Damage in Transgenic Mice – multiyear</td>
<td>USDA</td>
<td>$94,493</td>
<td>$106,253</td>
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<td><strong>Dr. Steven R. Myers</strong></td>
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<td>Protein Adducts as Ecological Exposure Markers: Use of GC/MS and Capillary Electrophoresis to Quantify Hemoglobin Adducts of Nitroaromatic Munitions Chemicals (P.I.)</td>
<td>USEPA</td>
<td>$46,270</td>
<td>$49,972</td>
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<td>Hemoglobin Adducts of 7,12-dimethylbenz(a)anthracene (DMBA) (P.I.)</td>
<td>NCI-McKesson</td>
<td>$15,751</td>
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<td>Project Description</td>
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<td>In Utero and Postnatal Tobacco Smoke Exposure and its Effects on Infant Lung Function and Respiratory Illness (Co-I. w/Dr. Ross) – 3 years</td>
<td>Alliant</td>
<td>$203,890</td>
<td>$203,890</td>
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<tr>
<td><strong>Dr. Donald E. Nerland</strong></td>
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<tr>
<td><strong>Dr. William M. Pierce, Jr.</strong></td>
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<tr>
<td>Bone Targeting of Pharmaceutical Agents for Osteoporosis (P.I.)</td>
<td>KOWA</td>
<td>$255,238</td>
<td>$319,985</td>
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<tr>
<td>HPLC Electrospray Mass Spectrometer (P.I.)</td>
<td>NIH</td>
<td>$307,954</td>
<td>$307,954</td>
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<td>Blood Lead Monitoring (P.I.)</td>
<td>Regional Practitioners</td>
<td>$21,637</td>
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<td>Combinatorial Libraries of Bisphosphonates for Osteoporosis (Co-I. w/Dr. Taylor)</td>
<td>UofL Research on Women Program</td>
<td>$3,000</td>
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<td><strong>Dr. Peter P. Rowell</strong></td>
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<td>Functional Activity of Presynaptic Nicotinic Receptors (P.I.)</td>
<td>NIH</td>
<td>$59,413</td>
<td>$86,149</td>
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<tr>
<td><strong>Dr. Leonard C. Waite</strong></td>
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<tr>
<td>Bone Targeting of Pharmaceutical Agents for Osteoporosis (Co-I. w/Dr. Pierce)</td>
<td>KOWA</td>
<td>$255,238</td>
<td>$315,985</td>
</tr>
</tbody>
</table>
VIII. Summary of Teaching Activities

A. School of Medicine

The Department team-taught the Medical Pharmacology course to second year medical students. Dr. Laurence Carr served as course director. Individual faculty contributions are identified in the Appendix.

B. School of Dentistry

The Department team-taught the Dental Pharmacology and Therapeutics course to second year dental students. Dr. Leonard Waite served as course director. Individual faculty contributions are identified in the Appendix.

C. School of Nursing

The Department team-taught a Basic Pharmacology for Nursing course to second year nursing students. Dr. William Pierce served as course director. Individual faculty contributions are identified in the Appendix.

The Department team-taught an Advanced Pharmacology course to graduate nursing students. Dr. Leonard Waite served as course director. Individual faculty contributions are identified in the Appendix.

D. School of Allied Health

The Department team-taught a Pharmacology course to second year students in the Dental Hygiene Program. Dr. Leonard Waite served as course director. Individual faculty contributions are identified in the Appendix.

E. Graduate School

The Department team-taught several courses for graduate students. The individual courses and course directors were as follows:

Principles of Drug Action (Dr. Frederick Benz)
Research Methods (Dr. William Pierce)
Pharmacology Seminar (Dr. Donald Nerland)
Toxicology (Dr. Harrell Hurst)

Individual faculty contributions to these courses are identified in the Appendix.
Five graduate students completed the graduate program in 1997. Their names, degrees and faculty advisors are:

Chandrika Srinivasan (Ph.D. awarded May, 1997; Mentor: Dr. Theresa Chen)
Sue Han (Ph.D. awarded August, 1997; Mentor: Dr. Laurence Carr)
Mary Li (Ph.D. awarded August, 1997; Mentor: Dr. Avital Schurr)
Qiang Wu (Ph.D. awarded August, 1997; Mentor: Dr. William Pierce)
Emiko Hatcher Kreklau (Ph.D. awarded December, 1997; Mentor: Dr. James Kang)

Individual faculty served on a number of graduate student committees as identified in the Appendix.

IX. Summary of Service Activities

Faculty provided service to the Department, the School of Medicine, the University of Louisville, the profession, the nation, and the community in many ways. Individual faculty service activities are identified in the Appendix.

X. Honors and Awards

1. David W. Hein was appointed Distinguished University Scholar at the University of Louisville and Distinguished Visiting Professor at the University of North Dakota.

2. Walter M. Williams received the Golden Apple Award for Teaching by the University of Louisville School of Medicine, Class of 1999.

3. William J. Waddell was appointed Chairman Emeritus.

XI. Appendix

Individual reports for all primary and salaried faculty members are attached.