# Table of Contents

**Introduction**  .................................................................................................................. 3

**A Sampling of Creighton University’s Research Endeavors**  .................................................. 4

- Center for Health Policy and Ethics  .................................................................................. 4
- College of Arts and Sciences  ............................................................................................ 5
  - Department of Chemistry  .............................................................................................. 5
  - Department of Philosophy  ............................................................................................. 6
  - Department of Sociology and Anthropology  ................................................................... 8
- The Jesuit Community  ...................................................................................................... 9
- School of Medicine  ........................................................................................................ 10
  - Department of Biomedical Sciences  .............................................................................. 10
  - Department of Medical Microbiology and Immunology ............................................... 15
  - Department of Medicine: Division of Cardiology  ......................................................... 18
- School of Pharmacy and Health Professions  ................................................................... 20
  - Research and Service Activities  .................................................................................. 20
  - Department of Occupational Therapy  ........................................................................ 23
  - Department of Pharmacy Practice  ................................................................................ 24
  - Department of Pharmacy Sciences  ............................................................................... 24
  - Department of Physical Therapy  .................................................................................. 25

**Publications**  ................................................................................................................... 27

- College of Arts and Sciences  ........................................................................................... 27
- College of Business Administration  .................................................................................. 39
- School of Dentistry  ......................................................................................................... 41
- School of Law  .................................................................................................................. 42
- School of Medicine  ......................................................................................................... 43
- School of Nursing  ............................................................................................................ 74
- School of Pharmacy and Health Professions  ................................................................... 75
- Other University Publications  ......................................................................................... 81

**Grants**  ............................................................................................................................. 83

- College of Arts and Sciences  .......................................................................................... 83
- School of Dentistry  ......................................................................................................... 84
- School of Law  .................................................................................................................. 85
- School of Medicine  ......................................................................................................... 85
- School of Nursing  ............................................................................................................ 99
- School of Pharmacy and Health Professions  ................................................................... 100
- Other Creighton Grants  ................................................................................................. 102

**Theses and Dissertations**  ................................................................................................ 103

- August 2005  .................................................................................................................... 103
- December 2005  .............................................................................................................. 103
- May 2006  ........................................................................................................................ 103

**Faculty Index**  .................................................................................................................. 104

**Illustrations**  ................................................................................................................... 109

**Acknowledgments**  .......................................................................................................... 109
Introduction

There is indeed a symbiotic relationship between quality teaching and research. Faculty must be active scholars, contributing to the advancement of their disciplines and to our common fund of knowledge. Creighton has been and must continue to be a place that fosters research, scholarly publication, and the pursuit of truth in all of its expressions. Like quality teaching, trend-setting research must be acknowledged and rewarded.

President, Fr. John Schlegel, S.J.
Inaugural address, September 15, 2000.

The Faculty Bibliography is produced annually by Creighton University’s Graduate School. The bibliography, now in its fifteen year, documents the scholarly accomplishments of the University community for the 2005-2006 academic year. The bibliography includes reports from various units on campus (departments, centers, or offices) that highlight the broad range of research and scholarly activity across the campus. These reports are followed by a listing of the scholarly accomplishments of Creighton faculty, including peer-reviewed articles, book chapters, and books; funded grants; and student dissertations and theses. The bibliography does not include papers in press or abstracts of professional presentations at local, regional, national or international meetings.

The contributions in this bibliography demonstrate the diversity and broad application of scholarship across the Creighton campus from the traditional scholarship of discovery to scholarly work of application, integration, engagement, and teaching and learning. There is strong evidence that Creighton faculty are committed teacher-scholars and true stewards of their disciplines.

As described in the working paper, “Cardoner at Creighton: The Vocation of Scholarship at Creighton” (2005), the life of scholarship is a life of service.

To pursue the truth wherever it leads requires obedience, humility, and the willingness to sacrifice one’s personal interests. This life is not lived in isolation, but in community. Scholarship serves the human community by contributing to others’ physical, affective and spiritual welfare. Scholarship serves the intellectual community by enhancing or enabling further understanding of enactment of the truth. Scholarship thus serves the entire university community, which flourishes through discovering and enacting the truth, processes that include initiating students into the life of scholarship.

This year, with the help of Richard Jizba and his reference staff at the Health Sciences Library, we experimented with various data mining techniques and the reference database software, RefWorks, to gather and produce a more complete listing of all faculty publications. A very special thanks to Lauren Petit, who has been the “copy and production editor” for this bibliography for the last ten years. Her skill, creativity and incredible patience are essential elements in the successful completion of this project.

Gail M. Jensen, Ph.D.
Associate Vice President for Faculty Development and Graduate School Dean
A Sampling of Creighton University’s Research Endeavors

Center for Health Policy and Ethics

The Center for Health Policy and Ethics is a multidisciplinary group of scholars dedicated to the study and teaching of ethical dimensions of health care and health policy. Scholarship at the Center for Health Policy and Ethics responds to the challenge of ethical issues raised by the health care system, increasingly complex patient care, and public health problems. The multidisciplinary nature of the Center for Health Policy and Ethics encourages a variety of perspectives and resources for topics of scholarly inquiry, conceptual analysis, and discussion. The research interests of the faculty of the Center range from individual ethical concerns such as clinical decisions involving patients and families to societal ethical and policy concerns such as health disparities and reform of health delivery models on a local and international basis.

Areas of sustained research are:

- Ethical issues at the end of life, palliative care, and chronicity;
- Issues of justice especially those dealing with health disparities and those marginalized in the health care system; and
- Disciplinary focus on teaching professional ethics and clinical ethical issues.

Key examples of the outcomes of multidisciplinary seminars and conferences in health policy and ethics are the following edited books produced by the Center faculty.

- The multi-authored book, *Educating for Moral Action: A Sourcebook in Health and Rehabilitation Ethics* (editors: Ruth Purtilo, PhD; Gail Jensen, PhD; and Charlotte Royeen, PhD) was published by F. A. Davis in 2005, with Amy Haddad, PhD, Director of the Center, and Linda Franck, PhD, Center Faculty Affiliate, as contributors and received the 2006 Alpha Sigma Nu Book Award.

- Following an international conference on dental ethics held at Creighton University in 2003 and an NIDCR-sponsored grant on oral health disparities (2002-2005), Jos Welie, PhD, Center faculty, edited a book entitled *Justice in Oral Health Care: Ethical and Educational Perspectives*, which was published in 2006 by Marquette University Press.

- In 2005, Amy Haddad, PhD, Director of the Center, and Gail Jensen, PhD, Center Faculty Associate, co-edited a special issue of the *Journal of Physical Therapy Education* entitled “Scholarship of Teaching and Learning in Physical Therapy,” which included contributions from physical therapy educators and Carnegie scholars from across the United States.

Issues of health policy and ethics will continue to demand scholarly inquiry and public attention. Critical concerns about ethics education will require closer examination of student learning and outcomes. The health care system will continue to develop, and these changes will inevitably lead to new moral considerations. Faculty at the Center will continue to make important contributions in these challenging areas and direct attention to issues and concerns that align with the Center’s mission as they have done significantly in the past.

For additional information about the Center for Health Policy and Ethics, visit the Center’s webpage at: [http://chpe.creighton.edu](http://chpe.creighton.edu).
College of Arts and Sciences

Department of Chemistry

The Chemistry Department at Creighton University has a broad range of research projects, all of which involve undergraduate students. Please see the descriptions below of individual faculty member's research interests.

Dr. Bruce Mattson is currently interested in developing and establishing safe and convenient methods for generating and manipulating small samples of gases for classroom demonstrations, laboratory experiments, and study. Along with undergraduate students performing the research, Dr. Mattson has developed classroom demonstrations and laboratory activities suitable for use at a variety of levels ranging from the middle school- and high school-levels through university-level freshmen chemistry students and chemistry majors taking descriptive inorganic chemistry. The results of this work have been published in a series of articles in *Chem13 News*, the *Journal of Chemical Education* and in two books. All together, more than 150 experiments have been devised for a variety of gases including CO₂, H₂, O₂, N₂, NH₃, NOX, C₂H₂, H₂S, SO₂, Cl₂, HCl, CO, C₂H₄, CH₄, and N₂O.

Dr. Julie Soukup's laboratory has an interest in nucleic acid structure and function. The lab is investigating both natural and *in vitro* selected RNA and DNA molecules. Utilizing Nucleotide Analog Interference Mapping (NAIM) and Nucleotide Analog Interference Suppression (NAIS), Dr. Soukup is investigating the important functional groups within ribozymes, deoxyribozymes, and riboswitches that are needed for the activity of these molecules. Her recent work on riboswitches is a new direction for the lab. The recently discovered RNA elements termed riboswitches control the metabolic state of microorganisms (such as *Bacillus anthrax*, a pertinent bioterror threat) by directly binding metabolites and regulating gene expression of essential metabolic pathways. A novel catalytic riboswitch has been identified, and it undergoes self-cleavage in the presence of the metabolite glucosamine-6-phosphate. The Soukup laboratory has elucidated some of the mechanistic details of metabolite binding and self-cleavage of the RNA. In addition, they have designed a technique to study interactions between the catalytic riboswitch and its metabolite in the hopes of being able to design non-natural metabolites as potential antibiotics. Studies on a number of riboswitches are ongoing in her laboratory.

Dr. Mark Freitag's research focuses on theoretical and applied quantum chemistry. Theoretical quantum chemistry is the development of new methods of quantum chemical evaluation. In this area, Dr. Freitag has developed a method to quickly calculate the nuclear magnetic resonance (NMR) chemical shifts of nuclei in the presence of a discrete solvent potential. Basically, he is trying to predict chemical shifts in solution. He models the interactions of the solvent using the Effective Fragment Potential method. These theoretical methods have recently been incorporated into the quantum chemistry package GAMESS.

Dr. James Fletcher's research is based on the design, synthesis, and analysis of interesting organic and organometallic molecules. This work often draws upon a wide range of the traditional areas of chemistry, including organic and organometallic syntheses, physical organic analysis, bioorganic chemistry, and combinatorial chemistry. Currently, active projects include the design, synthesis, and analysis of organic compounds that display permanent and prescribed three-dimensional shapes, the creation of new organometallic ligands using common bioorganic chemical reactions and transition metal complexes, and the development of new peptide-containing aromatic molecules capable of serving as fluorescent chemosensors.

Dr. Erin Gross's research interests involve the combination of electrochemical and spectroscopic analytical techniques to study chemiluminescent reactions. Ultimately, Dr. Gross would like to perform chemical analysis on a microchip. This would involve the separation, identification, and quantitation of an analyte mixture via capillary electrophoresis with chemiluminescent detection on a microchip. The first analytes Dr. Gross is studying are a class of antibiotics called fluoroquinolones which are used to treat infections in both humans and animals.

Dr. Stephen Gross's research focuses on three different areas of polymer chemistry:
The development of ionic liquid-containing composites for use in advanced energy conversion applications (e.g., lithium polymer batteries, solar cells);

In collaboration with Dr. Mark A. Latta and Dr. R. Scott Shaddy at the Creighton School of Dentistry, the adhesion of resin modified glass ionomer cements to dentin and also the development of new composites with dental applications; and

In collaboration with Dr. Somnath Singh in the School of Pharmacy and Health Professions, the synthesis of polymers that can be used for subcutaneous drug delivery.

Dr. Marty Hulce’s laboratory specializes in synthetic organic chemistry, investigating new methods to prepare carbon-carbon bonds, and the creation of novel structural motifs. Exploiting the power techniques of modern metalloorganic chemistry, students in his laboratory currently are exploring:

- The synthesis and reactions of mixed hybridization state, conjugated systems with unique topologies that interfere with tumor cell growth;
- The synthesis of modified amino acids used to build bioactive peptides that can augment bioactivity relative to the unmodified peptide;
- Peptidomimetic synthesis, especially as it applies to cholecystokinin and neuropeptide Y2 receptor antagonists;
- Greener approaches to amide bond synthesis;
- Beneficial chemical modifications of the outermost layer of the skin; and
- Direct observation of singlet oxygen by nuclear magnetic resonance.

Department of Philosophy

J. J. Abrams has edited a volume on The Philosophy of Stanley Kubrick, published by University of Kentucky Press (2006). He also has contributed chapters to several other volumes (some forthcoming) on philosophy and film; these focus respectively on the Noir and Neo-Noir genres, Science Fiction, and the work of Martin Scorsese. In addition, he continues to work on topics in biotechnology, ethics, and semiotics.

Michael Brown continues to write pieces on philosophy in the literature of the American West. His current principal focus is “Awash in Maclean’s River,” an essay that is to anchor his projected volume, a Companion to Maclean’s “A River Runs Through It.”

Jack Carlson has completed revisions for his textbook, Understanding Our Being: An Introduction to Speculative Philosophy, to be published by The Catholic University of America Press. In preparation is a companion volume, Achieving the Good: An Introduction to Moral Philosophy and Ethics. His Words of Wisdom: A Philosophical Dictionary currently is under review. Also in preparation is an anthology of the writings of Yves R. Simon, co-edited with Anthony Simon.

Elizabeth Cooke’s research focuses on the philosophy of science and on American Pragmatism. During 2006, she participated in American Philosophical Association panel discussions on William James and John Dewey; she also published her book, Peirce’s Pragmatic Theory of Inquiry: Fallibilism and Indeterminacy, with Continuum Press (Bristol, England).

Randy Feezell pursues interests in moral philosophy, the philosophy of religion, and the philosophy of sport. An article on “Religious Ambiguity and Wagering on God” currently is under review. He serves as an editor and reviewer for the Journal of the Philosophy of Sport. His book Sport, Play, and Ethical Reflection (University of Illinois Press, 2004) last year was recognized as an Outstanding Academic Title by Choice magazine.

Kevin Graham has presented numerous papers on the philosophy of race, most recently “Beyond the Pale: Irish-Americans on the Margins of Whiteness, 1840-1960” at the Twenty-Third International Social Philosophy Conference in Victoria, Canada. He is at work on a book incorporating several of his papers, as well as new material, to be titled Thinking Race, Conceiving Justice.

Jeff Hause serves as co-editor of the Hackett Publishing Company series of translations and commentaries (one of which he himself is preparing) on the philosophical works of Thomas Aquinas. His current research focuses on moral psychology, with three articles on Aquinas’s accounts of moral virtue and voluntariness forthcoming. Additionally, he contributes encyclopedia articles on Medieval figures, most recently one on Duns Scotus for the Internet Encyclopedia of Philosophy.

Andy Jaspers, SJ, gave a paper on the philosophy of nature at the 2006 American Maritain Association meeting. In addition, he developed several of the diagrams that will appear in Jack Carlson’s book, noted above. Currently, he is pursuing the relationship between Jacques Maritain’s account of degrees of abstraction and Einstein’s special theory of relativity.

Judith Kissell pursues issues in biomedical and research ethics. She serves on the editorial boards of Theoretical Medicine and Bioethics and the Journal of Medicine and Humanities. With colleagues from the Center for Health Policy and Ethics, she published an essay, “Promoting Cultural Proficiency in Researchers to Enhance Recruitment and Participation of Minority Populations in Research,” in Evaluation and Program Planning (May, 2006).

Patrick Murray continues his participation in the International Symposium on Marxian Theory. Papers recently presented to this and other scholarly societies are being prepared for publication as The Mismeasure of Wealth: Essays on Marx and Social Form. In addition, with Jeanne Schuler he has co-authored a chapter on “Stanley Kubrick on the Banality of the Good” for J. J. Abrams’s volume devoted to the work of Kubrick (see information above), and an article on “Marx, Subjectivism, and Modern Moral Philosophy” forthcoming in The Modern Schoolman.

Jeanne Schuler, in addition to the collaborative efforts just noted, is preparing for her 2007-2008 sabbatical year, during which she will finish work on a book manuscript (also a joint effort with Patrick Murray) titled False Moves: Basic Problems with Philosophy.

Gene Selk continues to pursue dual interests in science and religion and in aesthetics. A frequent book reviewer, he also since 2001 has presented papers at the annual meetings of the National Conference on Liberal Arts and the Education of Artists in New York City, most recently (2006) on “Modernism and the End of Art.” These papers he is preparing to gather together for publication in a volume on aesthetics.


Amy Wendling pursues topics in social philosophy, including gender issues, as well as in Marx studies. Her “The Dignity of Labor?: A Marxist Challenge to Traditional Marxism” appeared in International Studies in Philosophy (October, 2006). Recent conference presentations on “Rough, Foul-Mouthed Boys” (a study of male perceptions of female bodies in the work environment) and “The Speed of Production: Charles Babbage’s Influence on Karl Marx” presently are being prepared for publication.
Dick White has completed the manuscript for his third single-author book, *Radical Virtues*; it currently is under review. Revised versions of two prior essays, “Friendship and Commitment” and “The Future of Romantic Love,” will be anthologized in a forthcoming volume of best papers presented at The Society for the Philosophy of Sex and Love (see information under Stephens above).

Jinmei Yuan continues to publish in both philosophy (especially comparative logic) and original fiction and essays. In addition to recent articles on the structure of Chinese logic, she is preparing a manuscript on Ludwig Wittgenstein’s philosophy of logic for Tongxin Press in Beijing. Her essay “Unforgotten Stories About Yangzi River” was selected for inclusion in two recent anthologies, and two of her short stories (“Spring” and “Pieces of Soul”) have appeared in a *Collection of Overseas Female Writers*, published by Taibai Literature Press in Sichuan, China.

**Department of Sociology and Anthropology**

James Ault is researching the relative effectiveness of electronic personal response systems (PRS) in the process of engaging all of the students in a course actively and critically, encouraging collaborative work, communicating high expectations, providing prompt feedback, and increasing time on task compared to traditional paper and pencil tools in achieving those goals. He is also in the sixth year of a project to evaluate the relative reliability of surveys of student opinion about faculty effectiveness in classroom settings.

Roger Bergman is researching and writing a book to be titled *Catholic Social Learning: How to Educate the Faith that Does Justice*, based on his experience as a reflective practitioner of justice education in various faith-related settings, his awareness of the need for reflection on Catholic social pedagogy, and his own work as the founding director of the Justice and Peace Studies Program at Creighton University and his commitment to justice in Jesuit higher education.

Raymond Bucko, SJ, continues to research the ethnographic collection at the Buechel Memorial Lakota Museum in St. Francis, South Dakota. In addition, he is researching new museum displays for the Encounter Center in Sioux City, Iowa. He is also doing preparatory research for two journal articles with his *hunka* (sister by adoption), Candy Iron Cloud, on Lakota health issues for the *Southern Medical Journal*. He is finishing editing a paper on Lakota games for *Montana Magazine*.

Jerry Clark continues to conduct research for the Montgomery County Historical Society. He is currently conducting background research for an exhibit on the history of the Murphy Calendar Company of Red Oak, Iowa, including constructing fifty-eight feet of exhibits, creating a display of original machinery and work done by the company, writing a script and selecting photography for an eleven minute video about the company, and conducting several interviews of past company employees and executives. Previously, he updated an exhibit on the history of the Vermeer Manufacturing Company in Pella, Iowa.

Barbara Dilly is focusing her research on *The Social and Cultural Transformations of “The Farmer’s Daughter.”* Her manuscript examines popular culture images of this American agricultural icon to understand the relationships between farmers and their daughters and between farmers’ daughters and the American public in the popular imagination. She is also revising an ethnological study on role of religion in sustaining three German-American farming communities in Northeast Iowa. It examines the relationship between theology and spatial organization in defining different economic adaptations to the changing agricultural economy.

Charles Harper is revising a textbook now entering its fourth edition: *Environment and Society: Human Issues on Environmental Issues*. In addition, he is doing research about the social and cultural dimensions of globalization, as part of preparing the department’s senior capstone seminar. In the coming months, he will begin revising another publication, *Food, Society and Environment*.

Rebecca Murray is working with the Juvenile Justice Institute to research and develop a recidivism reduction center for the Omaha metropolitan area, preparing research on the Nebraska’s sex offender risk assessment instrument, and specific risk for sex offender recidivism for rural and urban
populations. She is currently researching the effects of schools on neighborhood crime, as well. She is also engaged in a project with student Kristin Czerminger which studies the environmental and social effects of structural/property problems such as abandoned or dilapidated residences or buildings within Omaha.

Lisa Riley is currently involved in several evaluation and research projects. As part of the Center for Marriage and Family, she is completing the evaluation of the Nebraska Healthy Marriage Initiative (NHMI) and the Helping Every Adult Reveal the Truth about Sexuality (HEARTS/Corazones) and the Love, Sex, & Media/Amor, Sexo y Comunicacion Program. She is evaluating the Healthy Alternatives for Little Ones (HALO), which helps children aged three to six to understand the complexities of “health” and “healthy choices.” Finally, she is researching issues concerned with organic foods.

The Jesuit Community

The Jesuit Community at Creighton University consists of forty-six priests, four brothers, and one scholastic. Sixteen members of the Community teach, and six hold administrative positions within the University. Seven Jesuits serve as chaplains – four to the Creighton’s professionals schools and three to Creighton University Medical Center-St. Joseph Hospital. Still other members live and work in parishes in the Omaha metro area, as well as in nearby rural communities.

At the heart of the Jesuit Order is education. Among Creighton’s Jesuits, the tradition of scholarship is rich, the scope of their interests broad and varied.

Raymond Bucko, SJ, continues to research the ethnographic collection at the Buechel Memorial Lakota Museum in St. Francis, South Dakota. In addition, he is researching new museum displays for the Encounter Center in Sioux City, Iowa. He is also doing preparatory research for two journal articles with his hunka (sister by adoption), Candy Iron Cloud, on Lakota health issues for the Southern Medical Journal. He is finishing editing a paper on Lakota games for Montana Magazine.

Gregory Carlson, SJ, continues to do research for the expansion of the Carlson Fable Collection in the Reinert-Alumni Memorial Library.

Don Doll, SJ, is busy reviewing his own photographs, carefully cataloging a lifetime of work. He is also researching photographic stories in Columbia and Ecuador in collaboration with Brad Reynolds, SJ.

Dennis Hamm, SJ, is studying the use of the Greek Bible in early Christian writings, particularly in the Gospel of Luke. He continues to probe the interface between faith and politics in the Roman Catholic tradition, especially in current discourse about the common good.

William Harmless, SJ, is finishing a new 200-page book, Mystics: An Introduction, for Oxford University Press. It is the culmination of four years of research and writing. He has also been involved in editing the English version of Hubertus Drobnier’s The Fathers of the Church: A Comprehensive Introduction, a major 700-page reference work to be published by Hendrickson this fall. He is about one-third of the way through compiling a new one-volume anthology of the writings of St. Augustine.

Richard Hauser, SJ, Rector of the Creighton Jesuit Community, has been invited to submit an article to the 2008 Merton Annual. His research for this article compares spiritualities of Thomas Merton and Ignatius Loyola, and he explains how his own understanding of Ignatius was enhanced by Merton.

Andrew Jaspers, SJ, is studying the relationship between Einstein’s special relativity and Maritain’s degrees of abstraction in the philosophy of nature.

Charles Jurgensmeier, SJ, is focusing his research on the collaboration between Salomon Sulzer and Franz Schubert, as well as researching the Magnificat settings of Valentin Rathgeber, OSB, an eighteenth-century German composer.
Charles Kestermeier, SJ, continues updating his on-line bibliography on the modern French author Raymond Queneau. The entirety of the work will soon be transferred to the site of the library of the University of Burgundy in Dijon, along with Fr. Kestermeier’s library and archives on Queneau.

Roc O’Connor, SJ, is working on a book manuscript that describes the current state of the liturgy in the Catholic Church and offers two complementary approaches intended to foster “full, active, and conscious participation” at the liturgy. He also continues to compose liturgical music for the Catholic Church.

**School of Medicine**

**Department of Biomedical Sciences**

**Research Overview**

Some examples of the wide variety of research specialties of the faculty are: design and chemical synthesis of analogs of regulatory peptides; the role of peptides in the regulation of gastrointestinal and cardiovascular functions and of bone growth and development; the molecular evolution of peptide hormones; the role of proteolytic enzymes in the biosynthesis of peptide hormones; nucleic acid catalysis and molecular engineering; the molecular biology of collagen synthesis; the regulation of gene expression and molecular diagnostics; the cellular and genetic basis for differentiation of the brain, inner ear, and cardiovascular system; comparative neuroanatomy; cellular mechanics; intracellular electrophysiology; and respiratory mechanics and control. The research is supported by facilities, including cores for bioimaging, structural bioinformatics, proteomics, genomics, and molecular diagnostics. The department encourages collaborative research interaction with faculty in the Departments of Pharmacology, Medical Microbiology and Immunology, Medicine, and Surgery; the Osteoporosis Research Center; the Boys Town National Research Hospital; the University of Nebraska Medical Center; and the Veterans Administration Medical Center.

**Skin Cancer**

The largest organ in the body, the skin, functions as a major sensory organ and protects the body from exogenous insults. Dr. Laura Hansen’s research examines the role of a family of receptor tyrosine kinases in the skin during development and in skin carcinogenesis in response to solar radiation. Members of this receptor tyrosine kinase family include the epidermal growth factor receptor and erbB2/ner, which regulate cell survival, migration, and proliferation. Dr. Hansen is investigating the mechanisms of non-melanoma skin cancer development by focusing on the role of erbB2 and the epidermal growth factor receptor in this process. Since non-melanoma skin cancer is the most common form of cancer in the United States, with more than one million new cases diagnosed per year nationwide, this research may have important implications for human health. **Faculty: Laura Hansen, PhD.**

**Comparative Ion Transport**

Research on the ion transport mechanisms that underlie the adaptation of organisms to their environment focuses on the role and regulation of the sodium/hydrogen exchange proteins in yellow fever mosquitoes and the sodium/potassium ATPase in Antarctic fish. Both projects are aimed at identifying the mechanisms of ion transport responsible for the adaptation, including physiological, biochemical, and anatomical measurements; regulation of the ion transport mechanisms by primary and secondary messengers, including analysis of intracellular cAMP, calcium, and pH; and molecular basis for the regulation the ion transporter of interest, including cloning and sequencing of cDNA, mRNA, and protein expression studies. **Faculty: David Petzel, PhD.**
**Airway Hyperresponsiveness**

Research on mechanisms on airway hyperirritability is focused on whether C-fiber endings in reactive airways become hyperirritable, using single nerve fiber monitoring of sensory receptors in airway and parenchyma of small animals. The involvement of neuropeptides in the response of the hyperirritable airway is examined using whole animal nerve recording *in vivo* and tracheal smooth muscle strips. The pulmonary research also includes pharmacological evaluation of possible therapeutic agents for asthma using whole-body plethysmograph, isolated airway smooth muscle preparations to measure the protection and reversal of airway mediator induced contraction. Changes in reflex control of ventilation and pulmonary sensory receptors of the airway and lung parenchyma during the progression of disease of the lung are also studied.

*Faculty: Dale Bergren, PhD.*

**Cardiac Development**

Congenital heart defects are the most common life-threatening birth defects that are many times accompanied by craniofacial anomalies. Investigators are studying the role of cell-cell and cell-extracellular matrix interactions during normal craniofacial and cardiac development, particularly with regard to neural crest morphogenesis and migration (cells pivotal in the development of both the face and heart). Studies using *in situ* hybridization, immunocytochemistry, gene misexpression, tissue culture, enzyme assays, and time-lapse imaging show growth factors, proteases, and protease inhibitors are important overseers of neural crest cell formation and migration. Investigation into the effects of elevated homocysteine on neural crest morphogenesis and mechanisms responsible for folic acid's protective effect during cardiovascular and craniofacial development is also ongoing. In order to develop preventative strategies for congenital defects, we must understand the mechanisms driving neural crest and cardiac morphogenesis and how nutritional elements may be involved. These studies also enhance the understanding of adult diseases because many diseases may have embryological origins.

*Faculty: Philip Brauer, PhD.*

**Developmental Neuroscience: Ontogeny and Phylogeny**

Molecular cues control the proliferation, migration, and specification of neuronal groups. To understand the dynamics that control the development of the brain, we are examining the interactions of a variety of early-onset genes in the formation of the rhombic lip and pallium of normal and mutant mice. The evolution of these brain domains forms a second focus of research. Comparative studies of gene and peptide expression patterns in developing chickens and mice provide another perspective of the genetic controls of neural domains.

*Faculty: Laura L. Bruce, PhD; and David H. Nichols, PhD.*

**Ear Development**

The inner ear contains two important sensory systems: the vestibular system for orientation in space and the auditory system for hearing. Progress in recent years has been dramatic regarding the molecular governance of ear development, in particular of the pathways of innervation in this organ and the genetics of hearing-related disorders. Research focuses on mouse mutations that cause developmental ear defects and those that affect either the formation or the maintenance of sensory neurons in the hearing or vestibular systems. This research will enable us to understand the molecular machinery that makes and brakes ear formation, especially the innervation. In a parallel avenue, we are investigating the activity-dependent connectional dynamics. For this we make use of micro- and hypergravity exposure, as well as several neurotrophin mutant mice with altered connections. This research is conducted in collaboration with Boys Town National Research Hospital, Millennium, Regeneron, and various universities. It is funded by the National Aeronautical and Space Administration and the National Institute on Deafness and Other Communication Disorders.

One of the central questions in developmental neurobiology of the sensory systems is how the receptor cells develop and whether their development is regulated by innervation. Research in the laboratory focuses on the development of cochlear hair cells. Specifically, we want to determine
when somatic motility, membrane conductances, and ACh receptor of outer hair cells develop. Recordings are made from solitary hair cells isolated from developing animals. Tissue culture technique has also been used to address the question of whether the maturation of hair cells is regulated by innervation. The research is funded by the National Institute on Deafness and Other Communication Disorders.

**Faculty:** Kirk Beisel, PhD; Laura Bruce, PhD; M.-D. Crapon de Caprona, PhD; Bernd Fritzsch, PhD; David He, PhD; and David Nichols, PhD.

**Molecular Biology of the Inner Ear and Hereditary Deafness**

The mouse inner ear offers an excellent paradigm to characterize and analyze the functional genomics of unique and rare cell types in the inner ear. These include inner hairs cells, outer hair cells, inner phalangeal, border cells of the inner sulcus, pillar, Deiters’, Hensen’s, and Claudius’ cells.

Gene discovery and differential expression will focus on global expression analysis using microarray analyses in combination with null and spontaneous mutant mice. Quality assessment of these cDNAs will be accomplished by using in silico microarray analyses to detect expression of ion channel genes, rare to common housekeeping genes, developmentally expressed genes, cell-specific genes of the OC, and genes expressed in only non-sensory/non-neuronal cells. Using bioinformatics approaches, candidate genes for hereditary deafness will also be identified. One component of the research program will also focus on the development and testing of genetically engineered mouse mutant lines to determine and molecularly dissect the structure functional relationship of the altered genes in normal and dysfunctional auditory responses. This research is conducted in collaboration with Boys Town National Research Hospital, RIKEN, the National Institutes of Health, University of Iowa, and various other universities. It is funded by the National Institute on Deafness and Other Communication Disorders.

**Faculty:** Kirk Beisel, PhD.

**Hearing Loss**

Hair cells are the essential first step in hearing, and damage to hair cells is the cause of age-related and traumatic hearing loss. In work funded by the National Institutes of Health and the Richard J. Bellucci, MD, Medical Research Fund, the basic science of hair cells and the mechanisms underlying their loss are being studied, with a view to finding rescue and repair methods. This work is being pursued in collaboration with investigators at Boys Town National Research Hospital, Harvard University, Baylor College of Medicine, St. Jude Children’s Research Hospital in Memphis, University of Colorado at Boulder, University of Texas at Austin, University of Texas Health Science Center at San Antonio, University of Maryland, Oregon Health Sciences University, Case Western Reserve University, and Northwestern University.

**Faculty:** Kirk Beisel, PhD; Bernd Fritzsch, PhD; Richard Hallworth, PhD; David He, PhD; and David Nichols, PhD.

**Biophysics of Cochlear Hair Cells**

The outer hair cell (OHC) is one of two kinds of receptor cells in the inner ear and plays a critical role in mammalian hearing. OHCs enhance basilar membrane motion through a local mechanical feedback process within the cochlea, termed the “cochlear amplifier.” It is generally believed that the basis of cochlear amplification is a voltage-dependent somatic length change of OHCs. In this scheme, receptor potentials produced by transducer current in response to acoustic stimulation provide the input to the cell’s motor activity. Consequently, the OHC is thought to perform two transducer functions: a conventional mechanoelectrical or forward transduction in the stereocilia; and a specialized electromechanical or reverse transduction in the basolateral membrane. Funded by the National Institute on Deafness and Other Communication Disorders, research in the laboratory focuses on the two transduction processes in OHCs. Recordings are made from isolated hair cells, cultured hair cell preparations, and hemicochlea, in conjunction with molecular, morphological, and other novel techniques to investigate properties of these cells and their roles in cochlear function in
mammals. The research is conducted in collaboration with Northwestern University, Harvard University, the National Institute on Deafness and Other Communication Disorders, and St. Jude Children’s Research Hospital.
Faculty: Richard Hallworth, PhD; and David He, PhD.

Control of Gene Expression

This research is centered on the developmental regulation of hemoglobin gene expression with correlative gene therapy approaches. The mechanism by which transcriptional regulatory proteins are involved in switching the various hemoglobin genes on and off at different stages of development is being studied. The results from these investigations will contribute to knowledge of red cell maturation and disease states which result from gene defects. New gene therapy vectors, which are erythrocyte specific and use endogenous retrotransposons, which are expressed in red blood cells, are being developed. This is a novel gene therapy approach to genes in target cells, which have long-term expression capabilities, as well as tissue specificity.
Faculty: Joseph Knezetic, PhD.

Molecular Genetics of Hereditary Cancers

This research is focused on finding mutations at the DNA sequencing level for various hereditary cancer patient families. Studies so far have shown that each family has unique mutations causing the cancers. The laboratory facilities used for the work have been developed into a Molecular Diagnostic Laboratory which is fully accredited by the Clinical Laboratory Improvement Amendments (CLIA) and certified by the College of American Pathologists (CAP). This laboratory examines patient DNA samples for known mutations in each family and provides reports for subsequent genetic counseling. WAVE-DHPLC technology and CHIP instrumentation are being used to assay for new mutations in families where the original causative mutation has yet to be determined.
Faculty: Joseph Knezetic, PhD.

Engineering RNA Catalysts

This research is focused on development of controllable RNA catalysts as genetic regulatory switches and cellular biosensors. These catalysts, termed allosteric ribozymes, require the binding of specific effector molecules to elicit activity and are generated using rational design and in vitro evolution strategies. The ability of allosterically self-cleaving ribozymes and self-splicing introns to regulate gene expression is of particular interest. Toward this goal, model systems for yeast and mammalian cells are presently being developed. Moreover, such catalysts afford a unique opportunity to investigate the structural dynamics of RNA folding and ligand interaction.
Faculty: Garrett Soukup, PhD.

Osteoporosis

Collaboration between Creighton faculty in the Departments of Biomedical Sciences and Internal Medicine focuses on osteoporosis and the cellular basis of how skeletal mass is achieved and maintained: bone mass changes in response to varying loads – disuse reduces and heavy use increases bone density; how loads placed on the skeleton are detected and converted into biological signals that affect the balance between bone formation and resorption is not understood. Studies currently underway use bromodeoxyuridine to characterize the proliferation and differentiation of osteoprogenitor cells in response to biomechanical loading in adult rats. The role of prostaglandin E (PGE) as a local mediator of load induced bone formation is also being evaluated. Another project is designed to elucidate how smoking tobacco reduces bone mass and increases the risk for osteoporosis. This project combines an assessment of bone structure, strength, and cell function using in vivo and in vitro models.
Faculty: John Yee, PhD.
Cell Mechanics

It has long been known, but not widely appreciated, that light exerts force on living tissue. Intense laser light can be harnessed to produce a novel method, called the optical stretcher, for the measurement of the mechanical properties of single cells. In a joint project of the Department of Biomedical Sciences, the Osteoporosis Research Center, and the Creighton University Physics Department, an optical stretcher facility has been constructed in the Department of Biomedical Sciences. Initial studies will address the mechanics of hair cells of the inner ear, the mechanism by which bone density is regulated by osteocytes, and the mechanisms underlying photodynamic therapies. This work is being pursued in collaboration with the University of Texas at Austin and the University of Leipzig, Germany.

Faculty: Richard Hallworth, PhD.

Control of Appetite and Digestion

Dr. Roger Reidelberger’s research focuses on the question: How does the gastrointestinal tract communicate with the brain to control food intake and energy reserves (adiposity; body weight)? Meal initiation is typically preceded by sensations of hunger and followed by sensations of fullness and satiety, which affect the timing of meals and amount of food consumed. Various gastrointestinal hormones and nerves are postulated to play important roles in conveying information to the brain about the quantity and quality of food consumed. Less is known about the brain substrates that receive this information, produce hunger and satiety sensations, and regulate adiposity. Dr. Reidelberger’s research specifically focuses on the role of various gastrointestinal peptides (cholecystokinin, amylin, peptide YY(3-36), glucagon-like peptide-1, ghrelin) and nerves (vagus) in control of food intake, gastric emptying, and body weight. Most of his studies use the rat as an experimental model. Rats are prepared with chronic indwelling cannulas in specific areas of the gastrointestinal tract, vascular system, and/or brain for computer controlled delivery of test substances and withdrawal of blood. Food intake and meal patterns are determined from continuous computer recordings of changes in food bowl weight. Many of the peptides and peptide antagonists are synthesized either locally in the Veterans Administration Peptide Core Facility or by Dr. Martin Hulce in the Department of Chemistry at Creighton University. This research is supported by the Medical Research Service of the Department of Veterans Affairs, the National Institutes of Health, and the National Science Foundation.

Faculty: Roger Reidelberger, PhD.

Regulatory Peptides

Structure-activity relationships of selected regulatory peptides are examined using synthetic peptide chemistry; physical, chemical, and computerized theoretical analysis of conformation; and biological characterization of activity.

- Studies on the interactions of antimicrobial peptides with the chaperone protein DnAK, using MD simulations, revealed the interaction site on the protein and a possible basis for antimicrobial action and design of new peptide-based antibiotics.
  Faculty: Sándor Lovas, PhD.

- Studies of gastrin and gastrin gene-products are focused on their significance in colonic cancer and on a novel receptor for carboxymethyl gastrin which mediates promotion of growth of the cancer cells.
  Faculty: Sándor Lovas, PhD; and Richard F. Murphy, PhD.

- Studies of variants and derivatives of gonadotrophin releasing hormone variant, GnRH III, have led to development of a conjugate of the peptide with a synthetic polymer. This suppresses growth of cancers, including breast and colonic, which have receptors for the hormone. The technology is being optimized for therapeutic application.
  Faculty: Sándor Lovas, PhD; and Richard F. Murphy, PhD.
Studies of the vasodilatory neuropeptide, calcitonin gene-related peptide (CGRP), have led to the development of the most potent, peptide-based CGRP antagonists reported to date. These will be useful for determining the physiological role of CGRP and the design of therapeutics for treatment of hypertension and migraine.
Faculty: D. David Smith, PhD.

Structural Bioinformatics and Proteomics

Eighteen Alpha cpu-based and 80 Athlon cpu-based clusters are used to study conformational properties of peptides proteins and the effect of weakly polar interactions on peptide and protein structures by Molecular Dynamics simulations, bioinformatics, and high level quantum chemical calculations.
Faculty: Sándor Lovas, PhD; and Richard F. Murphy, PhD.

Protein Processing

Communication between cells of the nervous, endocrine, and immune systems is frequently conducted through biologically active peptides. Many of these peptides are initially synthesized as larger, inactive propeptides which are subsequently cleaved by extremely specific endoproteases. The structural basis for this specificity is unknown. We are presently examining the processing of proinsulin and proglucagon by the converting enzymes PC1 and PC2 in an attempt to uncover clues to the specificity of substrate recognition. The ultimate goal of this work is to describe, at the molecular level, those interactions for the differential processing of peptide hormones.
Faculty: Robert Mackin, PhD.

Bioimaging

In 2004, the Nebraska Center for Cell Biology in the Department of Biomedical Sciences obtained a Zeiss multi-photon confocal microscope. Investigators in the department and other departments of the School of Medicine, the Departments of Physics and Biology, Creighton University, Boys Town National Research Hospital, the University of Nebraska Medical Center, and outside centers such as the University of South Dakota, St. Jude Children’s Research Hospital (Memphis, Tennessee), and the Virginia Military Institute (Lexington, Virginia) are using the instrument to extend their knowledge of the inner workings of cells.
Faculty: Bernd Fritzsch, PhD; and Richard Hallworth, PhD.

For more information about the Department of Biomedical Sciences’ current research activities, visit the department’s webpage at: http://biomedsci.creighton.edu

Department of Medical Microbiology and Immunology

The Department of Medical Microbiology and Immunology consists of eleven PhDs with primary appointments and six PhDs and four MDs with secondary appointments. The research programs of the department are multi-disciplinary, with expertise in a variety of areas broadly related to medical microbiology and immunology. In addition, collaboration with faculty of other departments within Creighton University School of Medicine, the Veterans Administration Medical Center, the University of Nebraska at Lincoln, and the University of Nebraska Medical Center (UNMC) provides an opportunity for innovative research opportunities and supports an integrated graduate program. These collaborative efforts include research in the general areas of antimicrobial agents and chemotherapy, molecular biology, genetics, immunology, microbial toxins, virology, bacterial pathogenesis, diagnostic and clinical microbiology, adult infectious diseases, epidemiology, microbial physiology, and nosocomial infections. The range of research interests extends from clinical trials to test the efficacy of antimicrobial agents to the basic aspects of cellular and subcellular microbiology. The diversity of faculty research interests and scientific pursuits, including a listing of publications and research grants in progress, is summarized in the individual faculty bibliographies.

Major areas of emphasis within the department include:
Flow Cytometry Core Facility

The Creighton University Flow Cytometry Core Facility is located in and administered by the Department of Medical Microbiology and Immunology. The facility was established in 2001 to serve research investigators in any department at Creighton University and Boys Town National Research Hospital, as well as those working outside of the Creighton system at such institutions as UNMC and Children’s Hospital. Within Creighton, the facility routinely provides service to investigators in a number of departments, including Medical Microbiology and Immunology, Biomedical Sciences, Allergy and Immunology, Cardiology, and the Cancer Center.

The centerpiece of the facility is a state-of-the-art, three-laser, twelve-parameter, high-speed sorting FACS Aria flow cytometer from Becton Dickinson. When installed, this instrument was the first FACS Aria in the world to have UV capabilities. This instrument is capable of routinely performing ten-color analysis (plus two scatter parameters). The presence of the UV laser allows the instrument to be used with UV compatible dyes for DNA analysis or hematopoietic side population sorting experiments. In addition to its analysis capabilities, the strength of this instrument is its ability to sort to purity any cell populations defined by any combination of its twelve parameters. Up to four populations can be sorted simultaneously. Sort purities of greater than 99.5 percent are common, even at sort rates of over 30,000 cells/second. Sorted cells can be collected in bulk, or any number of cells can be put directly into microtiter plates (any number of wells), PCR plates, or directly onto microscope slides or Petri dishes. The instrument also allows the investigator to control the temperature of both the input sample and the sorted cell populations.

In addition to the FACSAria, the facility houses a Becton Dickinson FACSCalibur dual laser, four-color flow cytometer. This instrument is used for the bulk of the routine cell analysis in the facility. It is equipped with both sorting capabilities and a Multiwell Autosampler. A separate computer workstation is available in the facility for off-line data analysis using any of several advance data analysis packages.

Other instruments used in the facility include a Beckman Coulter Z1 particle counter, a Nikon E-400 microscope, and an IEC Centra-CP8R refrigerated centrifuge. The cell enrichment capabilities of the facility have also been enhanced through the purchase of two magnetic separation units (a VarioMACS and a QuadroMACS) from Miltenyi Biotech. Using magnetic particle techniques, these units allow the enrichment/purification of specific cell populations for further analysis or culture. All of these additional items are available for use by any investigator.

Faculty: Patrick C. Swanson, PhD; Technical Director: Greg A. Perry, PhD.

Prion Research

Prion diseases are a group of fatal neurodegenerative diseases that affect humans (e.g. Creutzfeldt-Jacob disease) and animals (e.g., chronic wasting disease). Prion diseases have long subclinical incubation periods of months to decades with a short clinical phase that is characterized by the onset of behavioral, cognitive, or motor deficits. Deposition of the abnormal isoform of the prion protein, PrPSc, is pathognomonic for prion diseases, and its deposition in the central nervous system (CNS) results in neuronal loss and onset of clinical symptoms. PrPSc is an amyloid protein that is resistant to proteolytic degradation and is posttranslationally derived from the protease sensitive non-amyloid host encoded prion protein, PrPC. Outside of the CNS, PrPSc deposition occurs in the peripheral nervous system and secondary lymphoreticular system (LRS) tissues such as spleen and lymph nodes. All prion diseases in animals and a majority of prion diseases in humans are due to prion exposure by a peripheral route (e.g., ingestion). Details of the mechanism(s) of prion transport to the CNS are poorly understood. To better define prion transport to the CNS, Drs. Jason Bartz and Anthony Kincade are investigating three areas of prion pathogenesis. First, they are exploring alternative routes of prion entry into the host in an attempt to better define the possible routes that prions can gain access to the CNS. Second, they are investigating the role of the innate immune system in the processing and transport of prions to secondary LRS tissues. Finally, they are interested in factors that influence...
susceptibility of neurons to prion infection and/or replication. The understanding of routes and mechanisms of prion transport will enhance the future development of therapeutic interventions to prevent prion spread to the CNS.

Faculty: Jason Bartz, PhD; and Anthony Kincaid, PhD.

**Immunodeficiency Research**

Dr. Michael Belshan’s fundamental research interest is virus-host cell interactions, specifically related to the replication and pathogenesis of the lentivirus subfamily of retroviruses. Members of this subfamily include the human and simian immunodeficiency viruses (HIV and SIV, respectively). The focus of Dr. Belshan’s work is to understand the interaction of viral components and the host cell environment by using a cell biology approach to obtain results that provide insights not only into mechanisms of virus replication and pathogenesis, but also the biology of cellular pathways. All the members of the diverse family of retroviruses have a common genomic structure and life cycle, yet they have evolved to infect a broad range of cell types in diverse species and elicit various pathologies. Current research focuses on characterizing early events in HIV infection. A hallmark and critical feature of the pathology of lentiviruses is the ability to infect non-dividing cells. Productive infection of non-dividing cells by HIV requires active nuclear transport of the viral DNA to and across the host cell nuclear membrane leading to viral dsDNA integration into the host genome. This process is mediated by a large nucleoprotein complex called the viral pre-integration complex (PIC). Dr. Belshan’s lab is currently investigating the composition, assembly, and transport of both the HIV and SIV PICs. This area remains one of the least defined aspects of HIV replication and thus a novel and exciting area to study. The characterization of the pathway of PIC transport to the nucleus is a first step in the development of a new class of antiviral therapeutics.

Faculty: Michael Belshan, PhD.

**Multiple Sclerosis Research**

Multiple sclerosis (MS) is the most common demyelinating disease of the central nervous system (CNS) in humans. Patients with MS normally experience a chronic progressive loss of motor and/or sensory functions. The origin of MS is unknown, although some investigators have postulated that an environmental agent (i.e., a virus or bacteria) may trigger the disease. Dr. Kristen Drescher’s laboratory utilizes a mouse model of virus-induced demyelination (Theiler’s murine encephalomyelitis virus) to study immune factors involved in the development of pathology and clinical disease.

Faculty: Kristen Drescher, PhD.

**Center for Research in Anti-Infectives and Biotechnology**

The Center for Research in Anti-Infectives and Biotechnology (CRAB) is an association of researchers within the Department of Medical Microbiology and Immunology, Creighton University School of Medicine. The center’s research interests focus on many aspects of antimicrobial chemotherapy ranging from drug discovery to studying the molecular mechanisms of antibacterial resistance among bacteria, solving problems of detecting antibacterial resistance in the clinical laboratory, and evaluating new drugs and novel drug combinations to effectively treat resistant bacteria. For over eleven years, CRAB faculty have been studying the super-bug strains that are resistant to antibiotics.

The members of the center include specialists in clinical microbiology, molecular biology, and pharmacodynamics. In addition to their research endeavors, members of CRAB actively teach many courses within the Schools of Medicine, Dentistry, and Pharmacy and Health Professions. These courses include medical microbiology and immunology and antimicrobial agents and chemotherapy. Center associates also teach a summer “minicourse” in antimicrobial agents and chemotherapy to pharmaceutical and industry professionals.

Faculty: Nancy Hanson, PhD; Phillip Lister, PhD; and Kenneth Thomson, PhD.
Department of Medicine: Division of Cardiology

The Division of Cardiology, under the direction of Syed Mohiuddin, MD, builds upon its commitment to provide superior clinical services, participate in sponsored clinical research, and take part in community-focused intervention programs.

Clinical Operations

The Cardiac Center provides referring physicians, health care professionals, patients, and their families with the opportunity to utilize the area’s first freestanding facility dedicated to cardiovascular research and education, risk modification, diagnosis, and treatment.

Services at The Cardiac Center include: patient evaluation, treatment, and management; electrocardiography; x-ray; exercise testing; cardiovascular sonography services; Implantable Cardiac Defibrillator (ICD) and pacemaker management; pharmacologic interventions (including the availability of compassionate drugs); laboratory services; risk reduction education and smoking cessation services.

In keeping with its mission to provide a healthy environment for its employees, patients, and visitors, The Cardiac Center became a tobacco-free facility on November 16, 2006 in alignment with National Smoke-Out Day. The use of tobacco products is now prohibited inside and outside The Cardiac Center building, including parking lots and all areas considered part of campus property. This policy applies to all faculty, fellows, staff, students, patients, and visitors at all locations. For many years, The Cardiac Center faculty and staff have discussed the inconsistency of advocating a healthy lifestyle while continuing to allow the use of tobacco products on its property. This is just one of many reasons for the decision to become tobacco-free. Through this action, The Cardiac Center has also agreed to serve as a model for the University as it moves toward becoming an entirely smoke-free campus.

Creighton University hosted the University of Massachusetts’ Tobacco Treatment Specialist (TTS) Training and Core Certification Training on October 2-5, 2006 at The Cardiac Center. Sixteen individuals from Nebraska, South Dakota, and Michigan attended the training. The training is an intensive, evidence-based program designed for people who deliver moderate to intensive tobacco treatment services in a health care or community setting. It is a nationally-recognized program. Syed Mohiuddin, MD; Stephanie Maciejewski, PharmD; and Tim Grollmes, MTTS, were featured speakers at the training session.

Research

The Division of Cardiology continues to build upon its superior clinical services by participating in sponsored clinical research, supporting faculty- and fellow-initiated investigations, and offering community-focused intervention programs under the direction of Division Chief Syed Mohiuddin, MD. Stephanie Maciejewski, PharmD, serves as the Administrative Director of Research, with Michael Del Core, MD, leading the Interventional Research Program and Antonio Reyes, MD, leading the Non-Interventional Clinical Trials Program. The Cardiac Center initiated eighteen new research studies during the past year, including phases III and IV pharmaceutical and device trials, as well as investigator-initiated research. Those topics include anemia, heart failure, acute coronary syndromes, hypertension, endothelial function, lipid lowering agents, C-reactive protein, acute MI, and intervention and post-intervention studies.

Funded Programs in Minority Cardiovascular Risk Prevention

The Cardiac Center recognized a need to provide educational and preventive programs to the local community and responded with multiple initiatives. These programs enhance Creighton’s visibility in the Omaha community and establish the university as a partner willing to share its resources to improve health care in the minority community.
Creighton Community Health Center

The Cardiac Center of Creighton University Medical Center and Creighton University established the Creighton Community Health Center (CCHC) in an effort to enhance educational opportunities for Creighton students, improve health care services to area underserved populations, and advance the science directed toward reducing, eliminating, or preventing health disparities in minority and underserved populations.

Funding for the Community Health Center is balanced between Nebraska Tobacco Settlement Biomedical Research Development funds (LB692) and Creighton University Health Future Foundation Faculty Development Grants.

The center provides outpatient basic medical care encompassing curative and preventative medicine, health promotion and maintenance, education, nutrition, and continuing care evaluation and management for men, women, and children.

It is hoped that the center will:

- Accelerate the discovery of new interventions and expand the utilization/adaptation of existing evidenced-based interventions for preventing, reducing, or eliminating health disparities;
- Increase the number of researchers and professionals from minority and medically underserved populations trained in biomedical and behavioral research;
- Increase the quality of the training provided to biomedical and behavioral researchers and professionals conducting research on health disparities; and
- Increase public trust and the dissemination and utilization of scientific and health information relevant to health disparity populations.

Cardiovascular Risk Factor Screening and Intervention in African-American Adults

The Cardiovascular Risk Factor Screening and Intervention in African-American Adults (CARS-I) Program provides cost-efficient, straightforward education and support to a large segment of Omaha’s African-American population. The project focuses on cardiovascular disease prevention through healthy eating, physical activity, and strong, culturally-sensitive partnerships with health care providers and agencies. A network of community-based educators guides and supports participants through the program. The CARS-I Program has seen statistically significant improvements in the subjects’ blood pressure, cholesterol, weight, BMI, waist circumference, physical activity levels, and overall CVD risk.

Black Education and Treatment of Hypertension (BEAT HTN)

Hypertension is a key contributor to cardiovascular, renal, and all-cause morbidity and mortality, with an incidence that is disproportionately high in African Americans, contributing to 30 percent of all African-American deaths. The Black Education and Treatment of Hypertension (BEAT HTN) Study was designed to increase the proportion of hypertensive African Americans meeting the Seventh Joint National Commission on the Control of Hypertension (JNC VII) guidelines for hypertension in an effort to eliminate this disparity and increase quality and years of life. Participants are provided with FDA approved antihypertensive medication free of charge. Subjects work with a nurse practitioner-physician team, health educator, dietitian, pharmacist, social worker, and Cardiac Center-trained lay health educators to encourage medication compliance and lifestyle modification.

Tobacco Policy

The Communities of Excellence grants are part of local efforts to prevent and control tobacco use within Douglas and Sarpy Counties. This project is supported in part by Region 6 Behavioral...
Healthcare and Alegent Health through funding provided by the Nebraska Health and Human Services System/Tobacco Free Nebraska Program as a result of the Tobacco Master Settlement Agreement. The goals of the grants are to reduce exposure to secondhand smoke in the workplace, homes, and apartments, and to prevent youth initiation of tobacco use through education and product placement policies. Through these initiatives, we will work with community organizations, neighborhood associations, churches, and others to provide educational and preventative services.

Latinas, Tabaco, y Cáncer

The Latinas, Tabaco, y Cáncer project, funded by the Nebraska Comprehensive Cancer Control Program, is a new initiative to engage the Latino community in tobacco treatment through the provision of services of a promotora, a Creighton University-trained community health advocate who will lead tobacco treatment classes, support groups, and counseling sessions in Spanish for community members. This is the only Spanish language tobacco treatment service in the Omaha metro area.

School of Pharmacy and Health Professions

The faculty of the School of Pharmacy and Health Professions (SPAHP) guide the development of excellence in the clinical professions of occupational therapy, pharmacy, and physical therapy. The school also offers courses of study that lead to a certificate in Health Services Administration and grants the degree in Emergency Medical Services. The school consists of four academic departments: Occupational Therapy, Pharmacy Practice, Pharmacy Sciences, and Physical Therapy. These departments work collaboratively and collectively to achieve excellence in these professional program offerings.

Research and Service Activities

The scope of research within the School of Pharmacy and Health Professions is broad, with active research programs and projects in the biomedical sciences, health services research, clinical research, and educational research areas of emphasis. Interdisciplinary and interprofessional approaches characterize the school’s research models and culture throughout the scope of research. The faculty is composed of both basic scientists and clinician scientists who provide a framework for basic, translational, and applied research opportunities. Faculty engage in national, regional, state-wide, and local research initiatives, with several holding appointments on federal grant review panels and providing consultation and service for agencies within the U.S. Department of Health and Human Services National Institutes of Health (NIH), Health Resources Services Administration (HRSA), Agency for Healthcare Research and Quality (AHRQ), Indian Health Service (IHS), as well as the National Science Foundation (NSF) and the U.S. Department of Defense (DoD). The school’s Office of Research was established in mid-2004 to provide support and services to assist faculty with quality and productivity in research efforts. This past year, the Research Seminar Series was expanded to include a campus-wide invitation to faculty, students, and staff. In addition, a new intensive Student Summer Research Program was launched.

Research Funding and Cross-Campus Collaborations

Both internal and external funding has been received by SPAHP faculty in the broad research categories of biomedical sciences, health services research, clinical research, and educational research. Between July 2005 and June 2006, faculty garnered twenty-three externally funded research and training grant awards and twenty-four internal grant awards (see Faculty Research Grant Development Program below). The total award amount for this period was $1,745,860, a significant increase over 2004-2005. SPAHP faculty co-investigated or collaborated with principal investigators external to Creighton University on nine projects. Of these, five were funded projects. In addition, faculty served as principal investigators and worked collaboratively with co-investigators from other schools on four projects.
Faculty Research Grant Development Program

Two years ago, the SPAHP Faculty Research Grant Development Program was established from seed money provided by Health Future Foundation. The purpose of this program is to facilitate faculty research efforts for high impact, high value, and potentially externally fundable works. This program is conceptualized as a quality building effort using the peer and administrative review process to enhance faculty competitiveness and productivity in research. Since the program’s inception, the school has continued to build its research and scholarly capacity. Now in its second year, the program is lauded an overwhelming success.

In June 2005, the second round grant application was announced to the SPAHP faculty. A workshop for preparation of the grant application was held prior to award submission time. A campus-wide scientific peer review panel was assembled, and reviewers provided critiques. An administrative review completed the selection process. Five of nine applications were funded in July 2006; two additional applications were funded after re-submission in November 2006. The SPAHP Office of Research provided the complimentary education and project management expertise to launch this successful venture. Ongoing project and investigator support is provided by the office. Interim progress reports have been submitted and final reports will be due in June 2007. An impact analysis of Year 1 will be completed.

Student Research

- Graduate Student Research. The school has both undergraduate and graduate students actively engaged and mentored by faculty in research. At present, seven students are enrolled in the Masters of Science Program in Pharmaceutical Sciences. A research thesis is required for the partial fulfillment of the requirements of the program. Research areas include pharmaceutics, immunology, pharmacology, anatomy, toxicology, and pharmacokinetics. Specific areas of interest include drug delivery systems, regulation of T helper cells, pharmacology of the eye and TCDD toxicity. To date, twelve students have graduated from the program. Doctor of Philosophy (PhD) candidates in a joint program with the School of Medicine participated in faculty-mentored projects during this past year.

- Clinical Doctorate Student Research. Research project completion is a required activity within the Doctor of Occupational Therapy and Doctor of Physical Therapy programs and is encouraged in the Doctor of Pharmacy Program. The faculty provides mentorship and guidance in skills development for all forms of research, with common areas of emphasis being service-learning, reflective practice, and applied outcomes research.

- Student Research Program. A faculty mentor-student sponsored research program was expanded this year. Students enrolled in the Occupational Therapy, Pharmacy and Physical Therapy professional degree programs were provided the opportunity to competitively apply for either a summer or academic year research experience. This experience was planned with a faculty member who gave oversight and guidance to the students’ research skills development by engaging the student in components of active, ongoing research projects. The SPAHP Office of Research received twenty-six applications. Of those, twenty-four were awarded stipends. No campus housing or meals are included in this program.

Creighton University Health Services Research Program

Another initiative begun two years ago is the Creighton Health Services Research Program (CHRSP), a research and development program designed to promote and sustain health services research. Led by Dr. Kim Galt as the principal investigator, the program brings researchers and scholars together for interprofessional collaboration and faculty development. Faculty examine issues related to patient safety and quality in health care, including new and emerging technological influences on safety, the effects of health care financing, the relationship of costs of pharmaceuticals and treatments, social and behavioral influences on care, access and disparities issues, and models of care delivery.
The program was initially launched within the School of Pharmacy and Health Professions and has since grown to include university-wide representation. Year 1 focused on establishing key technology infrastructure, Year 2 on establishing and expanding external community, private, and government relationships. External and internal funding applications have been pursued by involved faculty throughout this program. It is anticipated that the expertise provided by the CHRP research faculty will enhance the innovation, significance, rigor, and ultimate successful conduct of the research projects conceptualized by the partners and collaborators. CHRP is designed to promote collaboration of these two groups to elevate the quality of the research and increase the likelihood of successful, competitive grants being awarded.

Six faculty have completed short-course training in human factors engineering and patient safety at the University of Wisconsin System Engineering for Patient Safety Program. The CHRP faculty hosted a summer research student from the Creighton University Health Sciences-Multicultural and Community Affairs (HS-MACA) HRSA-funded program for minority students.

CHRP was formed to provide the infrastructure and resources necessary to identify external funding sources, prepare and submit grant applications, and support project management through staff and technology support to achieve future growth. There is a data entry and analysis center with four workstations and installed software applications for statistical and qualitative data analysis. In Year 2, the repository of database and research tools has been expanded (see http://chrp.creighton.edu/). The CHRP computer lab is equipped with a variety of software analytic programs to assist end users in data management, including Microsoft Office, SPSS, SPSS Text Analysis, SAS, and ArcGIS. Additional software packages are evaluated and installed based on special needs projects.

The involvement of faculty has grown from Year 1 through Year 2. This growth is attributed to aggressive networking with individuals who have the expertise and interests consistent with the health services research mission of this program and who expect to have mutually beneficial success from involvement in this initiative.

During Year 2, CHRP added nine additional faculty to its program for a total of twenty-seven, expanding collaborative networks with the Schools of Nursing, Dentistry, and Business Administration. Since the program was launched, forty publications and fifty presentations have directly related to research supported by CHRP. Moreover, the program has successfully obtained funding through Infrastructure Building Competitive Grants.

A Building Research Infrastructure Capacity (BRIC) Proposal for $500,000 was awarded through the Agency for Healthcare Research and Quality (RFA H5-05-010) – one of only a few in the country chosen from seventy competing applications. This award has provided funds for the continuation and expansion of existing programs and will offer future opportunities for new research initiatives. CHRP’s success in receiving this award is attributed to the clear plan for advancement based upon gap analysis of resource requirements to achieve sustainability and the commitment made by the University towards sustainability. The successful conduct and implementation of this award will build collaborations across schools and professions.

Office of Interprofessional Scholarship, Service and Education

The Office of Interprofessional Scholarship, Service and Education (OISSE) was formed in 2001 and is responsible for planning, organizing, and implementing educational, service, and scholarly projects related to interprofessional community service, service learning, and scholarship within the School of Pharmacy and Health Professions.

OISSE maintains a longstanding partnership with the Omaha and Winnebago Tribes addressing health disparities and providing students from across the health sciences with rural, interprofessional student training. The Health Resources and Services Administration (HRSA) grant #1D36HP03158, Circles of Learning: Community and Clinic as Interdisciplinary Classroom, was obtained in 2004 and aimed at further developing the interprofessional service opportunities with the tribes. A goal for the second year of funding for the grant was the 2006 Leadership in Rural Health Interprofessional Education and Practice: A Working Conference for Leaders in Rural Health Care, which brought together
forty leaders in the field to discuss challenges and develop strategies for the future of interprofessional education and practice in rural areas. An outcome of the Leadership Institute is a book contract garnered from Jones and Bartlett to disseminate the professional papers/proceedings of the conference.

In 2005-2006, OISSE expanded its community engagement model to include local, rural, and international outreach efforts supporting interprofessional community engagement in the Omaha metro and rural Nebraska, as well as international initiatives in the Dominican Republic, Ukraine, and China. Using the Center for Health Policy and Ethics model, OISSE expanded its structure to integrate health sciences faculty and community leaders interested in interprofessional community engagement by offering Faculty or Community Associate/Affiliate appointments. Overall, nineteen faculty members accepted OISSE appointments, and the group formed four workgroups based on faculty interest areas: Professional Formation, Geriatrics, Health Promotion, and International Outreach. Through the workgroups, faculty collaboratively determine initiatives based on their topic area and explore scholarly collaboration which includes grant writing, community partnerships to meet needs and provide student learning activities, and scholarly presentations and publications. OISSE has a demonstrated history of scholarly collaboration and maintains strong community partners. A five-year clinical contract (2005-2010) was awarded to the school by the U.S. Department of Health and Human Services Indian Health Service that provides $182,084 annually to sustain physical and occupational therapy services at the Indian Health Service facility in Winnebago, Nebraska.

Also in 2005-2006, OISSE developed a strong partnership with Madonna Rehabilitation Hospital with research and community health outreach. A collaborative grant was submitted to the National Library of Medicine to develop a comprehensive distance health education system for the Omaha Tribe in Macy, Nebraska. In addition, four internal grants were funded.

Publications for 2005-2006 from OISSE faculty include a book, a book chapter, and eighteen scholarly presentations related to rural health, cross-cultural and community-based practice, health care access, social justice implications, interprofessional student training, and service learning delivered at national and international meetings.

**Department of Occupational Therapy**

The Department of Occupational Therapy consists of two administrative assistants, approximately 100 on-campus and 100 distance students, and thirteen faculty, including twelve faculty with doctoral degrees and one clinical faculty holding a bachelor’s degree. Faculty engage in a variety of teaching, service and scholarly activities each year. During 2005-2006, faculty were engaged in the following areas of scholarship productivity:

- **Scholarship of Practice**: Increasing occupational therapy services in rural areas, interprofessional geriatric care, error reporting, and patient safety;
- **Scholarship of Teaching and Learning**: Outcomes of service learning activities, benefits of videotaping patient care sessions as a tool for student learning during Level II FW experiences; and
- **Scholarship of Engagement**: Health disparities, migrant workers, occupational patterns and disability, interprofessional care of Native Americans through participation in OISSE grants and contracts, occupational therapy service delivery to adolescents.

Extramural funding sources for current research projects include HRSA, National Patient Safety Foundation, Consejo Nacional de Discapacidad, Harvard University Center of Developmental Psychology, United Nations High Commission on Refugees, Amnesty International, Midwest Consortium for Service Learning in Higher Education. Intramural funding was provided through faculty grants from the School of Pharmacy and Health Professions.
Annual professional development plans for each faculty member includes at least one goal targeted at scholarship development and productivity. During 2005-2006, faculty publications included seventeen chapters, nine peer reviewed articles, and three abstracts. Six external and internal internal grants were funded. Faculty’s professional conference presentations included the following venues: ten international, seventeen national, ten state, and fifteen local. For 2006, the department is focusing on establishing faculty groups with similar research pursuits. Faculty will continue to garner support from institutional infrastructures such as CHRP and OISSE.

**Department of Pharmacy Practice**

The Department of Pharmacy Practice is primarily responsible for the clinical education of students enrolled in the Doctor of Pharmacy program. The large majority of the forty-three faculty are clinician scientists whose research efforts are integrated within their clinical practice sites. Faculty maintain practices at Creighton University Medical Center, hospitals in the Alegent system, Children’s Hospital, Methodist Hospital, the Veterans Administration Medical Centers in Omaha and Lincoln, and Bryan LGH Medical Center in Lincoln. In addition, the department maintains a joint relationship with Walgreen’s in Omaha for clinical model development in the community. The department’s clinical faculty has established collaborative relationships with faculty in the Department of Medicine for a number of general and specialty clinics, as well as with faculty in the Departments of Family Practice, Neurology, Psychiatry, and Anesthesiology. The Drug Informatics Center located in the Health Sciences Library is a key service and research partner with CHRP in the Office on Aging collaboration. The Department has established and maintained 5 residency positions in pharmacy practice who complete their training throughout the CUMC, Bergan Mercy Medical Center, and community partner health systems and organizations. One fellow in the area of cardiology and three residents in the areas of drug informatics and clinical pharmaceutical care complete training within the department. From July 2005 to June 2006, the faculty produced thirty-nine peer-reviewed publications as primary or co-author; provided sixty-seven national, regional, or state presentations; and received three national recognitions.

Research and scholarship emphases are in educational assessment and outcomes research, clinical outcomes research, pharmacogenomics, nanomedicine for blood-brain barrier penetration, infectious diseases, clinical research in chronic disease management of areas such as diabetes, dyslipidemia, pain management, and public health research related to immunizations and disease prevention. Very recent progress in the area of nanoparticle formation and production has been made that holds promise for the development of a new treatment for Parkinson’s disease and delivery of HIV drugs. This work is possible through a collaboration between scientists in pharmacy practice, pharmaceutical sciences, faculty in the biomedical sciences at the School of Medicine, and faculty at the University of Nebraska Medical Center. Research is active in the area of drug interaction detection and drug toxicity prevention through pharmacogenomics. Clinical outcomes research in the areas of implementing practice guidelines to improve drug therapy management and smoking cessation programs at the time of hospital discharge are examples of some active research conducted by the clinical scientists in the department.

**Department of Pharmacy Sciences**

The Department of Pharmacy Sciences has twenty-one faculty who are either PhDs or PharmDs, or are PhD-trained, with backgrounds in pharmaceutics; pharmacology and toxicology; medicinal chemistry; health services research and administration; educational, behavioral, and social and administrative sciences in pharmacy. The department is home to the MS in Pharmaceutical Sciences.

Faculty in the basic sciences has engaged in cross collaborations within Creighton University and at other universities. Drug and dosage pre-formulation, characterization of the solid-state properties of drugs and delivery systems, drug delivery system design, pharmaceutical analysis and nutraceuticals are funded research areas within the department. Controlled deliveries of therapeutic protein and peptides in their conformational stability and biological activity form using smart polymer based delivery system is an active area of work. Another area is transdermal drug delivery using chemical
enhancers, as well physical enhancers like iontophoresis, electrooeration, sonophoresis while preserving skin reversibility, as well as percutaneous absorption of chemicals (toxicants, pollutants) and associated dermatotoxicity and skin irritation.

Research related to diseases and conditions under study include cancers, asthma, glaucoma, infectious disease, addictions (e.g., cigarette smoking), and molecular mechanism of normal embryo and fetal development. Research focuses on the role of TH-1/TH-2 cytokine imbalance to the etiology of asthma and allergic disease. These investigations will further inform about treatment approaches that may be effective in the disease. Faculty are investigating the effect of cigarette smoke extract (CSE) on the conformational stability and biological activity of a model protein lysozyme, so that we may understand the mechanism of genesis of the diseases caused by smoking. Ocular diseases may have new treatment opportunities through the research of faculty who are studying the role of isoprostanes on neurotransmitters in ocular tissues (NIH funded research area). Research is active in the synthesis, in vitro and in vivo biological evaluation of bicyclic octahydroisoquinolines as $\beta_2$ selective adrenoceptor agonists, and the synthesis and biological evaluation of bicyclic hexahydroaporphines as a intraocular pressure lowering and neuroprotective agent. Other research focuses on the control and regulation of gene expression during embryonic development. The role of Hox genes in the development of the craniofacial region of the embryo is researched to better understand how various embryonic structures develop, how the coordination of gene activities in both time and space is critical, and how disruption of these events can lead to birth defects. These and other accomplishments have been achieved through collaboration and work with the State EPSCoR (Experimental Program to Stimulate Competitive Research) Program, the University of Nebraska, and various departments (Chemistry, Biomedical Sciences, and others) within Creighton University.

Faculty with emphases in the behavioral and social and administrative sciences conduct much of their work through the support and collaborative infrastructure of the Creighton Health Services Research Program (CHRP). Active funded research is occurring with a core group of faculty in the study of pharmacy benefits management policies and practices, pharmacy practice models – such as mail order services and therapeutic drug monitoring services, and drug therapy adherence and compliance. Other funded research is focused on organizational theory, workforce and culture issues, and teamwork skills related to patient safety. Some of the faculty have focused a longitudinal effort in educational research related to pharmacy and professionalism development. Work is also being conducted in the area of educational technologies and student learning.

Department of Physical Therapy

The Department of Physical Therapy is composed of nineteen faculty, one resident, 196 students (144 entry level program; 52 transitional program) and two staff. Thirteen faculty are “core” as defined by the American Physical Therapy Association program accreditation standards. Eight core faculty have teaching-research classification appointments. One of the core faculty is Dean of the Graduate School. Five core faculty have clinician-educator classification appointments. Of the six faculty not designated as core, two associated faculty have clinician-educator classification appointments, and three faculty have contributed service appointments, primarily in selected teaching or clinical areas. One of these appointments supports faculty scholarship at Madonna Rehabilitation Hospital in Lincoln, and one faculty member has a visiting appointment.

The core faculty have identified four areas of emphasis for scholarship:

- Community engagement;
- Health services research;
- Teaching-learning; and
- Rehabilitation sciences, with an emphasis on movement disorders.
The department’s strategic plan states that all core and associated faculty not supported by extramural funding will participate in one of the scholarship emphasis areas. The community engagement area is supported by the Office of Interprofessional Scholarship, Service and Education. Work in this area has centered in activities supported by HRSA training grants in Native American health and student immersion in domestic and international underserved environments. The health services research area is supported by the Creighton Health Services Research Program and has focused on patient safety, building a health services research infrastructure, and professional discipline/malpractice. The teaching-learning research area is supported by the Office of Faculty Development and Assessment and is focused on the scholarship of teaching. Rehabilitation science in the Biodynamics Laboratory is a department initiative with a focus on investigating the effects of therapeutic interventions on movement dysfunction, with a primary focus on the adult population. Active areas of study include the biomechanical impairments, functional limitations, and therapeutic strategies associated with neurologic disorders (such as those secondary to Parkinson’s disease, diabetes, and peripheral vascular disease). Rehabilitation research is being conducted in collaboration with Creighton University Medical Center’s Department of Neurology and the Omaha Veterans Administration Medical Center. In 2006, we successfully recruited a movement science researcher to strengthen the research program in the Rehabilitation Science Laboratory with the goal to obtain extramural funding for the lab.

During 2005, department faculty produced fifty presentations, six papers, one book, and five book chapters, and they participated in seventeen grants. Eight faculty serve as manuscript reviewers for thirteen professional journals; two faculty serve on the editorial boards of four journals; two faculty serve on four grant review panels; and three faculty serve on graduate student committees. One faculty line remains open in the department, and a process is underway to determine the needs of the department.
Publications

College of Arts and Sciences


Ayers, E. M. (2005). Repeating "A half-told and mangled tale": Reading Caleb Williams through Emily Melvile. English Language Notes, 42(4), 24-43.


**College of Business Administration**


**School of Dentistry**


School of Law


**School of Medicine**


**School of Nursing**


### School of Pharmacy and Health Professions


### Other University Publications


Grants

College of Arts and Sciences


Chadwick, S., & Pawlowski, D. R. [Investigators]. Strengthening the foundation of service-learning development assessment and evaluation. Corporation for National Service — $17,595.00 — [1 January 2006-3 November 2006].


Dilly, B. J. [Investigator]. We work for bread: The economic contributions of the Buchanan County Old Order Amish to rural economy. Iowa Historical Society — $1,000.00 — [1 September 2005-30 June 2006].


Gross, E. M. [Investigator]. Construction of voltammetric electrodes for use with capillary electrophoresis coupled to electrogenerated chemiluminescence detection. National Science Foundation, EPSCoR — $3,000.00 — [1 January 2006-31 July 2006].


Pawlowski, D. R. [Investigator]. Service-learning in communication courses across various contexts: Student learning and institutional assessment. Corporation for National Service — $2,000.00 — [1 January 2006-31 December 2006].

Reedy, M. V. [Investigator]. INBRE: Determining the role of the winged helix transcription factor FOXD3 in neural crest development and evolution. National Institutes of Health — $42,244.00 — [1 May 2006-30 April 2007].

Rettig, K. [Investigator]. Service learning in the correctional facilities. Corporation for National Service — $1,000.00 — [1 January 2006-31 December 2006].

Schalles, J. F. [Investigator]. National Aeronautics and Space Administration-Nebraska space grant, year 14. National Aeronautics and Space Administration — $6,000.00 — [1 May 2006-30 April 2007].

Schrage, J. [Investigator]. Travel funding: American Meteorological Society’s conference on hurricanes and tropical meteorology. National Aeronautics and Space Administration — $1,300.00 — [1 April 2006-31 March 2007].


Soukup, J. K. [Investigator]. Structural characterization of S-adenosylmethionine riboswitches. National Science Foundation, EPSCoR — $3,000.00 — [1 January 2006-31 July 2006].


**School of Dentistry**


Latta, M. A. [Investigator]. Laboratory evaluation of localized wear of a new composite resin formula. Dentsply — $1,250.00 — [15 January 2006].

Latta, M. A. [Investigator]. Laboratory evaluation of localized wear of resin reinforced glass ionomer restorative materials. 3M Dental Products Division — $13,000.00 — [1 December 2005].

Latta, M. A., & Friedrichsen, S. [Investigators]. Laboratory evaluation of resin sealant bonding using different conditioning times. Medical Products Laboratories, Inc. — $2,800.00 — [1 August 2005-9 September 2005].

Rocha-Sanchez, S. [Investigator]. The role of central auditory neurons in progressive high frequency hearing loss (PHFHL) using dominant-negative Kcnq4 transgenic mouse models. Deafness Research Foundation.

Rocha-Sanchez, S. M. [Investigator]. The role of the E2F1 modulation of RB1 in cochlear supporting cells to mediate hair cell regeneration. National Institutes of Health.


School of Law


School of Medicine


Agrawal, D. K. [Investigator]. Both AP-1 and CREB amplify NF-kB-induced pro-inflammatory and pro-constrictory effects of (s)-albuterol and (rs)-albuterol. Sepracor, Inc. — $27,296.00 — [1 March 2006-28 February 2007].


Arouni, A., Hee, T. T., Hunter, C. B., Li, H., Maciejewski, S., Mohiuddin, S. M., Mooss, A. N., & Reyes, A. P. [Investigators]. Randomized evaluation of long term anticoagulant therapy (re-ly) comparing the efficacy and safety of two blinded doses of dabigatran etexilate with open label warfarin for the prevention of stroke and systemic embolism in patients with non-valvular…. Boehringer Ingelheim Pharmaceuticals, Inc. — $15,000.00 — [1 January 2006].

Bajenova, O. [Investigator]. Health Future Foundation, School of Medicine research development: The role of hnRNP M4 splicing in the development of cancer metastasis. Health Future Foundation — $156,000.00 — [1 July 2005-30 June 2006].

Bartz, J. [Investigator]. BRIN scholar supply support. National Institutes of Health — $1,000.00 — [1 July 2005-30 June 2006].


Bergren, D. R. [Investigator]. Airway hyperresponsiveness and tobacco smoke exposure. State of Nebraska — $40,000.00 — [1 January 2006-31 December 2006].

Bertoni, J. M. [Investigator]. Open-label multicenter study of the continued safety of istradefylline (KW-6002) in subjects with Parkinson's disease who have recently completed one year of treatment with istradefylline. Kyowa Pharmaceutical, Inc. — $4,600.00 — [1 January 2006].

Bessen, R. A., & Kincaid, A. E. [Investigators]. Routes of prion neuroinvasion following oral infection. National Institutes of Health/NIAID — $1,100,000.00 — [1 May 2003-31 May 2006].

Bewtra, A. K., Casale, T. B., Hopp, R. J., Stokes, J., & Townley, R. G. [Investigators]. Randomized, double-blind, three-arm, placebo-controlled trial to evaluate human pasteurized C1 esterase inhibitor concentrate (CE1145) in subjects with congenital C1-INH deficiency and acute abdominal or facial hereditary angioedema (HAE) attacks. ZLB Behring — $32,750.00 — [1 September 2005].

Bhatia, S. K., Arora, M., Dickerson, D., Lubberstedt, B., Madaan, V., & Walayat, W. [Investigators]. Four-week, double-blind, placebo-controlled, phase III trial evaluating the efficacy safety and pharmacokinetics of flexible doses of oral ziprasidone in children and adolescents with bipolar I disorder (manic or mixed). Pfizer Inc. — $8,004.00 — [1 March 2006].


Casale, T. B. [Investigator]. Probiotic prophylaxis of ventilator associated pneumonia. State of Nebraska.

Casale, T. B. [Investigator]. Randomized, double-masked, placebo-controlled, multicenter dose-regimen study of the efficacy and safety of tolamba in ragweed-allergic rhinitis adults. Dynavax Technologies Corporation.

Casale, T. B., Bewtra, A. K., Hopp, R. J., Stokes, J., & Townley, R. G. [Investigators]. Monitoring the fractional concentration of exhaled nitric oxide (FeNO) in uncontrolled asthma before and after steroid therapy using the aperon no analyzer. Aperon Biosystems, Inc. — $3,829.60 — [24 April 2006].

Casale, T. B., Bewtra, A. K., Hopp, R. J., Stokes, J., & Townley, R. G. [Investigators]. Phase II multicenter, randomized, double-blind, placebo-controlled, parallel-group study of the safety and efficacy of tacrolimus inhalation aerosol in subjects with persistent asthma. Astellas Pharma US, Inc. — $82,000.00 — [1 August 2005].

Casale, T. B., Bewtra, A. K., Hopp, R. J., Stokes, J., & Townley, R. G. [Investigators]. Phase III multicenter study to demonstrate the sensitivity and specificity of aridol (mannitol) challenge to predict bronchial hyperresponsiveness as manifested by a positive exercise challenge in subjects presenting with signs and symptoms suggestive…. Pharmaxis, Ltd. — $109,150.18 — [15 November 2005].

Casale, T. B., Bewtra, A. K., Hopp, R. J., Stokes, J., & Townley, R. G. [Investigators]. Randomized, double-masked, placebo-controlled, multicenter, dose-regimen study of the efficacy and safety of tolamba in ragweed-allergic rhinitis adults. Dynavax Technologies Corporation — $10,000.00 — [21 April 2006].

Casale, T. B., Bewtra, A. K., Hopp, R. J., Stokes, J., & Townley, R. G. [Investigators]. Twenty-six-week, randomized, double-blind, parallel-group, placebo-controlled, multicenter study to evaluate the effect of xolair (omalizumab) on improving the tolerability of specific immunotherapy in patients with persistent allergic asthma. Novartis Pharmaceuticals Corporation — $5,000.00 — [3 November 2005].

Cavalieri, S. J. [Investigator]. Influenza and respiratory syncytial virus surveillance. Surveillance Data, Inc. — $800.00 — [1 June 2006].

Chakkalakal, D. [Investigator]. Overcoming drug resistance in breast cancer chemotherapy. State of Nebraska — $40,000.00 — [1 January 2006-31 December 2006].


Chatterjee, A., Gray, C., Nagy, A., & Varman, M. [Investigators]. Phase III, double-blind, randomized controlled study to evaluate the safety immunogenicity and efficacy of GlaxoSmithKline biologicals hpv-16/18 L1/as04 vaccine administered intramuscularly according to a three-dose schedule (zero, one, six month) in healthy.... GlaxoSmithKline Company — $14,170.00 — [1 March 2006].

Chatterjee, A., & Varman, M. [Investigators]. Multinational, randomized, double-blind, double-dummy comparative study to evaluate the efficacy and safety of telithromycin 25mg/kg given once daily for five or ten days depending on age and previous treatment history versus cefuroxime axetil 15mg/kg given.... Aventis Pharmaceuticals — $5,700.00 — [26 September 2005].

Chatterjee, A., & Varman, M. [Investigators]. Multicenter, randomized, double-blind study comparing the clinical effects of intravenous montelukast with placebo in pediatric patients (ages six to fourteen years) with acute asthma. Merck & Company, Inc. — $6,820.00 — [19 September 2005].

Cullen, D. [Investigator]. Health Future Foundation, School of Medicine research development: Anabolic action of Wnt in the adult skeleton. Health Future Foundation — $75,878.00 — [24 February 2006-30 June 2006].

Cullen, D. [Investigator]. Pulsed electromagnetic fields to restore bone mass. EM Probe Technologies — $5,000.00 — [1 October 2005].


Del Core, M., & Maciejewski, S. [Investigators]. Multicenter, double-blind, randomized study to establish the clinical benefit and safety of vitorin versus simvasatin monotherapy in high-risk subjects presenting with acute coronary syndrome (improved reduction of outcomes: Vitorin efficacy inter-improve it). Schering-Plough Foundation — $5,400.00 — [1 February 2006].

Deng, H. [Investigator]. Genetic basis of osteoporotic fractures and bone mass. National Institutes of Health — $20,205.00 — [1 July 2005-31 August 2005].

Dewan, N. A. [Investigator]. AASM/Pfizer visiting professorships in sleep medicine. Pfizer Inc. — $7,500.00 — [1 April 2006].

Drescher, K. [Investigator]. UNMC COBRE: Role of neuregulins in myelin repair in the CNS and PNS. National Institutes of Health — $267,286.00 — [1 July 2005-30 April 2006].


Dunlay, R. W. [Investigator]. Educational grant for the therapeutic options for the treatment of psoriasis grand rounds. Amgen — $5,000.00 — [16 November 2005].

Fernandez, C. [Investigator]. Healthy kids. State of Nebraska, Department of Health and Human Services — $34,000.00 — [1 January 2006-31 October 2006].
Fitzgibbons, R. J. [Investigator]. American College of Surgery hernia outcomes registry. American College of Surgeons Oncology Group — $28,342.00 — [1 January 2006-30 June 2006].

Fitzgibbons, R. J. [Investigator]. Development of a registry for long-term follow-up of inguinal hernia patients managed by different treatment strategies. American College of Surgeons — $100,952.00 per year — [1 March 2005].

Fitzgibbons, R. J. [Investigator]. Inguinal hernia management: Watchful waiting versus operation. Agency for Health Care Research — $6,292,335.00 — [1 September 99-31 December 2006].

Fleming, A. D. [Investigator]. Maurice Grier symposium. Bard Interventional Products — $1,000.00 — [22 September 2005].

Fleming, A. D. [Investigator]. Maurice Grier symposium. Merck & Company, Inc. — $2,000.00 — [22 September 2005].

Fritzsch, B., & Beisel, K. [Investigators]. Health Future Foundation, School of Medicine research development: Generation of a transgenic mouse that enables overexpression of a gene of interest in an organ/cell specific quantitatively regulated way. Health Future Foundation — $10,400.00 — [1 July 2005-30 June 2006].


Goering, R. V. [Investigator]. Goering drug pool. Multiple sources — $2,400.00 — [November 2005-December 2006].


Gorby, G. L. [Investigator]. Educational support for infectious disease. Impact Group — $1,000.00 — [1 August 2005].

Gorby, G. L. [Investigator]. Educational support for infectious disease. Wyeth-Ayerst Laboratories — $1,000.00 — [1 September 2005].
Gorby, G. L. [Investigator]. Nebraska Center for Bioterrorism Education. State of Nebraska, Department of Health and Human Services — $13,440.00 — [1 July 2005-30 June 2006].

Gorby, G. L. [Investigator]. Nebraska Center for Bioterrorism Education. State of Nebraska — $20,620.00 — [1 January 2006-30 September 2006].

Govindarajan, V. [Investigator]. Cancer Center development/molecular biologist project. Health Future Foundation — $63,533.00 — [1 July 2005-31 January 2007].

Govindarajan, V. [Investigator]. Cancer Center developmental/molecular biologist project. State of Nebraska — $52,215.00 — [1 July 2005-31 January 2007].

Govindarajan, V. [Investigator]. Ras signaling in corneal development. State of Nebraska — $40,000.00 — [1 January 2006-31 December 2006].

Govindarajan, V. [Investigator]. Targeted ablation of the lens in the murine eye. Health Future Foundation — $20,000.00 — [1 July 2004-30 June 2006].


Hallworth, R. [Investigator]. Nebraska Center for Cell Biology: Omaha imaging symposium. Li-Cor, Inc. — $250.00 — [1 July 2005].

Hallworth, R. [Investigator]. Nebraska Center for Cell Biology: Omaha imaging symposium. Olympus — $1,000.00 — [1 July 2005].

Hansen, L. [Investigator]. Analysis of the effects of topically applied agents to Tg.AC skin, Part 1 of 2. Connectics Corporation — $98,428.00 — [1 September 2005-31 August 2006].

Hansen, L. [Investigator]. Health Future Foundation, School of Medicine research development: Luminex multiplex instrument. Health Future Foundation — $40,560.00 — [20 April 2006-30 June 2006].


Hansen, L., Beisel, K., Drescher, K., & Fritzsch, B. [Investigators]. Role of ERBB2 in PNS, skin and ear as revealed by conditional mutation analysis. State of Nebraska — $300,000.00 — [1 October 2005-30 September 2006].


Hanson, N. D. [Investigator]. Characterization of $\beta$-lactamase resistance using molecular diagnostics. Basel University Hospital — $187.50 — [1 March 2006-30 December 2006].

Hanson, N. D. [Investigator]. Characterization of $\beta$-lactamase resistance using molecular diagnostics. U.S. Department of Agriculture — $396.00 — [31 August 2005].

Hanson, N. D. [Investigator]. Comparisons of meropenem activity and molecular mechanisms of resistance to other anti-pseudomonal drugs in populations of Pseudomonas aeruginosa from the infected lungs of individual cystic fibrosis patients. AstraZeneca — $32,772.00 — [15 January 2006-31 August 2007].
Hanson, N. D. [Investigator]. Research protocol for molecular characterization of AmpC resistance and associated plasmid profiles. Spectrum Health — $900.00 — [1 March 2006].

Hanson, N. D., Cavalieri, S. J., & Smith-Moland, E. [Investigators]. Surveillance for AmpC-mediated resistance in community isolates of E. coli and Klebsiella spp. Merck & Company, Inc. — $18,750.00 — [1 October 2005].


Hanson, N. D., & Smith-Moland, E. [Investigators]. Vitek 2 susceptibility development trial data collection protocol: Gn13. BioMerieux Vitek, Inc. — $16,008.00 — [1 April 2006].

Haynatzki, G. [Investigator]. Biomedical computing tools for pancreatic cancer research. National Institutes of Health — $33,892.00 — [1 April 2006-31 March 2007].


Heaney, R. P. [Investigator]. Longitudinal study of a pre-osteoporosis population. Health Future Foundation — Support has ended, but study remains ongoing.

Heaney, R. P. [Investigator]. Phase IV single-blind, open-labeled, single-center, randomized, active-controlled, cross-over pilot study to evaluate the effects of two vitamin-D compounds: zemplar injection and hectorol intestinal absorption of calcium. Abbott Laboratories — $70,114.56 — [21 October 2005-20 October 2006].


Hopp, R. J. [Investigator]. A study to evaluate the hypoallergenicity and tolerance of pediatric elemental 028, an amino acid-based formula for children aged one through ten.


Jensen-Smith, H. C., & Hallworth, R. [Investigators]. Relative contributions of lateral wall components to outer hair cell mechanics. Deafness Research Foundation — $20,000.00 — [1 July 2005-30 June 2007].


Lister, P. D. [Investigator]. Pharmacodynamics of imipenem and meropenem against *Pseudomonas aeruginosa* and *Klebsiella pneumoniae* producing plasmid-encoded AmpC cephalosporinases. Merck & Company, Inc. — $34,534.50 — [31 October 2005].


Loggie, B. [Investigator]. Cancer and smoking disease research program (LB 595): Cancer biology program component 2. State of Nebraska — $110,000.00 — [1 July 2005-30 June 2006].


Mackin, R. B. [Investigator]. Evaluation of human proinsulin for diagnostic test kit. ALPCO Diagnostics — $3,000.00 — [1 March 2006].

Mackin, R. B. [Investigator]. Health Future Foundation, School of Medicine research development: Initial staffing of the proteomics core facility. Health Future Foundation — $20,800.00 — [1 April 2006-30 June 2006].


McLaughlin, B., & Mackin, R. B. [Investigators]. Health Future Foundation, School of Medicine research development: Proteomics core facility. Health Future Foundation — $454,480.00 — [1 July 2005-30 June 2006].

McLaughlin, B., & Mackin, R. B. [Investigators]. Proteomics core facility. State of Nebraska — $437,000.00 — [1 July 2006].

McLaughlin, B., & Swanson, P. [Investigators]. Fluorescence activated cell sorter for the flow cytometry core facility. State of Nebraska — $439,906.00 — [1 July 2005-30 June 2006].

McQuillan, R. J. [Investigator]. Health Future Foundation discretionary: Anesthesiology research program start-up. Health Future Foundation — $30,000.00 — [1 July 2005-30 June 2006].

McQuillan, R. J., Amao, R., Bramble, J. D., Forse, R. A., & Galt, K. A. [Investigators]. Changing safety culture in the perioperative area. Health Future Foundation — $20,000.00 — [1 July 2005-30 June 2007].

Mittal, S. [Investigator]. Controlled randomized study to evaluate and compare the efficacy of a hiatal hernia repair using a primary suture repair with and without the reinforcement of a prosthetic biomaterial (Gore dualmesh plus biomaterial) during laparoscopic Nissen fundoplic…. W. L. Gore & Associates, Inc. — $1,150.00 — [16 January 2006].


Mohiuddin, S. M. [Investigator]. Health Future Foundation, School of Medicine research development: Creighton Community Health Center. Health Future Foundation — $302,387.00 — [1 October 2005-30 June 2006].

Mohiuddin, S. M. [Investigator]. Nebraska Health and Human Services HIV counseling, testing, referral, and partner counseling and referral services: Women's Community Health Center for Minority Women. State of Nebraska, Department of Health and Human Services — $5,000.00 — [1 January 2006-31 December 2006].

Mohiuddin, S. M. [Investigator]. Nurse-assisted tobacco treatment initiative. State of Nebraska, Department of Health and Human Services — $5,000.00 — [1 September 2005-31 August 2006].

Mohiuddin, S. M. [Investigator]. Smoke-free multifamily home project. Environmental Protection Agency — $20,000.00 — [1 October 2005-30 June 2006].

Mohiuddin, S. M. [Investigator]. Supplemental media strategies to reduce exposure to secondhand smoke. State of Nebraska, Department of Health and Human Services — $3,400.00 — [17 October 2005-30 June 2006].


Mooss, A. N., Hee, T. T., Hilleman, D., Li, H., Maciejewski, S., Rovang, K., & Williams, M. A. [Investigators]. T-wave alternans in acute myocardial infarction: An evaluation of the time of testing on its prognostic accuracy. Medtronic, Inc — $10,000.00 — [7 July 2005-6 July 2006].

Mooss, A. N., Maciejewski, S., & Mohiuddin, S. M. [Investigators]. Randomized double-blind placebo-controlled forced-titration phase IV study comparing telmisartan 80mg + hydrochlorothiazide 25mg versus valsartan 160mg + hydrochlorothiazide 25mg taken orally for eight weeks in patients with stage 1 or stage 2 hypertension. Boehringer Ingelheim Pharmaceuticals, Inc. — $4,890.00 — [1 October 2005].


Morrow, L. E., Malesker, M. A., Schuller, D., & Wichman, T. [Investigators]. Phase IV, randomized, double-blind, multicenter, comparator study evaluating the safety of dexmedetomidine compared to IV midazolam in ICU subjects requiring greater than twenty-four hours of continuous sedation. Omnicare Clinical Research, Inc. — $5,500.00 — [1 July 2005].


O'Brien, J. [Investigator]. Health Future Foundation, School of Medicine research development: Effects of genistein and omega-3 fatty acids on human colorectal cancer cell lines and Kupffer cells. Health Future Foundation — $68,755.00 — [1 March 2006-30 June 2007].
Pedersen, W. A. [Investigator]. Effect of PPAR gamma compounds in the APP Tg2576 mouse. GlaxoSmithKline Company — $280,000.00 — [1 January 2006-31 December 2007].


Ramaswamy, S. [Investigator]. Open-label prophylaxis study of lithium plus extended-release carbamazepine (ERC-CBZ) combination for rapid cycling bipolar disorder. Shire Pharmaceuticals — $45,360.00 — [15 December 2005].


Recker, R. R. [Investigator]. Double-blind, placebo-controlled, randomized, multicenter study to assess the efficacy and safety of oral ibandronate 150mg once monthly in postmenopausal women with osteopenia. Hoffmann-LaRoche, Inc. — $10,476.00 — [15 December 2005].

Recker, R. R. [Investigator]. Histomorphometry and micro CT data from normal adult Caucasian humans. Procter & Gamble Company — $107,489.70 — [1 July 2005].


Recker, R. R. [Investigator]. Phase III, multicenter, double-blind, randomized, active-controlled, parallel-group, non-inferiority study comparing 150mg risedronate monthly with 5mg risedronate daily in the treatment of postmenopausal osteoporosis as assessed at twelve and twenty-four months. Sanofi-Synthelabo, Inc. — $12,832.00 — [1 November 2005].

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Recker, R. R. [Investigator]. Zolendronic acid project, zol446h: Study #zol2301e1. Novartis Pharmaceuticals Corporation — $32,500.00 — [1 July 2005].


Recker, R. R., & Lappe, J. M. [Investigators]. Robust and powerful test of candidate genes to bone mass. National Institutes of Health — $170,332.00 — [1 April 2006-31 August 2006].

Reidelberger, R. [Investigator]. Regulation of food intake and body adiposity by peptide YY. National Institutes of Health — $247,958.00 — [15 February 2006-31 January 2011].

Reidelberger, R. D. [Investigator]. Research career scientist award. U.S. Department of Veterans Affairs — $780,000.00 — [1 April 2004-31 March 2009].

Rendell, M. S. [Investigator]. Multicenter, randomized, double-blind, parallel-group, placebo-controlled study to assess the efficacy and safety of twelve-week treatment with vildagliptin (LA237) 50mg qd in subjects with impaired glucose tolerance (IGT). Novartis Pharmaceuticals Corporation — $30,741.96 — [1 August 2005].

Rendell, M. S. [Investigator]. Multicenter, randomized, double-blind, placebo-controlled, phase III trial to evaluate the efficacy and safety of saxagliptin (BMS-477118) as monotherapy in subjects with type 2 diabetes who have inadequate glycemic control with diet and exercise. Bristol-Myers Squibb — $22,118.50 — [1 July 2005].

Rendell, M. S. [Investigator]. Multicenter, randomized, double-blind, placebo-controlled phase III trial to evaluate the efficacy and safety of saxagliptin (BMS-477118) in combination with metformin in subjects with type 2 diabetes who have inadequate glycemic control on metformin alone. Bristol-Myers Squibb — $23,728.00 — [1 July 2005].

Rendell, M. S. [Investigator]. Phase I/IIa, randomized, placebo-controlled, double-blind, parallel-group study of safety tolerability pharmacokinetics and activity of fourteen days of oral dosing with the 2s,4r enantiomer of ketoconazole (dio-902) in subjects with type 2 diabetes mellitus. DiObex, Inc. — $1,779.68 — [1 February 2006].

Rendell, M. S. [Investigator]. Phase II, randomized, double-blind, placebo-controlled, twenty-four-week dose finding study to evaluate the efficacy and safety of 20 mg, 40mg and 80mg of MCC-257 in patients with mild to moderate diabetic polyneuropathy. Mitsubishi Pharma Corporation — $16,667.00 — [1 January 2006].

Rendell, M. S. [Investigator]. Pivotal, long-term, open-label, parallel study of the efficacy and safety of human insulin inhalation powder in patients with type 1 diabetes mellitus. Eli Lilly and Company — $27,495.00 — [1 August 2005].

Rendell, M. S. [Investigator]. Randomized, double-blind, fifty-two-week, parallel-group, multicenter phase 111b study to evaluate the effects of rosvustatin 10mg rosvustatin 40mg and atorvastatin 80mg on urinary protein excretion in hypercholesterolaemic diabetic patients with moderate .... AstraZeneca — $4,400.00 — [1 January 2006].

Rendell, M. S. [Investigator]. Randomized, double-blind, placebo-controlled, forced-titration, phase IV study comparing telmisartan 80mg + hydrochlorothiazide 25mg versus valsartan 160mg + hydrochlorothiazide 25mg taken orally for eight weeks in patients with stage 1 or stage 2 hypertension. Boehringer Ingelheim Pharmaceuticals, Inc. — $6,373.12 — [1 August 2005].

Rendell, M. S. [Investigator]. Randomized, double-blind, placebo-controlled, multicenter phase II study designed to assess the efficacy and safety of FK1706 in subjects with painful diabetic neuropathy. Astellas Pharma US, Inc. — $19,250.00 — [1 November 2005].

Rendell, M. S. [Investigator]. Randomized, double-blind, placebo-controlled, multicenter study evaluating the efficacy and safety of adding symlin to lantus (insulin glargine) in subjects with type 2 diabetes who are not achieving glycemic targets. Amylin Pharmaceuticals, Inc. — $116,996.80 — [1 October 2005].
Rendell, M. S. [Investigator]. Twelve-week, multicenter, randomized, double-blind, parallel-group, dose-ranging study to assess the efficacy safety and tolerability of laf237a 25mg bid 25 50 100mg od compared to placebo in patients with type 2 diabetes and forty-week extension to a twelve-week mul... Novartis Pharmaceuticals Corporation — $14,798.13 — [1 August 2005].

Romero, J. R., Fernandez, C., Hudson, C., Moffatt, K., O'Keefe, C., & Yaghmour, A. [Investigators]. Phase IV randomized partially blinded multicenter study to evaluate the safety and immunogenicity of a booster vaccination with GlaxoSmithKline's tetanus toxoid reduced diphtheria toxoid and acellular pertussis vaccine adsorbed (TDAP boostrix) co-admin.... GlaxoSmithKline Company — $1,500.00 — [1 February 2006].

Sattar, S., & Petty, F. [Investigators]. Twelve-week, prospective, double-blind, placebo-controlled, randomized clinical trial of quetiapine for alcohol dependence and comorbid anxiety. Health Future Foundation — $20,000.00 — [1 July 2005-30 June 2007].

Schuller, D., Canaday, P. D., Morrow, L. E., & Wichman, T. [Investigators]. Multicenter, three-year longitudinal prospective study to identify novel endpoints and compare these with forced expiratory volume in one second (FEV-1) for their ability to measure and predict COPD severity and its progression over time. GlaxoSmithKline Company — $102,443.04 — [1 March 2006].


Silberstein, P. T., & Townley, R. G. [Investigators]. Assess the impact of once-per-cycle correction and maintenance dosing of darbepoetin alfa in subjects with non-myeloid malignancies with anemia due to chemotherapy. Amgen, Inc. — $3,000.00 — [2 August 2005].


Svolos, T. [Investigator]. Health Future Foundation discretionary: Travel grant: Dr. Jean-Pierre Klotz. Health Future Foundation — $1,000.00 — [27 January 2006-30 June 2006].
Swanson, P. [Investigator]. Rag mechanisms in lymphoid cell development and cancer. State of Nebraska — $82,120.00 — [1 October 2005-30 September 2006].

Thomas, P., Bajenova, O., & Forse, R. A. [Investigators]. Health Future Foundation, School of Medicine research development: CFA receptor structure function and metastasis. Health Future Foundation — $147,258.00 — [1 July 2005-30 June 2006].

Thomas, P., Bajenova, O., & Forse, R. A. [Investigators]. Health Future Foundation, School of Medicine research development: Endotoxin processing by Kupffer cells. Health Future Foundation — $80,918.00 — [1 July 2005-30 June 2006].

Thomson, K. S., Black, J., & Smith-Moland, E. [Investigators]. Comparison of Phoenix and vitak 2 ESBL confirmatory tests against E. coli and Klebsiella isolates with well-characterized $\beta$-lactamases. Becton Dickinson and Company — $17,760.00 — [1 August 2005].

Thomson, K. S., Hanson, N. D., & Smith-Moland, E. [Investigators]. Analysis of $\beta$ lactamases of three K. pneumoniae isolates. Hahnemann University Hospital — $1,020.00 — [1 November 2005-28 February 2006].


Townley, R. G. [Investigator]. Randomized, double-blind, placebo-controlled study of xolair on eNO exhaled breath condensate and basophil in moderate to severe asthma. Novartis Pharmaceuticals.

Townley, R. G., Bewtra, A. K., Casale, T. B., Hopp, R. J., & Stokes, J. [Investigators]. Multicenter, randomized, double-blind, triple-dummy, placebo-controlled, parallel-group, four-week study assessing the efficacy of fluticasone propionate aqueous nasal spray 200mcg qd versus montelukast 10mg qd in adolescent and adult subjects with asthma and s... GlaxoSmithKline Company — $2,500.00 — [1 July 2005].


Wang, Z. [Investigator]. Estrogen signaling in normal and transformed cell growth. National Institutes of Health — $294,175.00 — [1 April 2006-31 March 2011].


Wilson, D. R. [Investigator]. AACDP distinguished visiting professorship award in psychiatry. American Association of Chairs of Departments of Psychiatry — $8,000.00 — [15 August 2005-14 August 2007].


**School of Nursing**


Recker, R. R., & Lappe, J. M. [Investigators]. Robust and powerful test of candidate genes to bone mass. National Institutes of Health — $170,332.00 — [1 April 2006-31 August 2006].
Sandhurst, H. C., & Cosimano, A. [Investigators]. The positive pregnancy project. March of Dimes Foundation — $5,528.00 — [1 January 2006-31 December 2006].

Schwartz, M. D. [Investigator]. Creighton University School of Nursing and Alegent school health partnership. Alegent Health — $147,598.00 — [1 July 2005-31 December 2006].

**School of Pharmacy and Health Professions**

Barr, C., & Dash, A. K. [Investigators]. Challenges associated with national pharmaceutical stockpile to respond to terrorist event and some viable alternative. School of Pharmacy and Health Professions Faculty Research Development — $12,880.00 — [2004-2005].


Bessen, R. A., & Kincaid, A. E. [Investigators]. Routes of prion neuroinvasion following oral infection. National Institutes of Health, NIAID — $1,100,000.00 — [1 May 2003-31 May 2006].

Bradberry, J. C. [Investigator]. Health Future Foundation program: Research in the School of Pharmacy and Health Professions. Health Future Foundation — $115,000.00 — [1 July 2005-30 June 2007].


Dash, A. K. [Investigator]. Preformulation and formulation development for a novel radioprotectant: ON1210.NA. Palm Pharmaceuticals — $26,000.00 — [2004-Present].


Goertz, H. [Investigator]. Project focus (Finding our call: Uniting and serving) adolescents. Corporation for National Service — $2,000.00 — [1 January 2006-15 June 2006].


Haddad, A. R., Coover, K., & Faulkner, M. A. [Investigators]. Integration of service-learning and reflection into a geriatric pharmacy course. Corporation for National Service — $2,000.00 — [1 January 2006-3 November 2006].

Hilleman, D., Christensen, K., Foral, P., & Malesker, M. A. [Investigators]. Insulin infusion protocols in the icu: An efficiency evaluation. LifeScan — $50,940.00 — [15 February 2006].


Limpach, A. L. [Investigator]. Presentation of genes involved in cartilage differentiation. National Science Foundation/EPSCor — $1,800.00 — [July 2005-December 2005].

Limpach, A. L. [Investigator]. The role of Hoxc8 in cartilage differentiation and maturation. School of Pharmacy and Health Professions Faculty Research Development Grant — $10,285.00 — [2005-2006].

McQuillan, R. J., Amao, R., Bramble, J. D., Forse, R. A., & Galt, K. A. [Investigators]. Changing safety culture in the perioperative area. Health Future Foundation — $20,000.00 — [1 July 2005-30 June 2007].

Mooss, A. N., Hee, T. T., Hilleman, D., Li, H., Maciejewski, S., Rovang, K., & Williams, M. A. [Investigators]. T-wave alternans in acute myocardial infarction: An evaluation of the time of testing on its prognostic accuracy. Medtronic, Inc — $10,000.00 — [7 July 2005-6 July 2006].

Morrow, L. E., Malesker, M. A., Schuller, D., & Wichman, T. [Investigators]. Phase IV, randomized, double-blind, multicenter, comparator study evaluating the safety of dexmedetomidine compared to IV midazolam in ICU subjects requiring greater than twenty-four hours of continuous sedation. Omnicare Clinical Research, Inc. — $5,500.00 — [1 July 2005].

Shara, M. [Investigator]. Evaluation of brain tissues neurotransmitters following oral administration of super citrimax (HCA-SX) and chromemate for one year. InterHealth Nutritionals, Inc. — $15,000.00 — [15 June 2006].


Skrabal, M. Z., & Stading, J. A. [Investigators]. 80+ hemorrhagic cohort study. Massachusetts Veterans Epidemiology Research and Information Center — $3,000.00 — [September 2004-September 2006].
**Other Creighton Grants**


Chadwick, S. [Investigator]. Strengthening service-learning and community partnerships at Creighton University. Corporation for National Service — $20,000.00 — [1 July 2005-3 November 2006].

Chadwick, S. & Pawlowski, D. R. [Investigators]. Strengthening the foundation of service-learning development assessment and evaluation. Corporation for National Service — $17,595.00 — [1 January 2006-3 November 2006].


Reed-Bouley, K. [Investigator]. Spring break trips: Hurricane Katrina rebuilding in Gulfport, Mississippi. Corporation for National Service — $2,000.00 — [3 January 2006-31 March 2006].

Salzinger, F. [Investigator]. Health Future Foundation discretionary: Marketing/public relations campaign for research in health sciences. Health Future Foundation — $70,000.00 — [21 March 2006-30 June 2007].


Theses and Dissertations

August 2005

Liu, Yaozhong. Genetic linkage to human height is confirmed at 9q22 and Xq24. Doctor of Philosophy (Biomedical Sciences) – Dr. Hong-Wen Deng (Major Advisor).

Liu, Yongjun. Whole genome linkage scan and association analysis for obesity genes. Doctor of Philosophy (Biomedical Sciences) – Dr. Hong-Wen Deng (Major Advisor).

Song, L. Development of cochlear nonlinearities in normal and Tshr mutant mice. Doctor of Philosophy (Biomedical Sciences) – Dr. Edward Walsh (Major Advisor).

December 2005

Borics, A. Conformational properties of $\beta$-turn forming model tetrapeptides examined using a combination of theoretical and experimental methods. Doctor of Philosophy (Biomedical Sciences) – Dr. Sándor Lovas (Major Advisor).

Cantemir, V. Role of membrane-type matrix metalloproteinases and tissue inhibitor of matrix metalloproteinase in neutral crest cell migration. Doctor of Philosophy (Biomedical Sciences) – Dr. Philip R. Brauer (Major Advisor).

Heredi-Szabo, K. Biological effects of 1GnRH-III and its analogs on human cancer cells expressing GnRH receptors. Doctor of Philosophy (Biomedical Sciences) – Dr. Sándor Lovas (Major Advisor).

Hervert, J. S. Measuring intensity ratios of L x-rays for selected elements ranging from Z=39 to Z=50 using x-ray fluorescence. Master of Science (Physics) – Dr. Sam J. Cipolla (Major Advisor).


Novella, N. S. The identification of Gulf surge events at Yuma, Arizona and their relationship with the Mexican monsoon. Master of Science (Atmospheric Sciences) – Dr. Arthur V. Douglas (Major Advisor).

May 2006

Abdalhamid, B. The Influence of ampC expression and penicillin binding protein binding on the variation of $\beta$-lactam induction potential in three genera of Enterobacteriaceae. Doctor of Philosophy (Medical Microbiology and Immunology) – Dr. Nancy D. Hanson (Major Advisor).

Hassaballa, A. E.-S. Generation and analysis of transgenic mice expressing catalytically inactive recombination activating gene-I. Doctor of Philosophy (Medical Microbiology and Immunology) – Dr. Patrick C. Swanson (Major Advisor).

Picconi, J. L. In vitro regulation of Ptgs2 and Nos3 expression in clonal osteogenic cells following pulsatile fluid flows. Doctor of Philosophy (Biomedical Sciences) – Dr. Mark Johnson (Major Advisor).

Smith, H. C. J. Developmental alterations in the distribution of specific lateral wall proteins modify outer hair cell mechanical properties. Doctor of Philosophy (Biomedical Sciences) – Dr. Richard Hallworth (Major Advisor).

Swanger, M. Coherent $p^0$ production in ultra-peripheral Au-Au collisions at 200 GeV at RHIC. Master of Science (Physics) — Dr. Janet Seger (Major Advisor).

Wickman, P. A. Molecular characterization of fluoroquinolone resistance in Streptococcus pneumoniae. Doctor of Philosophy (Medical Microbiology and Immunology) – Dr. Kenneth S. Thomson (Major Advisor).
Faculty Index

-A-
Abel, P. W., 37, 43, 48, 66, 71, 85
Abram, J. T., 6
Abrams, J. P., 6
Adickes, E. D., 67
Adkins, N. R., 39, 40
Agrawal, D. K., 43, 44, 57, 61, 65, 85
Aikin, R. C., 28
Aizenberg, S., 28
Akhter, M. P., 43, 44, 56, 62, 73, 88
Alsharif, N. Z., 75
Amin, Z., 44, 51
Amirkhan, B., 44, 50
Anand, K., 54
Anderson, D. K., 57
Anderson, R. J., 65
Andresen, J., 68
Andrus, K. L., 42, 81
Arora, M., 86, 87
Arouni, A. J., 63, 80, 86
Aryana, A., 60
Attard, T., 60
Augustine, S. C., 75, 76
Ault, J., 8
Austin, T. R., 28
Ayers, E. M., 28

-B-
Baechle, T. R., 28
Bagchi, D., 47, 67, 75, 76, 80, 81
Bajenova, O., 86, 98
Barger-Lux, M. J., 44, 65
Barkmeier, W. W., 85
Barone, E., 67
Barr, C., 100
Barritt, L. C., 31
BarTELs, C. L., 79, 81
Bartz, J. C., 16, 17, 44, 52, 60, 67, 75, 79, 81, 86, 101, 103
Beisel, K. W., 12, 35, 41, 44, 51, 60, 61, 64, 71, 86, 89, 90
Belshak, M., 37, 45, 86
Bergman, R. B., 28
Bergren, D. R., 17, 45, 86
Bertoni, J., 45
Bessen, R. A., 86, 100
Bewtra, A. K., 46, 86, 87, 98
Bewtra, C. B., 42
Bhattaia, S. C., 45, 63, 67, 68
Bhattaia, S. K., 45, 86, 87
Biggs, S. G., 41
Birkholt, M., 34
Black, J., 98

-Blanchard, S., 75, 76
Block, M., 55
Bockman, C. S., 85, 87
Borchers, P. J., 42, 43, 83, 85
Bothmer, J. A., 102
Boyd, S. T., 76, 78
Bradberry, J. C., 100
Braden, B. J., 74
Bradley, M. E., 87
Bramble, J. D., 75, 77, 80, 83, 89, 93, 100, 101
Brauer, P. R., 11, 45, 56, 58, 83, 87, 95, 103
Brock, B. L., 28, 32
Browne, M., 6
Bruce, L. L., 11, 12, 62
Brumback, R. A., 30, 46, 48, 68, 66, 81
Bucher, G. S., 28, 29
Bucko, R. A., 8, 9, 29
Buffalohead-McGill, T., 102
Burke-Sullivan, E. C., 29

-C-
Cadogan, J., 30
Calef, S. A., 30
Callone, P. K., 30, 46, 81
Canaday, P. D., 97
Cao, X. N., 56
Carlson, G., 2
Carlson, J. W., 9, 12
Carnazzo, J., 88
Carroll, L. R., 41, 42, 66
Carter, L., 83
Casale, T. B., 44, 46-48, 50, 57, 63, 69, 66, 87, 94, 97
Catherwood, M., 30
Cavaliere, S. J., 87, 91
Cavell, W. T., 85
Cerutis, D. R., 84
Chadwick, S. A., 82, 83, 102
Chakkalakal, D. A., 47, 87, 88
Champ-Blackwell, S., 82
Charles, P. C., 42, 81
Chatterjee, A., 37, 57, 62, 62-79, 76, 81, 88
Chen, L. D., 39
Cherney, I. D., 30, 31
Cherney, M., 27, 31, 83
Chick, A. W., 81
Christensen, C. M., 80
Christensen, K., 101
Cipolla, S. J., 31, 103
Clabeaux, J. L., 31
Clark, B. E., 26
Clark, J. E., 8
Clark, T. D., 31
Cochran, T. M., 101
Coleman, R. M., 48, 66
Conway, T., 55
Cook, C. T., 37
Cook, T. J., 21
Cooke, E., 6
Cooney, R. T., 30
Cooever, K., 100, 101
Coppard, B., 77, 79, 101
Cosgrove, D., 69
Cosimano, A., 100
Crapon de Crapone, M. D., 12
Crawford, S. E. S., 31, 35, 36
Crowder, A., 102
Csontos, J., 28
Culhane, M. B., 42, 43
Cullen, D. M., 43, 69, 73, 88, 95
D-
Dallon, C., 42
Danford, D. A., 44
Danielson, M. A., 34
Dash, A. K., 78, 100, 101
Davies, K. M., 44, 54, 55, 66, 74, 75
Davies, M. R., 59
Davis, E. M., 80
Del Core, M. G., 18, 57, 61, 88
Deng, H. W., 42, 47, 49, 50, 52, 53, 55, 58, 59, 67, 73-75, 88, 103
Denney, S. D., 57
DeSimone, E. M., 76
Desmangles, J. C., 49, 74
Destache, C. J., 76, 100
Dewan, N. A., 88
Dickel, C. T., 31, 84, 97
Dilly, B. L., 8, 31, 83
DiLorenzo, S., 85
Doll, D., 9
Douglas, A. V., 32, 33, 83
Dowd, F., 42, 46, 62, 66, 85, 95
Doyle, B. A., 33
Drescher, K., 92
Drescher, K. M., 17, 56, 58, 69, 71, 86, 90
Duckworth, W., 39
Duda, G., 103
Dunlay, R. W., 88
Durow, P., 32
Dvorniky, V., 49

-E-
Eckerson, J. M., 32
Edwards, P. C., 41, 42, 66, 84, 85
Elliott-Meisel, E., 32
Erickson, C. C., 57
Esterbrooks, D. J., 97
Gross, S., 5, 101
Gustafson, A., 40

Haddad, A. M., 77, 78, 101
Hallback, R., 12-15, 33, 52,
72, 90, 91, 103
Hamilton, W. R., 78
Hamm, D., 9, 33
Hansen, L. A., 10, 49, 51, 56,
62, 90
Hansen, T. P., 67
Hanson, N. D., 77, 52, 67-69,
73, 90, 91, 98, 103
Happe, H. K., 56, 67
Harmless, W., 9
Harper, C. L., 8, 33
Harris, B. M., 28
Hause, J., 2
Hauser, R., 9, 33
Haynakzti, G., 59, 52, 55, 57,
60, 64, 74, 84, 94, 102,
97, 99
He, D. Z. Z., 12, 13, 52, 55
Heaney, R. P., 44, 48, 51, 53,
54, 61, 63, 64, 66, 72,
75, 97, 99
Hee, T. T., 44, 37, 53, 68, 94,
101
Hess, S., 41, 84
Hilleman, B. E., 46, 54, 60,
63, 76, 78-81, 91, 94,
100, 101
Holmberg, J., 72
Holmberg, M. J., 68
Hopp, R. L., 54, 67, 64, 86, 87,
91, 98
Houghton, B. A., 51, 58, 66, 68,
72, 77
Houtz, L. E., 33, 34, 54
Hu, Q. L., 54
Hudson, C., 97
Huerter, C. J., 62
Huggett, K. N., 38, 91
Hulce, M., 6, 23, 27, 71
Hunter, C. B., 54, 68, 78, 86
Hunter, W. J., 34, 43, 57
Huss, M. T., 34, 36

Ibarrola, J. L., 41, 84
Ineck, J. R., 25, 76, 81
Ishii-Jordan, S., 31

Jaspers, A., 7, 9
Jeffries, W. B., 66, 85, 91
Jensen, G. M., 75, 78, 80, 101
Jergenson, M. A., 41
Jia, S. P., 55
Johnson, M. L., 55
Johnson, T. C., 42, 81
Jones, D. H., 56
Jones, R. M., 78, 79
Jorgensen, C., 87
Jung, L. K., 92, 99
Jurgensmeier, C., 9

Kavan, M. G., 56
Kelly, M., 83, 85
Kelsey, W. P., 41
Kessler, J., 46
Kestermeier, C., 10
Khan, I. A., 57, 71
Khan, M. M., 59, 66, 79, 81
Khandalavala, T., 89
Kimberling, W. J., 56
Kimmes, N., 41, 42, 66, 84
Kincaid, A. E., 16, 17, 44, 60,
65, 76, 78, 79, 81, 86,
100, 101
Kirby, E. L., 34, 36
Kissell, J. L., 7, 34, 56, 57, 63,
78
Kitchel, A. C., 42, 81
Kizer, R., 91
Knezevic, J. A., 13, 65
Knoop, F. C., 48
Knowles, K. L., 41
Korlakunta, H. L., 57
Kosoko-Lasaki, O., 34, 48, 52,
54, 57, 63, 65, 66, 78
Kraochovil, J., 86
Kugler, J. D., 57

Ladino, J., 34
Lambert, G. P., 36
Lanspa, T. J., 52
Lappe, J. M., 49, 59, 66, 74,
75, 91, 92, 95, 99
Latta, M. A., 6, 41, 64, 85
Lawler, M. G., 34, 36
Leak, G. K., 34
Leavelle, T. N., 34, 35
Lenz, T. L., 28, 79
Li, H. G., 44, 57, 58, 86, 94,
101
Limpach, A. L., 67
Lister, P. D., 12, 58, 59, 73, 92
Loigreen, A. S., 48
Loggie, B. W., 69, 72, 74, 92
Lohman, H., 77, 89, 90
Lovas, S., 14, 53, 43, 45, 47,
48, 54, 59, 63, 92,
103
Lubberstedt, B., 86
Lucas, T. L., 43
Lund, R. L., 59, 91
Lust, E., 79
Lynch, H. T., 45-50, 52,
55-57, 59-65, 67, 68,
70-72, 92, 93
Lynch, J., 102
Lynch, J. R., 59, 60
Narotam, P. K., 62
Nath, R., 39
Naughton, W., T., 85
Nichols, D. H., 11, 12, 51, 62
Nichols, M. G., 33, 35, 37, 52, 61, 71, 83, 94
Niederman, M. S., 56
Nielsen, L., 35
Nipper, H., 63
Nitsch, T. O., 40
Norris, J., 25, 97
Norton, N. S., 41
Nystrom, K. K., 80

O'Brien, J., 94
O'Brien, R. L., 34, 48, 57, 63, 78
O'Keeffe, C., 97
O'Keeffe, J., 35
Ohri, L. K., 47, 76, 80, 81
Omologa, M., 48, 55, 56, 66
Opere, C. A., 80

Packard, K. A., 60, 63, 80
Padilla, R., 79
Padron, V. A., 78
Park, P. I. P., 80
Patterson, E., 59, 66, 79, 81
Pauley, S., 51, 61, 64
Pawlowski, D. R., 34, 36, 83, 102
Peak, F., 34, 57, 63, 78
Pearson, E., 43
Pearson, W., 102
Pedersen, W. A., 64, 95
Perlstein, A., 83, 85
Petty, F., 56, 60, 63, 67, 68, 95, 97, 99
Petzel, D. H., 10, 45, 56, 62, 64, 95
Phan, K. T., 35
Pinch, W. J. E., 99
Platz, J. E., 36
Porter, J., 64, 91
Preheim, E. C., 63
Puri, V., 65
Purtile, R., 34

Quinn, T. H., 63, 65, 66

Rafferty, K., 53, 54, 65
Ramaswamy, S., 67, 68, 95
Raval, V., 40
Ray, S., 80
Raynovich, W., 80, 81, 100
Real, D. L., 43

Reed-Bouley, K., 102
Reedy, M. V., 83, 84, 87
Reidelberger, R. D., 14, 47, 96
Rendell, M. S., 62, 66, 96, 97
Reno, R. R., 36
Reptinger, S., 66
Rettig, K., 84
Reyes, A. P., 18, 60, 79, 86
Rich, E. C., 66
Riley, L. A., 73, 83, 89, 100
Rocha-Sanchez, S. M., 47, 42, 44, 67, 85
Roche, V. F., 75, 81
Roddy, N., 36
Romero, F. A., 46
Romero, J. R., 72, 97
Roth, K. S., 66
Rovang, K., 57, 58, 94, 101
Rule, A. M., 51, 75, 77, 81
Ryan-Haddad, A., 100, 101

Saini, T. S., 41, 42, 66, 84, 85
Sawkowski, H. A., 66, 91
Salzinger, F., 102
Salzman, T., 34, 36
Sandhurst, H. C., 100
Santos, E. E., 67, 72
Sarma, D. P., 52, 67, 72
Sattar, S. P., 67, 97
Schealer-Haines, J., 83, 89
Schalles, T. F., 84
Scheirton, L., 79, 80
Schoening, A. M., 75
Schrage, J., 84
Schuler, J., 7
Schuller, D., 47, 94, 97, 101
Scofield, M. A., 46, 60, 62, 69, 95, 98
Seever, M. T., 40
Seger, J., 27
Seger, J. E., 84, 103
Selde, S., 62
Selk, E. E., 36
Selk, G. Z.
Shaddy, R. S., 6
Shaner, J., 42, 56
Shara, M., 67, 81, 101
Sharma, A., 67
Sharma, P., 57
Sheets, J. L., 42
Shen, X., 57, 68, 97
Shuler, S., 34, 36
Sidebottom, D. T., 84
Silberstein, P. T., 56, 97
Silva, E., 47, 68
Simkins, R. A., 36
Sindelar, S., 68
Singh, S., 6, 101
Siracuse, M. V., 77, 83, 89, 100
Skrabal, M. Z., 81, 101
Slattery, B., 48
Smith, D. D., 15, 37, 71, 72, 92
Smith, J. M., 68
Smith, T., 102
Smith-Molander, E., 91, 98
Sokol, M. S., 56, 68
Sonnino, R. E., 57, 69
Sorensen, C., 61
Soukup, G. A., 73, 34, 35, 55, 61, 69, 72
Soukup, J. K., 34, 35, 55, 61, 84
Soukup, G. A., 37, 68
Specht, P., 88
Spencer, B., 68
Stading, J. A., 79, 81, 101
Stefaniak, M. H., 37
Stenberq, S. J., 37
Stephens, W. O., 7, 8, 37
Stokes, J., 69, 86, 87, 97, 98
Stone, N. J., 32, 37
Storlie, C., 40
Stout, J. R., 32
Su, B., 37
Sudhakar, A., 69
Sullivan, P., 84, 97
Svolos, T., 49, 70, 71, 97
Swanson, P. C., 16, 49, 57, 65, 93, 98, 103
Sype, J., 68
-T-
Taggart, K. J., 102
Tan, J., 40
Taylon, C., 48, 62
Taylor, M. H., 39
Teply, L. L., 43
Thambidorai, S. K., 57
Thiede, J., 37
Thomas, P., 98
Thomson, K. S., 17, 44, 45, 47, 52, 69, 73, 98, 103
Thorson, A., 73
Tichy, C. A., 37
Tilleman, J., 62, 79
Townley, F., 97
Townley, R. G., 46, 54, 86, 87, 97, 98
Townley, T., 98
Treonis, A. M., 37
Tu, Y. P., 46, 56, 71, 98
-U-
Vanchena, L. A., 36-38
Varman, M., 62, 72, 88
Vasiloff, B., 30, 46, 81
Vinton, M. A., 38
-V-
Waggoner, W. T., 27
Walsh, E. J., 69, 103
Wang, B., 72
Wang, M., 72
Wang, Z. Y., 38, 72, 74, 92, 99
Warrier, R., 72
Watson, P., 45, 47, 49, 62, 72, 92, 93
Wear, R., 62, 79
Welch, A. W., 38
Welig, J. V. M., 72, 73
Wendling, A. E., 7, 38
Weskamp, C., 81
-Westman, G. H., 42
Weston, M. D., 99
White, M. M., 42, 43
White, R., 8, 38
Whitten, R. U., 43
Wichman, T., 94, 97, 101
Wilken, M., 75, 81
Williams, M. A., 56-58, 73, 94, 101
Wilson, A. F., 79, 80
Wilson, D. R., 38, 73, 84, 95, 97, 99
Wilson, P. K., 33
Wilwerding, T. M., 42
Winn, R. E., 38
Winters, A., 75
Wiseman, C. M., 43
Witmer, R., 83, 85
Wolter, D. J., 59, 62, 73
Wright, A., 95
Wright, W. M., 38
Wunsch, J. S., 38, 39, 83, 85
-Y-
Yaghmour, A., 97
Yasmin, T., 47, 67, 76, 81
Yee, J., 13, 83, 88, 94
York, A., 39, 40
Yuan, J., 9, 19
-Z-
Zach, T. L., 72
Zeng, W., 85
Zhang, X. T., 72, 74
Zuegner, M. C., 29

Rev. William Rigge, SJ, conducting a physics lecture, 1906
Illustrations

All of the images that appear in this document are part of the photographic collection of the Creighton University Archives.

- Creighton University Observatory (1914) ....................... Front cover
- Jesuit members of the Arts and Sciences faculty (1907) ................ .26
- St. Joseph Hospital drug room (1897) ................................. 82
- Summer Session (1913) .................................................. 102
- Rev. William Rigge, SJ, conducting a physics lecture (1906) ................ 107
- An observatory instrument (© 1900) ................................. Back Cover

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We perceive the skies, then why not the skies' gifts, too?

Astronomers by Marcus Manilius
[Translated by G. P. Goold]