a full spectrum

UNIVERSITY OF NEBRASKA MEDICAL CENTER

Department of Internal Medicine

2008 DEPARTMENTAL REPORT
The Department of Internal Medicine at the University of Nebraska Medical Center provides the region and the world with a full spectrum of clinical, research and education excellence. Together, we’re working to serve our patients well, to ask and answer new questions in medicine – and to prepare future physicians to do the same.
With this edition of the annual report, we celebrate the progress the UNMC Department of Internal Medicine continues to make in remaining an important local, regional and national resource in the areas of clinical service, medical education and biomedical research.

The department, through the activities of its faculty, continues to demonstrate expertise in all of these areas of academic medicine. We do that by attracting patients who come to UNMC for our specialized and caring attention, by garnering multiple teaching awards, through recognition as one of the top departments in the education of both medical students and residents, and through the expansion of both the quality and quantity of our peer-reviewed research endeavors.

Each institution has its own particular and unique culture. One of the characteristics that distinguishes the UNMC Department of Internal Medicine is its constant drive to incorporate all three aspects of our academic mission—clinical service, education and research—as equally valid and important pursuits.

This has resulted in the development of a team approach in which each individual is valued for his/her contribution and the efforts of the team itself are more important than any individual faculty member.

I am delighted that this report highlights the accomplishments and activities that have occurred in the past and will continue to expand in the future. I am equally delighted to be part of a faculty that continues to have an extraordinary commitment to broadening the academic and educational boundaries of internal medicine and to providing state-of-the-art care for any patient who comes to us for assistance.
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By 2030, it’s estimated, one in every five Americans will be over the age of 65.

With the percentage of this population growing quickly, so is the need to provide appropriate care and education for these patients. To address the growing requirements of seniors and their caregivers, UNMC has announced the creation of a new $10.2 million center on the UNMC campus: the Home Instead Center for Successful Aging. The naming of the building recognizes a major gift made through the University of Nebraska Foundation by Paul and Lori Hogan, co-founders of Home Instead Senior Care.

This specialized venue represents a new model in geriatric care for seniors, and one that will be unique to the Section of Geriatrics and Gerontology at UNMC. One floor will be used for outpatients to provide geriatric medicine and geriatric psychiatric clinics and to conduct clinical research. Another floor will host community outreach programs as well as a community fitness center; the third level will house the academic geriatric offices and research space. The approximately 30,000-square-foot, three level facility is expected to open by Spring 2010.

The center will be a true team effort, encompassing the expertise of the spectrum of care providers—including the physician and psychiatry faculty’s colleagues in nursing, pharmacy, physical therapy, surgery and exercise science.

Together, these professionals bring their specific clinical and teaching interests to contribute to new knowledge in their respective areas. These areas include successful aging, goal setting, palliative care, complex and multiple illness, cognitive disorders, elder abuse, depression and geriatric syndromes such as incontinence, falls and vision and hearing impairment.

“Geriatrics is a team sport,” Dr. Jane Potter noted. “The center designation acknowledges that. When all the team members are involved, geriatric care can be one of the most satisfying of all the specialty areas of health care. Our vision for the center is as an interdisciplinary site for education, research and clinical care.”

Growth in clinical and translational research at the center will be made possible by creating a more conducive environment for clinical trials for Alzheimer’s disease and other geriatric-
“Our vision for the center is as an interdisciplinary site for education, research and clinical care.”

Dr. Jane Potter
BY 2030, THE NUMBER OF AMERICANS AGE 65 AND OLDER IS EXPECTED TO NEARLY DOUBLE, AS WILL THE NUMBER OVER AGE 85. MORE THAN 75 PERCENT OF THOSE OVER 65 HAVE AT LEAST ONE CHRONIC MEDICAL CONDITION THAT REQUIRES ONGOING CARE AND MANAGEMENT.

SOURCE: INSTITUTE OF MEDICINE OF THE NATIONAL ACADEMIES
"The Center for Successful Aging will bring trainees into contact with older people who are more typical of the individuals they will meet in practice."

Dr. Jane Potter

specific disorders. In addition, the nature of Home Instead's work with their customers offers collaborative possibilities with the Section of Geriatrics and Gerontology.

Providing education and resources for diagnosis and preventative care will be another important component of the center. Caregivers, as well as seniors, will find support and assistance—whether they are just beginning the journey of care or are advancing through its stages.

The design of the Community Education and Outreach Center features a wellness clinic for health screenings and education, case management services, recreation and nutrition services and a fully equipped fitness and exercise area. A 126-seat auditorium will be used for public and professional education and will include telehealth capabilities for outreach education and clinical consultations.

Equally important to what the center can teach seniors and their families is the education opportunity it will provide to UNMC medical students, residents, primary care providers and community leaders. For more than 20 years, UNMC has been a leader in geriatric education with federal and foundation grants in excess of $6 million. The section has excelled in geriatrics training, building on this knowledge to give students a kind of real life, hands-on encounter.

“Health sciences campuses care for the most ill patients, which creates a biased view of who most patients are and what most clinical encounters are like,” Dr. Potter said. “The Center for Successful Aging will bring trainees into contact with older people who are more typical of the individuals they will meet in practice.”

This is an opportunity to change some of the “hidden curriculum” around geriatrics, the section chief noted. “Almost everyone fears their own aging, and the easiest way to deal with fear is to put it out of mind and ignore its importance,” she added. “Unfortunately, too few health care trainees learn that core information that all providers need and far too few enter focused careers in geriatrics.”

Dr. Potter said she believes the Center for Successful Aging plays a key role in addressing this need by bringing health professions students in contact with seniors. Not only will students have an opportunity to see patients who are not acutely ill as they are in the hospital, but they can see them in a different environment—one where they can better experience the gratification of working with this population.

The HIV/HCV co-infection clinic, which opened in 2007, is the only facility of its kind in the region. This clinic serves a specialized patient population: the 15 percent of local patients who have co-infections involving viral hepatitis and HIV.

A new Diabetes Center opened in April 2008 to provide comprehensive specialized care, education and research.
The simplest way to describe what drives medical researchers may be with one word: Why?

“Why?” can lead to years of investigation. It’s a journey where a scientist’s path can take unexpected turns as more information is revealed. Often, it’s a journey dependent on ongoing financial support to maintain momentum in getting those answers.

This story began in a dingy research lab in the basement of the Omaha Veterans Administration Medical Center (OVAMC) in 1971. Michael Sorrell, MD, a newly trained hepatologist from New Jersey, joined VA career biochemist Anthony Barak, PhD, and former graduate student Dean Tuma, PhD, to understand why patients who drank too much alcohol got liver disease often leading to cirrhosis. This small, but effective, team—scientist/clinician plus basic scientists—pursued this question with relentless focus.

Soon, the Liver Studies Unit was formed and multiple other investigators were active in understanding the pathophysiology of alcoholic liver disease. In 1986, the Experimental Immunology Laboratory, based at OVAMC and under the direction of Lynell Klassen, MD, began collaborative studies in understanding the role of alcohol in immune response relative to alcoholic liver disease. This approach led to new investigative studies and broadened the understanding of alcoholic-induced liver inflammation and fibrosis.

In 1996, another group from Internal Medicine became involved in alcohol studies, when Joseph Sisson, MD, began evaluating the role of alcohol and alcohol metabolites on pulmonary function—again expanding both the breadth and depth of scientific inquiries relative to the effects of alcohol on biologic systems.

During the past 36 years, faculty from Internal Medicine have gained national and international acclaim for understanding adverse effects of alcohol and alcohol metabolites on cells leading to tissue dysfunction and clinical disease. Sentinel findings of these investigators include:

Metabolism of alcohol causes the production of small molecular aldehydes which interact with macromolecules (such as proteins and DNA) to form adducts which alter structure, leading to functional abnormalities at the cellular level.
“We are trying to connect the dots between environmental exposures (i.e. alcohol) that patients have and the pathobiology of airway diseases.”

Dr. Joseph Sisson
Metabolically altered proteins can serve as new antigens which induce the immune system to recognize normal proteins as abnormal, mounting a deleterious autoimmune response against normal tissue.

Alcohol has a potent effect on the non-specific defense barriers in the lung. These abnormalities are enhanced if a patient combines smoking with alcohol ingestion. Metabolically derived consequences of both tobacco and alcohol often utilize the same adduct-forming aldehyde structures.

These findings have resulted in enhanced understanding of how alcohol effects the trafficking of protein within a cell, the ability of cells to divide and proliferate, the induction of programmed cell death, mechanisms whereby normal versus abnormal reparative mechanisms result following cell injury, the effect of alcohol on DNA-controlled cell proliferation and differentiation, potential modification of immune responses to decrease clinical signs and symptoms, and the need for a combined approach in dealing with patients with alcohol overuse syndromes.

Over the years, Internal Medicine has produced more than 32 principal investigators working in alcohol-related fields, more than $68 million in NIH and VA research funding, funding of a VA National Center for Alcohol Research, two NIH Method to Extend Research in Time (MERIT) investigators, and the appointment of two members to the NIH NIAAA National Advisory Council.

Dr. Sisson, chief of the Section of Pulmonary, Critical Care, Sleep & Allergy Medicine, knows what it’s like to chart new territory in research. He was the first to report nitric oxide, a byproduct of smoking, regulates the beating of cilia—hair-like structures inside the lungs.

He has applied his findings to study the effects of alcohol on airway clearance. Alcohol intake over the long term and in high doses is shown to lead to loss of cilia responsiveness, increasing the risk of pneumonia or other lung diseases caused by smoking or exposure to dusts.

Funded continually since 1991 by the NIH and recognized with an NIH MERIT award extending his R01 grant to nine years, Dr. Sisson is collaborating with Todd Wyatt, PhD, to explore new angles: Can cilia be protected with medication? Is the impact of alcohol on cilia reversible? This study on the effects of both cigarette smoke and alcohol is unique.

UNMC is one of only three major alcohol study groups focusing on the lung in the United States.

“Any time you have a chemical modification that’s going bad, endothelial cells remove the abnormal proteins. But when you drink alcohol, the cells can’t do that.”

Dr. Geoffrey Thiele
responses,” said Geoffrey Thiele, PhD. “If I give you proteins from an elephant, we shouldn’t wonder why we develop antibodies to those. But if I take your own protein and change it ever so slightly, why does the body recognize that? If we can understand that, we can understand how we maintain self-tolerance.”

During the past two decades, Dr. Thiele, current director of the Experimental Immunology Laboratories, has teamed with Dr. Klassen using a model of alcoholic liver disease to evaluate the same cellular reactions. Their work is funded by NIH and VA grants; Dr. Klassen holds a 10-year NIH MERIT award.

Researchers observe that aldehyde metabolites of alcohol cause the immune system to recognize altered proteins as “foreign” and induce antibody and T-cell responses. Animal models and some human studies suggest part of the damage incurred by the liver following alcohol exposure is mediated by this immune mechanism.

“Alcohol research requires a true team effort”

Dr. Lynell Klassen

IN 2007, THESE SCIENTISTS IN THE UNMC DEPARTMENT OF INTERNAL MEDICINE WERE RECOGNIZED WITH SPECIAL AWARDS:

2007 DISTINGUISHED SCIENTIST AWARD WINNERS
LYNELL KLASSEN, MD
JAMES O’DELL, MD
JOSEPH SISSON, MD

2007 NEW INVESTIGATOR AWARD WINNERS
TED MIKULS, MD, MSPH
DEBRA ROMBERGER, MD

DEPARTMENT OF INTERNAL MEDICINE EXTRAMURAL GRANT FUNDING

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<td>Other National</td>
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<tr>
<td>Total</td>
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Resident Experts

At the Turner Park Clinic in Midtown Omaha, UNMC residents take charge of patient care and clinic management.

If residents in the Turner Park Internal Medicine Clinic had an official motto, it might be “learning by doing.”

It’s their responsibility to oversee patient care and clinic operations and take part in the decisionmaking process, an opportunity not usually accorded residents. In the case of these physicians, the experience is allowing them to take part in a kind of ownership they ordinarily wouldn’t experience until well into their careers.

The Turner Park clinic was established in 1996 to provide care to a previously underserved area of the city. Today, physicians and staff care for a socially and economically diverse population, ranging from lower-income patients to businesspeople who work nearby.

Residents are assigned a half-day of clinic each week, a day that remains the same throughout their residency. At the start of their training, residents inherit their patients from a graduate; they build on this base through hospital inpatient discharges and new patient assignments. Eight residents and two attending physicians see a total of approximately 40 patients every weekday.

An electronic notification system sends all labs, x-rays, notes and other relevant information directly to the resident. Nurses use the residents as the first point of contact for patient triage.

The Turner Park model works because it provides the continuity necessary for an effective resident education, noted Joel Bessmer, MD, clinic director and faculty in the Section of General Internal Medicine.

“This is a great educational model that helps our residents learn the ambulatory arena,” he said. “Traditionally, teaching and educating internal medicine residents about this area has been somewhat neglected and it can be difficult to have discussions about on a national level.

“We’ve made this work because of the stability and support of our attending physicians, our clinic staff and the department, as well as the fact that we’ve been able to build a patient population that understands what this clinic is about.”

“It’s an eye-opening experience,” said ambulatory chief resident Jay Anderson, MD, who was appointed to the post after his
“Our vision for the center is as an interdisciplinary site for education, research and clinical care.”

Dr. Joel Bessmer
third year. He is joined in a leadership role by Kristine Erlandson, MD, UNMC chief resident, and Michael Feeley, MD, VA chief resident. “Our faculty truly let us run the clinic. The patients we see know us as their physicians. We are the ones they call with a stuffy nose or abdominal pain.”

In 2003, the job of clinical medical director was given to the ambulatory chief resident and the clinic named a board of directors. Made up of a representative from each half-day of clinic, the board meets monthly to discuss everything from patient care to decisions about office equipment.

“One of the biggest parts of every board meeting is when we open up the floor for conversation,” Dr. Bessmer said. “Residents bring up issues and everyone talks about ideas for improvement. Their colleagues are there to give them feedback about how to deal with an experience and, if it’s negative, to make sure it doesn’t happen again.”

Outcomes have included redesigning patient flow to deal with a frustration residents had in seeing patients in a timely manner. Board members proposed a new model that’s reduced patient wait time and increased efficiency among physicians and staff.

Recently, the board also garnered the support of faculty and the hospital to hire a full-time social worker and a mental health professional for the clinic. Thanks to generous donations from patients, the clinic also has been able to purchase bulk generic medications and dispense them to patients in need at the discretion of the resident team and social worker.

Once rated well below average in patient satisfaction surveys, Turner Park now sits second from the top.

“They’ve led remarkable change,” said Dr. Bessmer. “The residents are completely engaged in their clinic.”

The residents’ commitment to the clinic and the people they serve extends beyond office hours. Annually, they participate in an Adopt-a-Patient holiday drive; a few years ago, a team took brushes in hand to give the outside of the clinic a fresh coat of paint.

“Our patients are some of the most appreciative that I run across,” Dr. Anderson said. “They realize that they’ll have a new doctor every three or four years and that’s ok with them. These patients know they receive great care and that they’re involved in being part of helping residents learn. I feel privileged to have been a part of that.”

### by the numbers 2007

**EDUCATION**

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<th>151</th>
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<td>427</td>
<td>medical student clerkships and rotations</td>
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**CLINICAL**

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<td>hospital patient days</td>
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<td>138</td>
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<td>4,492</td>
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**RESEARCH**

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Combining leading-edge cardiac treatment with innovative research

The Section of Cardiology offers extra care and procedures in cardiac imaging not available elsewhere in the region, nation or around the world.

As director of the Cardiac Imaging Program, Dr. Tom Porter has become internationally known for his pioneering work in the use of cardiac microbubbles for imaging and therapeutics. He continues his work utilizing microbubbles to view heart chambers and heart muscle via therapeutic ultrasound. This innovative approach is proving itself an invaluable and potentially superior alternative to traditional ultrasound.

Therapeutically, Dr. Porter and his team have demonstrated that microbubbles can specifically direct molecular and therapeutic agents to sites of coronary artery inflammation in experimental models. He has recently begun correlative studies to measure the use of cardiac magnetic resonance imaging (MRI) and cardiac computed axial tomography (CAT/CT) scan compared to more traditional imaging modalities of cardiac ultrasound and catheterization.

Through his research in echocardiography, Dr. Porter has discovered a theory about the increased risk of death when using contrast
during procedures, and has also convinced the Federal Drug Administration (FDA) to revise recommendations regarding recovery times for patients who receive contrast agents as part of their diagnostic procedure.

Dr. Dan Anderson has joined this investigative team and is currently funded by a four-year National Scientist Development Grant through the American Heart Association. His work details the role of inflammation in atherosclerosis and the use of microbubble technology in monitoring vascular inflammation. Dr. Anderson anticipates this research will result in the development and refinement of techniques and tools that will allow the imaging and monitoring of vascular injury, diabetic atherosclerotic disease, and mechanical vascular injury after balloon angioplasty.

The section has long been a leader in health care informatics through the longstanding work of Dr. John Windle. Funding through the National Library of Medicine has allowed the development and implementation of a broad variety of health informatics initiatives, an area at the leading edge of redesigning workflow and support by providing measurable metrics. Most recently, this research has included evaluation of physician acceptance of new technology, implementation of computerized physician order entry, and guideline modeling.

Other featured activities of the Section of Cardiology include:

- Offering the region’s only comprehensive heart failure and cardiac transplantation program (directed by Dr. Ioana Dumitru), supporting innovative strategies in population-based heart failure management and implanted ventricular assist devices.
- Performing not only routine percutaneous interventions, but also supporting regional cardiologists in cutting-edge intravascular ultrasound, atherectomy and percutaneous treatment for peripheral vascular disease.
- Providing a Lipid/Risk Services clinic in a leading effort for preventive approaches to lipid management, dietary aspects of heart disease management and specific exercise counseling.
- Supporting a leading cardiac electrophysiology program, a combined activity with the Department of Pediatrics, to examine both the clinical and physiologic consequences of genetic-based channelopathies.
- Providing state-of-the-art cardiac electrophysiologic mapping and ablation, using radio frequency and cryoablation, as well as a program of evaluation of genetics and arrhythmias, particularly the long-QT syndrome.
- Developing educational programs utilizing three-dimensional computer modeling to enhance the education of medical students, residents and Cardiology fellows.

JOHN WINDLE, MD

DANIEL ANDERSON, MD, PHD
J. TIMOTHY BALLER, MD
WARD CHAMBERS, MD
IOANA DUMITRU, MD
ARTHUR EASLEY JR., MD
CHRISTOPHER ERICKSON, MD
JOHN HAAS, MD
DANIEL MATHERS JR., MD
EDWARD O’LEARY, MD
THOMAS PORTER, MD
EUGENIA RAICHLIN, MD
THOMAS SEARS, MD
SCOTT SHURMUR, MD
MONIQUE SMITH, MD
NATTAPONG SRICHAROEN, MD
KEITH WEEKS, MD
FENG XIE, MD
Educating patients about responsible skin care

Teaching prevention is as much a part of what we do as providing clinical care. We aim to give patients the information and resources they need to protect themselves.

The Section of Dermatology serves a truly all-inclusive patient population—inpatients and outpatients, infants to those over age 100. A variety of patients are seen with a range of skin conditions, including the more common such as acne, warts and eczema, as well as congenital skin disorders that include hemangiomas, ichthyosis and blistering diseases in newborns, and autoimmune disorders in the elderly.
We have unique expertise in caring for UNMC post-transplant patients, both solid organ and hematologic transplantation, who are at high risk for skin malignancies.

The section provides adult and pediatric services at the Internal Medicine, Pediatric and Surgery Clinics on the UNMC campus.

In addition to outpatient clinics, the section also provides clinical support to other Department of Internal Medicine sections, to the Olson Women’s Health Center and to private practice physicians in Clarkson Tower. There is unique expertise in caring for UNMC post-transplant patients, both solid organ and hematologic transplantation, who are at high risk for skin malignancies. Referrals come from Nebraska and beyond, including South Dakota, Iowa, Kansas and Missouri.

Dermatology’s goal for each patient is to be an active participant in their care: to make sure they have an effective understanding of their skin disease, why it occurred and how it will be treated. Because many skin diseases are chronic, the treatment plan is heavily dependent on giving patients the education they need to help prevent reoccurrences over time.

Since the 1930s, the incidence of melanoma and non-melanoma skin cancer has doubled each decade; basal cell skin cancer is the most common form of cancer in the United States. Increasingly, malignancies are being seen in younger patients as well as in higher numbers.

To address this growing concern, the Section of Dermatology regularly takes part in preventative health education events. In 2007, section chief Dr. Kristie Hayes and physician assistant Marcia Pennington participated in many community skin cancer screenings and presented to high school students and HIV care providers and educators. Dr. Hayes also served as a presenter on skin disorders at the Update for HIV Care Providers and Educators, held at the Scott Conference Center in October 2007.

In recognition of her achievement and impact on her profession and commitment to her community, Dr. Hayes was nominated as a Woman of Distinction by the YWCA Omaha in 2007.

The comprehensive dermatology core curriculum marked its second year in 2007. This innovative educational program provides lectures to fourth-year medical students and to house officers in internal medicine, family medicine, pediatrics and emergency medicine. In addition, a wide ranging community education program has been implemented.

Community dermatologists who serve as guest lecturers are an integral part of our internal medicine speaking series. In 2007, speakers included dermatologists Drs. Brian Swick, Anthony Griess, Christopher Huerter and Jason Papenfuss.
Addressing a growing need for diabetes care and research

The Section of Diabetes, Endocrinology and Metabolism (DEM) treats a full range of endocrine and diabetes-related health issues from prevention of diabetes and its complications to clinical care of all types of diabetes and management of the full range of its complications. Comprehensive care and outstanding case management are provided to patients with type 1 and type 2 diabetes and to the hospitalized diabetes patient, particularly those with significant co-morbidities.

Patients come not only from the local community, but also from the region and around the world. The physicians provide special expertise and a clinical focus on thyroid nodules and thyroid cancer, diabetes of the young adult, pregnant patient and transplant patient, and cystic fibrosis-related diabetes.

These focus areas of clinical care speak to the collaborative approach of the section. One of the section’s core beliefs is that working with other professionals as a team is best for the patient and also provides greater opportunities for research collaboration.

THE NEBRASKA MEDICAL CENTER’S NEW DIABETES CENTER PROVIDES A GROWING POPULATION OF THOSE WITH DIABETES A SOURCE FOR EDUCATION, TREATMENT AND PREVENTION.
Evidence of a collaborative approach can be found in the new Diabetes Center, which opened in April 2008. Designed to address the needs of the estimated 10 percent of Nebraskans who have diabetes, the center brings together comprehensive care and education, specialty physicians who manage specific diabetic complications and an enhanced capacity for telehealth.

Research highlights for 2007 include the work of Dr. Larsen and Dr. James Lane who study the metabolic consequences of pancreas and kidney transplantation. Dr. Larsen’s NIH-funded research focuses on multiple nontraditional factors that may contribute to vascular risk after transplantation including abnormalities of vitamin D and parathyroid hormone, inflammation and insulin resistance.

Dr. Lane and Dr. Vijay Shivaswamy are interested in identifying causes, ways to diagnose and prevent early pancreatic failure and new onset diabetes after pancreas and kidney transplant. Dr. Lane has also studied mechanisms for diabetic micro-vascular complications and new approaches to identify type 1 diabetes risk as part of the NIH-funded Trial Net.

Dr. Larsen also works with Native American tribes to identify novel, community-based strategies to prevent diabetes and diabetic complications through a grant from the Indian Health Service Native American Research Center for Health.

Funded by the NIH and the VA, Dr. Frederick Hamel and Dr. Robert Bennett have focused on the intracellular signaling and processing that occurs in metabolic disease. Dr. Bennett has shown that the hormone relaxin and related peptides have antifibrotic effects in the liver, and may trigger multiple signaling pathways in multiple tissues. Dr. Hamel’s research is focused on the contribution of insulin-degrading enzymes to the intracellular action of insulin, which has implications for a variety of diseases, beyond the development of diabetes itself, including Alzheimer’s and vascular disease.

A new health outcomes program is evaluating new paradigms of care for diabetes management in young adults and pregnant women. Directed by Dr. Lane and Dr. Lynn Mack-Shipman, this approach demonstrates how better glucose control helps improve outcomes in these specific populations. Developing a formal educational program for UNMC students and diabetes educators will enhance the translation of these findings into clinical care models.

In addition, the section has developed a Web-based clinical thyroid nodule and thyroid cancer registry. Designed not only to obtain medical information, but also family history, exposure history, dietary history and occupational history, the registry will provide data to evaluate patients for other risk factors. The project has been jointly funded by the Department of Internal Medicine, UNMC Eppley Cancer Center and the Department of Otolaryngology.

The annual diabetes symposium for health professionals attracts health professionals from throughout the region. In 2007, more than 100 people attended the event at the Qwest Center, led by faculty from the section. The feature topic was diabetes disparities in minority groups; presenters reviewed the current diabetes guidelines, approaches to nutrition, education guidelines and discussed case studies.
Gastroenterology and Hepatology

Bringing new technologies and treatments to answer important questions

Our physicians’ expertise in endoscopic ultrasound and a long history of wide-ranging research in liver studies have made us a respected program in academic gastroenterology. The Section of Gastroenterology and Hepatology is the provider of expert consultation for liver disease and gastroenterology to a multi-state area with special expertise in the treatment of inflammatory bowel disease, liver cirrhosis and hepatocellular cancer. More than 200 patients are treated annually for hepatitis C, including those in clinical trials of potentially breakthrough medications.

UNMC hepatologists regularly evaluate entry into UNMC’s internationally recognized liver transplantation program. In 2007, the transplant team performed more than 90 adult liver transplants. In addition, the section maintains special interest in the care and rehabilitation of patients who have undergone small bowel transplantation. Dr. Fedja Rochling manages the adult aspects of this program, helping patients prepare for the pre- and post-operative aspects of this complex surgery.

In July 2007, Dr. Grant Hutchins returned to the section after receiving advanced training...
at the University of Florida in endoscopic ultrasound. He brings a new level of expertise to this procedure, one that is important to the diagnosis and management of hepatobiliary and pancreatic disease. Endoscopic ultrasound allows the radiographic device to be placed immediately adjacent to the stomach and intestine—dramatically enhancing visualization and access for biopsy. Since Dr. Hutchins joined us, he has performed more than 300 of these procedures. His work is one part of our dedicated endoscopic retrograde cholangiopancreatography (ERCP) practice, which treats diseases of the pancreas, liver and biliary tree.

In 2007, the unit’s work continued the history of basic research in the area of alcoholic liver injury, and as well as extending this work to other organs. In addition, investigators in the group have been developing interest and projects in translational research (combined clinical and basic approaches) with clinical investigators in the Section of Gastroenterology and Hepatology.

Other Liver Study Unit research includes work led by Dr. Natalia Osna and Dr. Mark Mailliard to study the treatment efficacy of hepatitis C and the combined effects of ethanol, or alcohol consumption, on antigen presentation in liver cells.

A planned clinical trial conducted by Dr. Mailliard will attempt to improve recombinant interferon alpha (IFN) signaling by including betaine, a component that improves methylation process, thereby activating defective IFN signaling in infected cells. Dr. Osna’s group will observe the restoration of IFN signaling by monitoring phosphorylation of signal transduction factors and their attachment to DNA in peripheral blood cells, which are also affected by virus.

The Section of Gastroenterology and Hepatology has the oldest established fellowship program at UNMC. In 2007, it hosted eight fellows: six in gastroenterology and two in hepatology. Fellows continue to score in the top 10 percent in the GI in-service exam.

GI/hepatology faculty serve in leadership positions in a number of national medical organizations. Dr. Tim McCashland is president of the International Liver Transplant Association; Dr. Renee Young serves on the board for the Crohn’s & Colitis Foundation of America (CCFA). In 2007, UNMC helped host a first-ever educational event for CCFA patients.
Serving the wide-ranging, long-term needs of our patients

A GROWING HOSPITALIST PROGRAM FOCUSES ON MEETING THE UNIQUE NEEDS OF HOSPITAL INPATIENTS, WHILE RESEARCH INVOLVES ASKING AND ANSWERING QUESTIONS RELATED TO HEALTH LITERACY AND DISPARITIES AND BIOINFORMATICS.

Physicians in the Section of General Internal Medicine (GIM) focus on comprehensive care for the adult patient. General internists have special expertise in managing multiple chronic conditions, such as high blood pressure, diabetes and congestive heart failure that may involve coordinating care of various specialists. In addition to patient care, academic physicians teach medical students and residents, as well as conduct research to improve health and health care delivery.

Doctors in GIM have diverse clinical interests and areas of special expertise. Some are office-based practitioners at one of our seven Omaha locations, including the Omaha Veterans Affairs Hospital. The section recently has expanded services in two areas: hospital medicine and women’s health.

Hospitalist physicians work closely with office-based physicians to coordinate the care of patients requiring hospital admission; they also work extensively with hospital management to improve the quality and
efficiency of inpatient care. Currently UNMC has five hospitalists: Dr. Terri Batterman, Dr. Micah Beachy, Dr. Julie Fedderson, Dr. Chad Vokoun and Dr. Jason Shiffermiller. This program is different than most in the region because the physicians are academic hospitalists—teachers and researchers as well as practitioners—who work closely with students and residents.

The women’s health program provides comprehensive care in one location to serve women throughout their lives. Dr. Grace Davis—who was the first GIM physician to see patients at the new Olson Center for Women’s Health, located in the Durham Outpatient Center—was joined by two additional physicians in mid-2008.

A major, new focus of research in GIM is in the area of health literacy and health disparities. Dr. Phyllis Nsiah-Kumi, who joined the section in October 2007, uses her background in health literacy to develop studies on diabetic adults’ diabetes-related knowledge and risk perception for their children. A comprehensive ongoing survey of 100 to 200 diabetic adults will result in the development of multi-media patient health communication tools that can be used in clinics and in patients’ homes.

The focus of research for Dr. James Campbell is clinical informatics, the science of information management for healthcare, which has been instrumental in guiding the architecture and implementation of advanced terminology systems in The Nebraska Medical Center electronic health record (EHR) and are employed in health care systems across the U.S. As part of influenza epidemic reporting for 2007, the EHR interfaced clinical information systems with the Nebraska Public Health Network and the Centers for Disease Control. For the second year in a row, patient data was part of international reporting that tracked the path of influenza.

Other physician researchers study such diverse topics as thyroid disease, how doctors make diagnoses, and how to reduce unnecessary antibiotic prescriptions.

In March 2007, Dr. David O’Dell was named the first LeeRoy Meyer Professor of Medicine. Dr. Meyer was legendary for utilizing Socratic teaching techniques in medical student education. Dr. O’Dell and Dr. Scott Neumeister—who share teaching responsibilities for the Internal Medicine senior elective—are dedicated to continuing Dr. Meyer’s legacy of innovative teaching and critical thinking. A new Internal Medicine education center has been named in honor of Dr. Meyer.

Innovations in outpatient resident education continue to be incorporated into the resident group practice at the Turner Park Clinic. Under the guidance of faculty advisors Dr. Joel Bessmer and Dr. Vokoun, residents learn not only about patient care but also how to organize and run a practice.

The Cedar Point Biological Station near Ogallala, Neb., has long been held as a valuable research and learning environment for students. In 2008, Dr. Devin Nickol taught Field Epidemiology to fourth-year UNMC medical students, as well as UNL undergraduate biology majors who have an interest in medicine, public health or epidemiology. Dr. Nickol also continues to teach Integrated Clinical Experience classes at UNMC.
Valuable diagnoses combine with a goal to optimize function in the aging.

The Section of Geriatrics and Gerontology provides clinical care for individuals over age 65 who have complex health care needs, functional disabilities and a combination of social or psychological considerations.

Since 1985, the Geriatric Assessment Program has served as the region’s comprehensive, interdisciplinary evaluation source for elderly patients and their families. The program focuses on patients who are experiencing memory loss and/or other complex health problems that rob them of their ability to perform essential day-to-day activities.

The patient team consists of a geriatrician, geriatric psychologist, social worker, nursing staff and geriatric pharmacist. Together, they provide intensive evaluation and formulate a plan of care based on not only the team’s recommendations but also considering the patient’s and family’s goals. The team works with the patient and family over four to six weeks to implement the plan and make modifications as necessary.
The Geriatric Consultation Clinic offers patient services as a supplement to the care provided by the patient’s primary physician. These patients face twofold challenges unique to their age: often a number of chronic medical conditions as well as geriatric syndromes, including incontinence, gait disorders and falls, mobility difficulties, primary depression and problems with vision and hearing.

This multi-disciplinary team strives to look at the complete patient picture that only begins with diagnosis, to also focus on the functional issues that contribute to the patient being less independent than they would like to be.

Geriatric Primary Care Clinics cater to the spectrum of health and illness experienced by those over age 65. Clinic hours are offered five days a week, with an assessment clinic held two mornings per week. Appointments are scheduled in 30-minute increments, in order to give ample time to address multiple and complex problems.

Since 2001, the Home Care Program has offered primary care to a limited number of older persons who live at home but who are too physically frail to come to our clinics. Dr. Debra Mostek and Alice Tvrdik, APRN, visit these patients in their own home environment as well as at area assisted living facilities, underscoring our commitment to providing total care to our patients, no matter where they are.

Most recently, the section announced the development of the Home Instead Center for Successful Aging. This facility, to be built on the UNMC campus, will serve as a centralized clinical, research and educational resource for seniors and their caregivers. Groundbreaking took place in Summer 2008; the facility is expected to open by Spring 2010.

In 2007, Dr. Kalpana Padala, house officer in internal medicine, received the Nancy and Ronald Reagan Alzheimer’s Scholarship Fund Award. She was recognized for her research into pathophysiology of Alzheimer’s dementia, notably in understanding statins’ effect on cognition and why they seem to impair memory in some patients. Section chief Dr. Jane Potter has served as a research mentor for Dr. Kalpana; their co-authored article on statin-induced decline in cognition was published in 2006.

In the past year, the Nebraska Geriatric Education Center (NEBGEC) received a three-year extension and $1.2 million in grant funding from Health Resources and Services Administration for its geriatric-based, rural education center. Since its inception, NEBGEC has reached providers in 75 percent of Nebraska’s 93 counties. Unique in its scope, the program offers an interdisciplinary mini-fellowship curriculum to health care providers in medicine, nursing, physical therapy, pharmacy and physician’s assistants.

Participants receive 80 hours of training over 12 to 18 months; training is offered through a combination of local conferences, televised education and online education. So far, 100 health care professionals have enrolled in this program. Recently, NEBGEC faculty also have been piloting a rural assessment program in conjunction with providers in Pender, Neb. Recruitment for the next group of mini-fellows in the NEBGEC program began in July 2008.

Since 2007, Dr. William Lyons, Section of Geriatrics and Gerontology, and Dr. Chad Vokoun, Section of General Internal Medicine, have been funded by the John A. Hartford Foundation to provide geriatric-focused Chief Resident Immersion Training (CRIT). The curriculum focuses on examining complex geriatric clinical issues as well as management and consulting skills. In June 2008, 30 UNMC final-year residents and program directors gathered for a weekend to hone their skills in intensive leadership training.
Infectious Diseases

Providing complex care and conducting innovative research for a diverse patient population

The Section of Infectious Diseases provides diagnosis, treatment and prevention for a wide variety of diseases caused by microbes, in a number of specialized programs.

The HIV/AIDS program, directed by Dr. Susan Swindells, offers specialized care to people with HIV/AIDS through a comprehensive clinical program, the largest of its kind in the region. This program serves approximately 700 patients in the greater Midwest; outreach clinics are held in Grand Island every eight weeks. The UNMC program is the regional AIDS Education & Training Center. Dr. Swindells also collaborates with Dr. Howard Gendelman in research projects involving HIV/AIDS.

The HIV/AIDS program has a special interest in underserved minorities and disparities in health care. With a focus on opportunistic diseases, particularly tuberculosis (TB), Dr. Miguel Madariaga has published in the area and also expands the program’s influence to the TB clinic at the One World Community Health Center.

In 2007, the Hepatitis Co-infection Clinic was opened on the UNMC campus. Overseen by Dr. Ziba Jalali, the clinic team provides the complex care required for the...
approximately 15 percent of the regional HIV patient population who have both HIV and viral hepatitis.

Infectious Diseases also includes the Immunocompromised Host Infectious Disease (ICH-ID) program, started by Dr. Alison Freifeld to address infections in patients in the Oncology and Solid Organ Transplant programs. These immunosuppressed patients often develop complex and serious infectious complications. Dr. Alison Freifeld, Dr. Andre Kalil, Dr. Diana Florescu and their team offer specialized knowledge and 24/7 consultative care for these patients.

The ICH-ID group engages in research in fungal infection management, cytomegalovirus prevention and host immune modulation to prevent infection in vulnerable transplant patients. They have significantly expanded the program’s research efforts to include statistical methodology and the development of protocols and studies in small bowel transplant patients. Recently, the ICH-ID team added a laboratory program emphasizing new technology to rapidly detect infections in this vulnerable patient population. Drs. Freifeld and Kalil are members of national guideline committees for infection management in high-risk populations.

Healthcare infection prevention and control is an important part of the section’s work, dealing with resistant bacteria such as methicillin-resistant Staphylococcus aureus (MRSA). Dr. Mark Rupp serves as a team member of the UNMC Staphylococcal Research Group, providing clinical support and patient care expertise. A planned project award proposal will be submitted to the NIH in 2008; it is designed to examine the role of staphylococcal biofilm in promoting antibiotic tolerance, genetic diversification and controlled dispersal/metastatic disease. Dr. Rupp is medical director of the widely recognized healthcare infection control program at The Nebraska Medical Center, and works with pharmacy antimicrobial specialist Elizabeth Hermsen to direct the hospital’s antibiotic stewardship program.

The Section of Infectious Diseases is actively involved in bioterrorism research and preparedness. Dr. Philip Smith directs the Biocontainment Unit at The Nebraska Medical Center, one of only three such facilities in the United States. The 10-bed unit is unique in its capacity to handle patients exposed to hazardous infectious diseases such as SARS, avian influenza and smallpox. A highly skilled staff of 30 volunteer nurses and respiratory therapists perform regular training drills to ensure the facility is ready at a moment’s notice.

The section hosted a national consensus conference on biocontainment patient care units. In May 2007, Dr. Smith lectured on the topic of standards for high isolation units at the European Network of Infectious Diseases International Workshop on Highly Infectious Diseases, held in Rome, Italy.

The section’s educational efforts include teaching UNMC medical students as well as residents in training, practicing health care providers, community health professionals and patients. In October 2007, the AIDS Education & Training Center presented a one-day conference for health care workers, dentists and pharmacists, health department representatives and Nebraska AIDS Project case managers.

The section is actively involved in the Nebraska Infection Control Network, an award-winning regional cooperative that has trained over 4000 health care providers. Section faculty also collaborate with the UNMC College of Public Health to train physicians, nurses, public health workers and first responders at the Center for Biopreparedness Education in regional and national preparedness via live and online training.
Nephrology

Making significant strides in helping patients live with chronic kidney disease

The Section of Nephrology provides all aspects of renal care at UNMC, including acute kidney injury and chronic kidney disease, transplantation, dialysis, complex electrolyte and acid-base disorders and hypertension. In addition to our strong kidney and pancreas transplantation programs, UNMC nephrologists also have extensive clinical and pathological experience in all forms of glomerular disease.

As one of the largest transplant centers in the Midwest and with more than 30 years in performing these procedures, patients are drawn to UNMC from a wide region. In 2007, more than 150 kidney and pancreas transplants were performed by the transplant team. UNMC also participate in trials of new agents for immunosuppression in transplant patients.

In the area of chronic hemodialysis, patients are offered the largest peritoneal dialysis program in the region. Inpatients requiring dialysis are offered cutting-edge treatments. More slow low-efficient hemodialysis (SLED) is performed by the Section of Nephrology than the rest of the state combined. SLED is a new, highly effective treatment for patients with acute renal failure. In 2007, UNMC marked five years of providing this service.

The service, under the direction of Dr. Troy Plumb, manages the largest home hemodialysis program in Omaha and western Iowa. This
program gives qualified patients a way to continue to be independent and active in their community. Approximately 10 percent of the patient population that requires dialysis is able to choose home dialysis.

Section faculty are involved in three general areas of clinical research, including the role of cardiovascular disease in transplant patients, the progression of kidney disease and new aspects of dialysis.

Through 2011, the section is participating in a grant funded by the NIH to study risk factors for cardiovascular disease in the post-transplant patient. Section chief Dr. Gerald Groggel serves as co-investigator on “Vascular Risk After Kidney Transplantation” with principal investigator Dr. Jennifer Larsen, chief of the Section of Diabetes, Endocrinology and Metabolism.

Dr. Groggel is currently involved in a study to measure outcomes in patients on home hemodialysis to test the hypothesis that these individuals will have better outcomes and lower cost of care than in-center hemodialysis patients, sponsored by NxStage.

A number of studies are ongoing to investigate new treatments to slow the progression of chronic kidney disease. Since 2005, Dr. Troy Plumb has been involved in a multi-center trial, entitled “Study of Heart and Renal Protection” (SHARP). This is an international, multi-center randomized controlled trial to determine the effects of lowering blood cholesterol on the risk of major vascular events among patients with Chronic Kidney Disease (CKD) who do not have established coronary heart disease.

The study, funded by the Oxford Trials Group, also aims to assess the effect of lowering cholesterol on the rate of loss of renal function in pre-dialysis patients. When completed, SHARP will be the largest study ever conducted in patients with CKD.

The section also is involved in pathophysiological studies of kidney injury. Dr. Babu Padanilam and researchers in his group are studying the molecular mechanisms that lead to injury and regeneration in the kidney following ischemic injury. Specifically, they are interested in delineating the molecular mechanisms of necrotic and apoptotic cell death post renal injury and the role of stem cells in kidney regeneration following ischemic renal injury.

Using genetic and proteomic approaches, this investigative team is testing several novel biomarkers that may provide early evidence of risk and injury, and differentiate between types of injury. Other studies focus on immunological issues or the many complications of acute kidney injury and co-morbid conditions. Different approaches to renal support from intermittent dialysis to continuous therapies and hybrid techniques are emerging as well as advanced extracorporeal devices for renal support are being developed. Currently, this research is funded by a Grant-in-Aid from the American Heart Association.

The section maintains a strong history of teaching medical students house staff officers and fellows: At least three teaching conferences each week are dedicated to all aspects of kidney disease for students, residents and, beginning in July 2007, our fellows. The two-year nephrology fellowship program consists of an 18-month clinical block and six-month research block; participants are encouraged to pursue an additional year of research. This is the only program of its kind in the area designed to train nephrologists for careers in academic nephrology and to provide superior care in the community.
Faculty in the Section of Oncology and Hematology specialize in diagnosis and treatment of all types of malignancies, including lymphomas, leukemia, urologic, breast, lung, gastric, pancreatic, brain, melanoma, hepatocellular and solid tumors. Specialists in hematology treat patients with blood diseases, including anemia, bleeding disorders and clotting problems. UNMC is world-renowned for its peripheral stem cell transplantation program.

UNMC oncologists are members of the National Comprehensive Cancer Network, an alliance of 15 leading cancer centers in the United States. In addition, UNMC is one of 16 large stem cell transplant centers that form an NCI-funded transplant cooperative group, the Blood and Marrow Transplant Clinical Trials Network, which focuses on advancing clinical trials in stem cell transplantation.

In 2007, The Nebraska Medical Center announced plans to open a new outpatient Clinical Cancer Center in west Omaha. The new center, to debut in Fall 2008, will mirror many of the treatments offered at the midtown campus, including state-of-the-art technology, clinical care and clinical cancer research. At the new site, patients from the western part of the city, as well as outlying areas, will have convenient access to the care they require. Faculty will have expanded opportunity to involve more patients in clinical trials.

The Section of Oncology and Hematology has a long tradition of pioneering initiatives in the field of cancer and its treatment. Clinician-scientists are active in a wide range of clinical trials,
making new treatments available to patients around the country and around the world.

The section is also an active research unit of the Center for International Blood and Marrow Transplant Research. All section faculty participate in various programs and studies conducted within the UNMC Eppley Cancer Center.

As a founding member of the Nebraska Lymphoma Study Group, Oncology/Hematology is an international leader in lymphoma treatment and research. In 2007, section chief Dr. Julie Vose was named to the board of trustees for the Leukemia & Lymphoma Society. Dr. Vose’s work in non-Hodgkin’s lymphoma therapy and transplantation research has established the standard of care. Work done by UNMC’s lymphoma team (Dr. James Armitage, Dr. Philip Bierman, Dr. R. Gregory Bociek and Dr. Julie Vose) on novel drug development, gene expression profiling and transplantation has been key in advancing lymphoma clinical and translational research. Many new drugs are targeted agents that specifically harm the lymphoma cell without harming normal tissues. In this way, side effects of the medications are much less than those involving standard chemotherapy.

Under the direction of Dr. Jean Grem, UNMC has established a novel gastrointestinal oncology and oncology drug development program, evaluating combinations of therapeutic agents and pharmacokinetics of those agents in GI malignancies. Dr. Grem and other section researchers also participate in several disease-focused Phase I, II and III multi-center trials in colorectal and pancreatic cancer.

A clinical breast cancer program, directed by Dr. Elizabeth Reed, has four areas of emphasis: translational research based on banked tissue associated with outcome; clinical research in survivorship; participation in multi-center treatment trials; and, development of new therapy, particularly in the area of immunotherapy and vaccines for early stage breast cancer.

A large database, which allows patient-directed, Web-based data entry, has been established. It includes extensive patient information, linked with tissue and serum samples, which provides a valuable resource for translational research in breast cancer. A survivor clinic and associated patient data will be instrumental for the study of the long-term effects of breast cancer and its treatment.

Patients are enrolled in phase III trials sponsored through cooperative cancer groups; Dr. Reed has funding for three investigator-initiated Phase II trials for the adjuvant or neoadjuvant treatment of breast cancer. Two of these trials, developed in collaboration with Dr. James Talmadge, Department of Pathology/Microbiology, explore the role of dendritic cell immunotherapy in the setting of adjuvant and neoadjuvant treatment of breast cancer.

Leading the way in innovative cancer care, UNMC developed a Cancer Survivor Program to address patient issues following diagnosis and treatment. Dr. Deborah Darrington heads a comprehensive clinical and research program of long-term cancer survivors from UNMC.

Over the next few years, Oncology/Hematology will focus on the expansion of clinical and translational research in various malignancies and hematologic disorders with increased focus on health outcomes research and survivorship issues.
Understanding the causes of disease to provide more effective treatment options

The Section of Pulmonary, Critical Care, Sleep and Allergy Medicine takes seriously three of the University’s missions: patient care, research, and education. Uniting a diverse faculty around these three interconnected themes, the section excels at delivering extraordinary patient care, educating the next generation of health care professionals, and understanding the mechanisms of disease and exploring novel treatments of lung disease that affect our patients. The section’s strong partnerships with other members of the Department of Internal Medicine, the University community and The Nebraska Medical Center, enables a successful balance in meeting these missions.

The clinical faculty’s expertise in treating patients with adult cystic fibrosis, primary pulmonary hypertension, chronic obstructive pulmonary disease (COPD), asthma, sleep disorders and allergy draws patients locally as well as from the surrounding region. In addition to offering standard diagnostic and interventional procedures, the patients are offered the option of participating in both investigator-initiated and industry sponsored ongoing clinical trials related to their specific pulmonary disease. The physician-scientists are experts in their respective fields and over the years have been recognized for their excellence. Most recently, the adult cystic fibrosis program

*Dr. Von Essen - Pioneer in Agriculture Exposure-Related Airway Disease*
headed by Dr. Peter (Jim) Murphy was recognized as one of the nation's best.

To augment the understanding of the patient’s clinical problem, the section engages in a mix of interrelated and independent basic science, clinical, and translational research projects. Both basic and clinical scientists are investigating mechanisms, treatments and outcomes related to smoking cessation, COPD, cystic fibrosis, cell signaling, the impact of alcohol on the lung, lung injury and repair, and the impact of occupational, viral and bacterial insults on the lung. Investigators have secured long-term funding from the NIH and the VA to support their research endeavors.

The section has a long-standing interest in the relationship of agriculture environmental exposures and persistent airway disease. Dr. Susanna Von Essen has pioneered this field and is now taking the investigation from the “beside to the bench”—in collaboration with Drs. Jill Poole, Debra Romberger, and Todd Wyatt—to understand the molecular mechanisms causing lung disease.

Investigator awards from the NIH and VA include the prestigious R37 MERIT award (Dr. Sisson), four R01 or VA Merit awards (Dr. Romberger and Dr. Wyatt), one R21 (Dr. Stephen Rennard), two K awards (Dr. Diane Allen-Gipson and Dr. Poole), and two fellowship training awards (Dr. Peter Oldenburg and Dr. Kristina Bailey). Additionally, Dr. Tricia D. LeVan has peer-reviewed, competitive foundation support for her work. Section investigators present their findings at national and international meetings and in peer-reviewed journals. Many of the investigators also serve both as reviewers for journals that publish in their area of expertise and as members of grant review panels.

Section investigators have been recognized by their University peers for their success. Last year, Dr. Rennard received the UNMC Scientist Laureate Award. Recently, Dr. Sisson received the University’s outstanding scientist award. In addition, Dr. Romberger was honored as a new investigator and Dr. Bailey was recognized as the University’s post-doctoral research fellow of the year. Dr. Oldenburg was just awarded the Department of Internal Medicine’s postdoctoral research fellowship award.

The section offers two accredited clinical fellowship programs, one in pulmonary and critical care medicine and the other in sleep medicine, led by Dr. Craig Piquette and Dr. Teri Barkoukis, respectively. Members of the faculty are actively involved in preparing the fellows for the next stage in their medical careers. Each year, the section graduates three pulmonary and critical care fellows and two sleep fellows.

Faculty members interact with medical students, allied health and nursing students, and residents on a daily basis. They are heavily involved in collaboratively teaching the M2 pulmonary core as well as graduate-level College of Public Health courses. The section participates in post-doctoral training on an ongoing basis and many members of the faculty also serve as mentors for the department’s summer undergraduate research program.
Rheumatology and Immunology

Leading the way in new therapies and unprecedented research studies

OUR ONGOING RESEARCH INITIATIVES – INCLUDING WORK IN RHEUMATOID ARTHRITIS AND THE STUDY OF ALCOHOL AND ITS EFFECTS ON THE IMMUNE SYSTEM – ARE HELPING US UNCOVER NEW POTENTIAL FOR SUCCESSFULLY TREATING DISEASE.

The Section of Rheumatology and Immunology addresses the diagnosis and treatment of diseases affecting joints, muscles and other connective tissues, including rheumatoid arthritis, gout, Wegener’s granulomatosis, polymyositis, scleroderma, vasculitis and systemic lupus erythematosus.

Clinician-scientists at UNMC have garnered an international reputation in the treatment and research of rheumatoid arthritis (RA). Since 1989, faculty members have repeatedly been responsible for breakthroughs in RA treatment—most notably pioneering the use of “Triple Therapy,” or combinations of disease-modifying medications to treat RA.

Critical to better understanding RA treatment was the development of the Rheumatoid Arthritis Investigational Network (RAIN). Directed by section chief Dr. James O’Dell, RAIN has become an internationally respected and productive investigator-initiated research network. This national consortium includes 40 rheumatologists in six states, who participate in the design and enrollment of patients in clinical protocols.

RAIN studies have also shown the acne drug minocycline provided significant improvement for people with early RA. RAIN was also among the first to report correlations of treatment responses in RA with genes regulating the immune system.

LEFT TO RIGHT: DR. KALEB MICHAUD DR. JAMES O’DELL DR. TED MIKULS
Dr. O’Dell serves as principal investigator for the Rheumatoid Arthritis Comparison of Active Therapies (RACAT) trial. Funded by the VA, this $14 million study involves 15 VA sites, 10 sites in Canada and 10 sites in the RAIN group. For the first time, the RA 600-patient study will combine a biorepository, strong economic data with a double-blind randomized clinic trial.

In July 2007, the Nebraska Arthritis Outcomes Research Center (NAORC)—a collaborative effort of the Section of Rheumatology and the Department of Orthopedics—opened on the UNMC campus. The center, under the direction of Dr. Ted Mikuls and Dr. Kaleb Michaud will house studies to better understand the development of arthritis and predict outcomes. The center was made possible by donors Ruth and Bill Scott.

Funded by the NIH (K23 and RO3) and the Arthritis Foundation, Dr. Mikuls is exploring bone health in minority patients and veterans with RA. He holds a grant to evaluate gene-environment interactions in RA autoimmunity and disease severity.

Dr. Mikuls heads VARA, a large national VA cohort of patients with RA, the largest cohort of males with RA in North America. VARA provides important insight into RA risk factors and outcomes. In March 2008, he received the Joseph P. Gilmore Outstanding Investigator Award, which recognizes outstanding research contributions by young UNMC faculty members.

Development of comprehensive clinical databases is critical for translational use and for the development of new therapeutics. Dr. Michaud has a lead role in the NAORC and is working with Dr. Mikuls to expand the RAIN and VA databases. Dr. Michaud is the recent recipient of a career development award from the Arthritis Foundation. His research will focus on health outcomes and cost effectiveness of total joint replacement in the treatment of RA. He continues to conduct research with the National Data Bank for Rheumatic Diseases. Together, he and Dr. Mikuls are working with rheumatological databases to help understand how drug toxicities influence morbidity and mortality rates in RA.

Collaboration with other UNMC scientists remains vitally important. Dr. Amy Cannella and UNMC orthopedic surgeon Dr. Ed Fehringer are studying a longitudinal cohort of RA patients who have experienced rotator cuff tears. Using state-of-the-art imaging techniques, including office-based dynamic ultrasound, to look at shoulder disease among this patient group; Drs. Cannella and Fehringer gather data on periodontal status with bone mineral density. Dr. Alan Erickson is developing a national reputation for his expertise in digitally scoring radiographic progression of RA and is reading films for VARA and RACAT.

The association of the study of alcohol and its effect on the immune system remain a central research focus of Dr. Lynell Klassen, department chair, and Dr. Geoff Thiele. In 2007, Dr. Klassen was selected to the advisory council of the NIH National Institute of Alcohol Abuse and Alcoholism (NIAAA). This appointment, given only to leaders in the field relevant to the activities of a particular NIH Institute, is for a four-year term.

As educators, faculty members consistently receive superior rankings by UNMC medical students: The Section of Rheumatology and Immunology has been rated at or near the top in teaching for the past two decades. During this time period, residents have achieved top performance in rheumatology and immunology, out of any subspecialty, on the American Board of Internal Medicine exam. Additionally, the section has been very successful in attracting talented residents to pursue careers in rheumatology, with a recruitment rate four times the national average.
Faculty Interests

ADMINISTRATION

James Salhany, PhD
  Professor
  cell transplant mechanisms

Kathleen M. Grant, MD
  Assistant Professor
  rural substance use disorders
tobacco cessation

CARDIOLOGY

John Windle, MD
  Professor and Chief
  cardiac electrophysiology
  complex cardiac mapping
  health informatics

Daniel Anderson, MD, PhD
  Assistant Professor
  cardiac electrophysiology
  atrial and ventricular arrhythmias
  innate immunity in cardiovascular disease

J. Timothy Baller, MD
  Assistant Professor
  cardiovascular imaging
  general cardiology

Ward Chambers, MD
  Associate Professor
  Coordinator of Programs, International Health and Medical Education
  cardiovascular imaging
  minority health disparities

Ioana Dumitru, MD
  Assistant Professor
  Medical Director, Heart Failure and Cardiac Transplant Program
  cardiac transplant
  congestive heart failure

Arthur Easley Jr., MD
  Associate Professor
  Director, Cardiology Education
  device therapy in congestive heart failure
  cardiac mapping and ablation

Christopher Erickson, MD
  Associate Professor
  cardiac electrophysiology
  sudden death syndromes
  genetics and arrhythmias

John Haas, MD
  Assistant Professor
  general cardiology
decision-support and guidelines

Daniel Mathers Jr., MD
  Assistant Professor
  cardiovascular disease prevention
  education and teaching methods

Edward O’Leary, MD
  Associate Professor
  Chief of Cardiology, VAMC
  peripheral vascular disease
  three-dimensional angiography

Thomas Porter, MD
  Professor and Theodore F. Hubbard Distinguished Chair of Cardiology
  Director of Cardiac Imaging
  therapeutic ultrasound
  microbubbles/perfusion imaging

Eugenia Raichlin, MD
  Assistant Professor
  heart failure and transplantation
  cardiac CT/MRI

Thomas Sears, MD
  Associate Professor
  congestive heart failure risk reduction
  research ethics

Scott Shurmur, MD
  Associate Professor
  Director of Interventional Cardiology
  lipids and cardiovascular risk
  acute myocardial infarction

Monique Smith, MD
  Assistant Professor
  Director of Cardiac Imaging, VAMC
  women’s heart issues
  cardiac resynchronization

Nattapon Sricharoen, MD
  Assistant Professor
  interventional cardiology
  cardiovascular imaging

Keith Weeks, MD
  Assistant Professor
  interventional cardiology
  teaching methods

Feng Xie, MD
  Research Assistant Professor
  contrast echocardiography
  microbubble enhanced thrombolysis

DERMATOLOGY

Kristie D. Hayes, MD
  Associate Professor, William W. Bruce Distinguished Chair, and Chief Assistant Dean, Student and Multicultural Affairs
  skin malignancy in organ transplant patients
  genodermatoses

DIABETES, ENDOCRINOLOGY AND METABOLISM

Jennifer L. Larsen, MD
  Professor, Louise and Morton Degen Professorship, Chief and Associate Dean for Clinical Research
  metabolic consequences of organ transplantation
  diabetes risk in high risk populations
  pituitary disease evaluation and treatment

Robert G. Bennett, PhD
  Associate Professor
  antifibrotic effect of relaxin
  insulin degrading enzyme function

Cyrus V. Desouza, MD
  Associate Professor
  cardiovascular disease in diabetes
  endothelial dysfunction in diabetes
  mental health and apathy in diabetes

Whitney S. Goldner, MD
  Assistant Professor
  thyroid nodules and cancer
  metabolic consequences of bariatric surgery

Frederick G. Hamel, PhD
  Professor
  Deputy Associate Chief of Staff for Research, Omaha VA Medical Center
  function of insulin-degrading enzyme
etiology of type 2 diabetes mellitus

James T. Lane, MD
  Associate Professor
  Medical Director, The Nebraska Medical Center Diabetes Center
  post-transplant diabetes
  young adult diabetes

Lynn Mack-Shipman, MD
  Assistant Professor
  osteoporosis
  women’s health metabolic issues

Amy S. Neumeister, MD
  Assistant Professor
  urgent diabetes and endocrine care

Vijay Shivaswamy, MD
  Assistant Professor
  thyroid disease
  immunosuppressants and insulin resistance

GASTROENTEROLOGY AND HEPATOLOGY

Mark Mailliard, MD
  Associate Professor, Frederick F. Preastian Chair, and Chief
  viral hepatitis
  alcoholic liver disease

John Benson Jr., MD
  Professor
  medical student learning and curriculum
  health care reform

Carol Casey, PhD
  Professor
  alcoholic liver injury
cell biology and function

Dahn Clemens, PhD
  Associate Professor
tissue regeneration
  alcoholic hepatitis/pancreatitis

Terrence Donohue, PhD
  Professor
  hepatology
  alcoholic liver injury
  hepatocyte proliferation and repair
John Gollan, MD
Stokes-Shackleford Professor
Dean, College of Medicine
hepatology
liver transplantation

Dee Harrison-Findik, PhD
Assistant Professor
hepatic iron metabolism
hepatitis C

Grant Hutchins, MD
Assistant Professor
biliary and pancreatic disease
novel endoscopic procedures

Kusum Kharbanda, PhD
Assistant Professor
alcoholic liver disease
bioprotection in hepatitis

Timothy McCashland, MD
Associate Professor
Medical Director, Liver Transplantation
liver transplantation
cholestatic liver disease

Benita McVicker, PhD
Assistant Professor
alcohol liver disease
hepatocyte apoptosis

Sandeep Mukherjee, MD
Associate Professor
liver transplantation
clinical trials in hepatitis

Marco Olivera-Martinez, MD
Assistant Professor
liver transplantation and immunosuppression
chronic viral hepatitis, novel pharmacologic therapies
non-alcoholic fatty liver disease

Natalia Osna, PhD
Assistant Professor
hepatitis C
hepatic inflammation

Fedja Rochling, MD
Assistant Professor
liver and small bowel transplantation
intestinal rehabilitation

Daniel Schafer, MD
Professor
hepatology
liver transplantation

Courtney Schaffert, PhD
Instructor
ethanol and liver injury

Michael Sorrell, MD
Professor
liver transplantation
autoimmune hepatitis

Dean Tuma, PhD
Professor
drug and nutritional hepatotoxocities
pathogenesis of alcoholic liver disease

Renee Young, MD
Associate Professor
inflammatory bowel disease
fellowship education

Rowen Zetterman, MD
Professor
Chief of Staff, Omaha VA Medical Center
hepatitis
health care reform

GENERAL INTERNAL MEDICINE

Thomas Tape, MD
Professor and Chief
medical judgment and decision making
computer usability for physicians

Terri Batternman, MD
Assistant Professor
management of hospitalized patients
preventive medicine

Micah Beachy, DO
Assistant Professor
hospital medicine

Joel Bessmer, MD
Associate Professor
Internal Medicine Residency
Associate Program Director
Turner Park Clinic Director
medical education
health care delivery systems

Rachel Bonnema, MD
Assistant Professor
women’s health
curriculum development for the national VA

James Campbell, MD
Professor
computerized patient medical records
primary care internal medicine

Gay J. Canaris, MD, MSPH
Assistant Professor
clinical epidemiology
women and minority health research

Brent Crouse, MD
Assistant Professor
outpatient primary care
diabetes

Katherine Daniels, MS, LMFT
Assistant Professor
behavioral medicine-resident education
geriatric depression/anelgy

Grace Davis, MD
Assistant Professor
preventive care
women’s health

J. Calvin Davis, III, MD
Emeritus Professor
management of hospitalized patients
addiction medicine

Gale Etherton, MD
Assistant Professor
hospital delivery systems
physician quality improvement

Julie Fedderson, MD
Assistant Professor
perioperative care and risk assessment

Mary Gallagher Jansen, MD
Assistant Professor
substance abuse and addiction
psychiatric illness in primary care

David Grandison, MD
Associate Professor
minority health
preventive health research

William Gust, MD
Assistant Professor
Associate Chief of Staff for Education, Omaha VA Medical Center
graduate education
hypertension

Lydia Kang, MD
Assistant Professor
palliative care
cultural competency

John Matoole, MD
Professor
student and house officer education
utilization of health care resources

Merle McAlevy, MD
Assistant Professor
physical diagnosis teaching
hospital informatics

Scott Menolascino, MD
Assistant Professor
emergency medicine

J. Scott Neumeister, MD
Associate Professor
medical education
procedural training

Devon Nickol, MD
Assistant Professor
teaching evidence-based medicine
computers in medical education

Jessica Novotny, MD
Assistant Professor
hypertension
hyperlipidemia

Phyllis Nsiah-Kumi, MD
Assistant Professor
health disparities
diabetes prevention

David O’Dell, MD
Professor
undergraduate medical education
procedural training

Rubens Pamies, MD
Professor
Vice Chancellor, Academic Affairs
Dean, Graduate Studies
workforce development
medical education

Jennifer Parker, MD
Assistant Professor
Internal Medicine-Pediatrics
Program Director
transitional care
adolescent and women’s health
Robert Schwab, MD
Assistant Professor
- ambulatory care

Susan Schwerdtfeger, MD
Assistant Professor
- women’s health
- ambulatory medicine

Jason Shiffermiller, MD
Assistant Professor
- perioperative care and risk assessment
- management of the hospitalized patient

Regan Taylor, MD
Assistant Professor
- women’s health
- medical student education

Jean Thierfelder, MD
Associate Professor
- preventive care
- organization of outpatient care

Chad Vokoun, MD
Assistant Professor
- Internal Medicine Residency
- resident education
- perioperative and consultative medicine

Mary Wampler, MD
Assistant Professor
- occupational medicine

Robert Wigton, MD
Professor
- Associate Dean, Graduate Medical Education
- physician judgment and decision making
- research in medical education

Renee Woehrer, MD
Assistant Professor
- resident and medical student teaching
- ambulatory care

Stephen J. Bonasera, MD, PhD
Assistant Professor
- research on basic science of aging and the brain
- neurobiology of aging
- gene expression and mouse hypothalamus

Catherine Eberle, MD, CMD
Associate Professor
- Acting Chief of Geriatrics, Omaha VA Medical Center
- Co-Medical Director, VNA Hospice
- end-of-life care
- function and disability in aging

Brenda K. Keller, MD
Assistant Professor
- Medical Director, Brookeston
- visual acuity and functional status
- environmental lighting and performance

William L. Lyons, MD
Assistant Professor
- Director, Geriatric Fellowship Program
- transitional care of the elderly
- practice based quality improvement

Debra E. Mostek, MD
Assistant Professor
- elder mistreatment and self-neglect
- end-of-life care

Edward V. Vandenberg, MD, CMD
Associate Professor
- Medical Director, Amazing Angels Hospice
- Director, Geriatric Evaluation and Management Unit, Omaha VA Medical Center
- dementia
- geriatric interdisciplinary care

INFECTIONOUS DISEASES

Philip W. Smith, MD
Professor and Chief
- Medical Director, Nebraska Biocontainment Unit
- bioterrorism preparedness education
- infectious diseases in the elderly

Diana Florescu, MD
Assistant Professor
- transplant infectious diseases
- atypical mycobacteria

Alison Freifeld, MD
Professor
- Director, Immunocompromised Host Infectious Diseases Program
- infections in immunocompromised hosts
- fever and neutropenia

Howard Gendelman, MD
Professor
- HIV neuropathogenesis and nanoformulated anti-retroviral drug developments
- innate immunity and viral control

Ziba Jalali, MD
Assistant Professor
- HIV/ hepatitis C co-infection
- HIV clinical trials

Miguel G. Madariaga, MD
Assistant Professor
- CMV infections

Mark E. Rupp, MD
Professor
- Medical Director, Department of Healthcare Epidemiology
- Medical Director, Clinical Trials Office
- health care associated infections
- antimicrobial stewardship

Richard Starlin, MD
Clinical Assistant Professor
- consultation infectious diseases

Susan Swindells, MBBS
Professor and Terry K. Watanabe Chair
- HIV/AIDS therapeutics
- neurologic complications of HIV

Hendrik Viljoen, PhD
Professor
- tuberculosis

Gerald C. Groggel, MD
Professor and Chief
- immunological renal injury
- progression of chronic kidney disease

Marius C. Florescu, MD
Assistant Professor
- interventional nephrology
- hyperphosphatemia in end-stage renal disease

Clifford D. Miles, MD, MS
Assistant Professor
- transplant nephrology
- chronic kidney disease in transplant recipients

Babu Padanilam, PhD
Associate Professor of Cellular and Integrative Physiology
- mechanisms of acute renal failure
- stem cells and regeneration in ischemic kidneys

Troy J. Plumb, MD
Assistant Professor
- acute kidney injury
- chronic kidney disease
- hemodialysis access

Vinaya Rao, MD
Assistant Professor
- transplant nephrology
- immunosuppressive protocols and trials

ONCOLOGY AND HEMATOLOGY

Julie Vose, MD
Professor, Neumann M. and Mildred E. Harris Chair of Oncology, and Chief
- hematologic malignancies
- biologic therapy in lymphoma

James O. Armitage, MD
Professor and Joe Shapiro Chair of Oncology
- lymphoma
- international health care

Philip J. Bierman, MD
Professor
- lymphoma
- brain tumors
R. Gregory Bociek, MD
Associate Professor
- non-Hodgkin's lymphoma
- Hodgkin's lymphoma

Kenneth Cowan, MD, PhD
Professor
- Director, Eppley Institute
- Director, Eppley Cancer Center
- breast cancer
- early cancer detection

Deborah Darrington, MD
Assistant Professor
- cancer survivorship

Marcel Devetten, MD
Associate Professor
- Director, Bone Marrow Transplant Program
- stem cell transplant
- leukemias

Apar Kishor Ganti, MD
Assistant Professor
- lung cancer
- head and neck cancer

Jean Grem, MD
Professor
- gastrointestinal malignancies
- pharmacogenomics

William D. Haire, MD
Professor
- thrombosis
- non-malignant hematology

Ralph Hauke, MD
Associate Professor
- urologic malignancies

M. Anne Kessinger, MD
Professor
- lung cancer
- melanoma

Fausto Loberiza Jr., MD
Associate Professor
- stem cell transplant outcomes
- cancer health services research

Lori Maness-Harris, MD
Assistant Professor
- leukemias
- myelodysplastic syndrome

Timothy McKeithan, MD, PhD
Associate Professor
- molecular biology of lymphoma
- transcriptional regulation of neoplasia

Sandeep Rajan, MBBS
Assistant Professor
- head and neck cancer
- non-malignant hematology

Wajeeha Razaq, MD
Assistant Professor
- breast cancer
- gastrointestinal malignancies

James Schwarz, MD
Assistant Professor
- solid tumor malignancies
- genitourinary malignancies

Elizabeth C. Reed, MD
Assistant Professor
- breast cancer

Jue Wang, MD
Assistant Professor
- gastrointestinal malignancies

PULMONARY, CRITICAL CARE, SLEEP AND ALLERGY

Joseph Sisson, MD
Larson Professor of Medicine and Chief
- airway ciliary motility
- alcohol and mucociliary clearance

Diane Allen-Gipson, PhD
Assistant Professor
- airway wound healing

Kristina Bailey, MD
Assistant Professor
- alcohol and airway innate immunity
- toll-like receptor 2

Tori Barkoukis, MD
Associate Professor
- sleep curriculum development

Hesham Basma, PhD
Instructor
- stem cell differentiation

Sabin Bista, MBBS
Assistant Professor
- sleep disorders

Tricia D. LeVan, PhD
Assistant Professor
- genetic epidemiology
- gene-environment interactions

Xiangde Liu, MD
Associate Professor
- lung cellular injury
- mechanisms of apoptosis

Peter (Jim) Murphy, MD
Associate Professor
- adults with cystic fibrosis
- respiratory care services

Craig Piquette, MD
Associate Professor
- Associate Chief of Medicine, Omaha VA Medical Center
- critical care medicine
- medical school and fellowship curriculum

Jill Poole, MD
Assistant Professor
- mechanisms of inhaled antigen tolerance
- organic dusts allergens

Stephen I. Rennard, MD
Larson Professor
- lung repair, remodeling and regeneration
- chronic obstructive pulmonary disease

Debra J. Romberger, MD
Professor
- Associate Chief of Staff for Research, Omaha VA Medical Center
- organic dust and epithelial functions
- inflammatory airway diseases

Michael Summers, MD
Assistant Professor
- Medical Director, The Nebraska Medical Center Sleep Center
- sleep medicine
- analysis of sleep patterns

Austin Thompson, MD
Associate Professor
- pulmonary hypertension
- chronic lung dysfunction

Eduardo Vasquez, MD
Assistant Professor
- critical care medicine
- diagnostic bronchoscopy
- ultrasound-directed bronchoscopy

Susanna G. Von Essen, MD, MPH
Professor
- agriculture and lung disorders
- occupational health

Todd A. Wyatt, PhD
Associate Professor
- cyclic nucleotide-dependent protein kinases
- alcohol and cigarette smoke in lung disease

RHEUMATOLOGY AND IMMUNOLOGY

James O’Dell, MD
Professor, Larson Professorship, and Chief
- rheumatoid arthritis clinical trials
- predicting therapeutic response

Amy Cannella, MD
Assistant Professor
- medical education
- diagnostic ultrasound

Alan Erickson, MD
Assistant Professor
- management of rheumatic diseases
- quantitative radiologic joint assessment

Lynell Klassen, MD
Henry J. Lehnhoff Professor, and Chair, Department of Internal Medicine
- mechanisms of autoimmune disease
- immunoregulation

Kaleb Michaud, PhD
Assistant Professor
- pharmacoepidemiology
- longitudinal outcomes in rheumatic diseases

Ted Mikuls, MD, MSPH
Associate Professor
- co-morbidity of rheumatoid arthritis
- environmental and genetic interactions

Gerald Moore, MD
Professor
- Senior Associate Dean, Academic Affairs
- education of medical students
- soft tissue disease

Geoffrey Thiele, PhD
Professor
- endothelial cells in immunity
- immune mediation of tissue damage