THE DIVISIONS OF THE DEPARTMENT OF INTERNAL MEDICINE AT
THE UNIVERSITY OF NEBRASKA MEDICAL CENTER SHARE THE SAME MISSION:
TO IMPROVE THE HEALTH OF THE CITIZENS OF NEBRASKA THROUGH NATIONALLY
RECOGNIZED PROGRAMS IN CLINICAL CARE; TO EDUCATE HEALTH CARE PROVIDERS;
AND TO CONDUCT RESEARCH THAT ENHANCES THE UNDERSTANDING, TREATMENT
AND/OR PREVENTION OF DISEASE.
This biennial report highlights and celebrates the ongoing activities of UNMC’s Department of Internal Medicine as we continue to fulfill our academic mission in patient care, education and biomedical research. In a world of changing healthcare realities, the Department will be successful as we continually emphasize excellence, team-building and our unifying vision.

Excellence is primarily determined by recruiting and retaining outstanding faculty members who engage in our tripartite academic mission. We are delighted that we have attracted our own trainees — as well as many faculty who have been educated in some of the most respected medical institutions in the country — to enhance what we offer to patients, to our students and to the larger academic community through expansion of peer-reviewed research endeavors.

Through the faculty, we have been able to develop new programs that have expanded both our general and specialized care for patients — patients who come to UNMC from several blocks or many states away from our institution. The Department continues its outstanding reputation in education by providing a residency training environment that is objectively one of the top in the country, medical students who are competitive in post-graduate training programs nationally and faculty teaching activity that is recognized by institutional teaching awards.

Our continued success will be primarily dependent on the ability of our faculty and trainees to work in teams and be highly collaborative. The team approach is emphasized both within the Department and in our inter-departmental associations. While most of this interaction is accomplished on campus, we continue to increase our collaborative efforts with clinicians and researchers across the country. It is imperative that we continue to value each individual for his/her contribution to the overall efforts of the team which take precedence over individual recognition.

I am delighted that this report highlights the activities that continue to expand our value as an academic department of internal medicine. I am also delighted that the faculty continue to have an extraordinary commitment to all three aspects of our academic mission — patient care, developing the next generation of healthcare providers and expanding the borders of evidence-based medicine through peer-reviewed research endeavors.

Lynell W. Klassen, MD
Beyond Basic Medicine

Simulation Training Enhances Skills, Develops Confidence

UNMC and VA Researchers Share Common Goal

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Beyond Basic Medicine: Clinical Teams Focus on Patients’ Total Health
For years, it was the symbol of patient care: One doctor, on the proverbial white horse and carrying a black bag, who treated all the residents of one community.

Today, there’s a different kind of healthcare in town.

In 2010, the model of “Lone Ranger” medicine is virtually unrecognizable—transformed into a cooperative team approach that’s focused on every aspect of the patient’s needs, from the moment of diagnosis to post-operative social evaluation.

At UNMC, the Department of Internal Medicine has been on the forefront of team treatment, even before it became the new standard. One of the reasons: It simply was the right thing to do in order to deliver the best possible aid.

As part of an academic medical institution, the Department has a ready-made structure to bring together the best and brightest healthcare professionals in one place. The clinical team gathers different kinds of expertise across a wide variety of disciplines, including physicians, nurses, social workers, clinical pharmacists and those who understand chronic disease management.

That structure is the basis for the UNMC Advanced Heart Failure Team and Cardiac Transplantation Program, led by medical director Ioana Dumitru, MD. The team includes transplant cardiologist Eugenia Raichlin, MD; transplant and mechanical assist device cardiothoracic surgeon John Um, MD; cardiothoracic surgeons Kim Duncan, MD, Tracy Darheim, MD and James Hammel, MD; Division of Cardiology Chief John Windle, MD; and additional cardiologists, nurse practitioners, nurse coordinators and ancillary and consulting services.

The team is responsible for treating patients who come from across Nebraska and the Midwest region seeking advanced heart failure therapy. The program offers hope for a better quality of life using state-of-the-art heart failure therapies, mechanical circulatory support and cardiac transplantation. Other patients come in self-referred, looking for specialized attention for heart failure or other cardiac conditions.

Heart failure patients face a long road ahead of them. Their tenuous condition requires a level of expertise found only at highly specialized institutions. Successful interventions for this particular patient population relies not only on addressing their cardiac condition but also their comorbidities, social and psychological well being.

At UNMC, patients have access to a multitude of additional resources to address the social and economic concerns that come with a chronic disease. A social worker, nutritionist and financial representative are part of the front line in total patient care.

“Often, patients have to face the prospect of how to afford medication or trips to Omaha to be treated,” said Dr. Dumitru. “We look beyond departmental boundaries to provide local help in case they need to be here in an emergency. We also have support groups and counseling to help patients and their families deal with the stress involved with illness. They can ask questions and talk with other patients about what to expect during their journey.”

Effective treatment of these patients involves the multidisciplinary approach of the team as well as ongoing communication with the cardiologist and primary physician, therefore creating the continuum of care for the patient.

On the Ninth floor at Clarkson Hospital Tower, part of The Nebraska Medical Center, hospitalists perform a key role pre- and post-operatively as part of the orthopaedic co-management team.

Division of General Internal Medicine members Chad Vokoun, MD, Jason Shiffermiller, MD, and Micah Beachy, DO, help ensure that patients are in the best physical condition possible before surgery.

“These patients are primarily those receiving hip and knee replacements, shoulder, foot and ankle surgeries and they may also
CARDCIC HEART FAILURE TEAM

MEMBERS LEFT TO RIGHT FRONT ROW: TRISH FISCHER (CHF COORDINATOR); HOLLY MASON, RN; EUGENIA RAICHLIN, MD; IOANA DUMITRU, MD; MARGIE CHARTRAND (CHF COORDINATOR); AND MELISSA CHRISTIAN (CHF COORDINATOR); FROM LEFT TO RIGHT MIDDLE ROW: LINDEE DONAHUE (SCHEDULING COORDINATOR); KATHY DUNCAN (MED STAFF ASSISTANT); ROBIN PAPROCKI, RN; PAM CORWIN (TECH) AND FAR BACK IN THE MIDDLE: TIM RYAN, NP
have other co-morbid conditions like heart disease, hypertension and diabetes,” said Dr. Vokoun.

“We see the patients in clinic to help ensure the patients are ready for surgery. Then, we come on board immediately following surgery to co-manage with the Orthopaedic residents and staff who provide daily hospital interventions. We help with big-picture medical issues to expedite the patient’s post-surgical treatment.”

Collaboration is the basis for this team, whose members can trust that each part of the team—from physicians and nursing coordinators to social workers and physical therapists—will effectively manage their area of expertise.

That familiarity offers teaching opportunities as well, Dr. Vokoun said. “As hospitalists, we conduct interdepartmental conferences to help give an internist’s perspective on how we approach team care. From time to time, the Orthopaedic surgeons also participate in these sessions with us.”

Prospective outcomes studies have indicated that the hospitalist-orthopaedic surgeon team is effective in reducing some minor post-operative complications in higher-risk patients, compared with traditional orthopaedic post-operative care. In addition, these studies found that orthopaedic surgeons and nurses preferred the hospitalist-orthopaedic co-management model over the orthopedist-only model. Dr. Vokoun’s team is conducting its own research on outcomes and perioperative morbidity for orthopaedic patients and anticipates similar results.

Beyond positive medical outcomes, he believes that the team model is important to patients. “Because we see patients before and after surgery, they have faces that are familiar to them,” said Dr. Vokoun. “That creates another layer of trust for everyone on the team.”

Led by adult program director Peter Murphy, MD, and associate director Austin Thompson, MD, the team follows approximately 140 adult patients with cystic fibrosis through the clinic in the Durham Outpatient Center.

The center fills what was previously a void in CF patient care. Before the center opened, adult patients still were being treated by pediatric CF physicians. Now, patients can receive the personalized help they need by a team of dedicated physicians, a nurse coordinator, nurse specialist, respiratory specialists, dietician, a social worker and research coordinators.

When patients require hospital admission, health professionals consult Physical Therapy to provide a personalized exercise program, including the use of a gym, and exercise bikes provided by the Adult CF Program. The PT department regularly provides therapists with extra knowledge of CF patients and their needs—a successful cooperative program in place since 2008, and one that helps improve lung function more quickly and enhance the patient’s recovery.

The Adult and Pediatric CF programs at UNMC are part of the CF Therapeutics Development Network. This group of care centers is dedicated to the execution of clinical studies related to development of CF-specific treatments. Patients are contacted on a frequent basis—often in the context of a clinical visit—regarding studies for which they might qualify. Research participation also is a topic at weekly conferences, which are attended by all members of the team.

All staff are available to discuss ongoing or upcoming projects and answer questions and concerns. Together, the CF team aims to engender a research culture in the context of the close, thoughtful relationships they develop in the process of delivering clinical care.

Team members tenaciously attend to the details of each patient’s needs in a highly personalized way. It’s the personal involvement of each individual that highlights the team’s ability to achieve excellent patient outcomes.

“Each team member knows a great deal about other roles, and are able to contribute meaningfully in our frequent team meetings in areas outside of their specialty,” Dr. Murphy said. “This cross knowledge and willingness to extend their perspectives is a character that has become indispensable to me as the program director.”

“Besides receiving overwhelmingly positive ratings on our patient satisfaction surveys,” he added, “our patients often develop close, personal relationships with members of the team,” he added. “We’re often invited to weddings, performances and other events because of the role we have in our patients’ lives.”

The UNMC Adult Cystic Fibrosis (CF) Center in partnership with the Division of Pulmonary, Critical Care, Sleep & Allergy Medicine is another example of how team medicine is helping improve the outlook for specific patient populations. In this case, it’s the many people who have been dealing with a chronic disease since childhood.

Opened in 2000, the center has been ranked among the top eight benchmark programs in the country by the Cystic Fibrosis Foundation. Its outcomes are consistently ranked in the top quartile, according to the CF Foundation registry. The adult program received its first accreditation in 2001, and was re-accredited in 2004 and 2009.
Simulation Training Enhances Skills, Develops Confidence
Putting the skills learned as a medical student to work as a resident is only part of the development process for a good physician. Something else is needed, something that can’t be taught but can be nurtured.

Confidence.

“The act of practicing the procedures until you’re comfortable with the process is half the battle,” says Chad Vokoun, MD, assistant professor of internal medicine and co-associate residency program director at the UNMC Department of Internal Medicine. “Knowing how to do it is one thing. Knowing that you can do it provides the self-confidence necessary to apply those skills in any situation.”

For years, medical training was done by practicing on cadavers, on actors posing as patients or on actual patients. While the latter was done with very careful supervision, it carried some potential risk for patients.

Today, a new tool has been added: computer simulated training.

At the Clinical Skills Center within the Michael F. Sorrell Center for Health Science Education, first-year internal medicine residents take full advantage of a cutting-edge facility that ranks among the top academic health science simulation centers in the nation.

Built to be utilized by the entire UNMC campus, the Clinical Skills Center affords the residents many opportunities to hone their abilities by working with high-tech, life-size mannequins that breathe, speak, bleed and urinate. With computer programming, the mannequins – complete with heartbeats, pulses and lung and bowel sounds – also exhibit symptoms of disease and react to treatment.

“We’ve utilized cadavers and some software programs in the past, but this is the first we’ve been able to incorporate such a technologically-advanced simulation center into the internal medicine residency program,” Dr. Vokoun says. “We think it’s having a profound impact on how we train our residents.”

In addition to training students and residents, computer simulation is being used for nursing, physician and staff competency reviews. The clinical skills lab supplements a computer simulation training center at the Omaha Veterans Affairs Medical Center (OVAMC), which is also utilized by internal medicine residents.

Research indicates patient simulators enhance patient safety by providing students and residents realistic learning opportunities that boost confidence and skill proficiency. The Council of Emergency Medicine Residency Directors (CORD) states that simulation is a useful tool for training residents and in ascertaining competency in patient care, interpersonal skills and systems-based practice.

Advanced simulation technology figures highly into UNMC’s goal of increasing the number of primary care graduates. The need for an additional 150,000 physicians to adequately cover the nation’s health care concerns is fueling the expansion of technology-based learning opportunities at UNMC’s campuses.
LEARNING NEW TECHNOLOGY

USING THE PATIENT SIMULATOR ARE FROM LEFT TO RIGHT BRIAN HOLLIS, MD, RESIDENT; SARAH RICHARDS, MD, RESIDENT; CHAD VOKOUN, MD, CO-ASSOCIATE RESIDENCY PROGRAM DIRECTOR AND MATTHEW LUNNING, DO, CHIEF RESIDENT
It has been proposed that UNMC develop a four year curriculum aimed to increase primary care interest using advanced simulation and other technologies, and that the medical center utilize the Clinical Skills Center and state-of-the-art simulations to encourage interprofessional educational efforts emphasizing primary care procedures.

The manner in which medicine is taught is evolving to include the advancements in simulation training, says Matthew Lunning, DO, chief resident for the Department of Internal Medicine.

“We are seeing a shift toward clinical simulation and the development of specific milestones,” Dr. Lunning says. “In the past, we’ve had a much more global concept of the levels of competency in medical training. By using a milestone concept, we’ll be able to define these levels of learning much better, and we think it will provide a greater sense of achievement when these milestones are reached.”

The steps UNMC is taking to incorporate simulation training may serve as a model for the establishment of universally-accepted milestones. “The milestone concept will better define what true training is, and what true mastery is,” Dr. Vokoun says.

UNMC residents currently use simulation training to practice lumbar punctures, central line placements, thoracentesis and arterial line placements.

Eventual use of simulation in a “code blue” situation would involve team training using UNMC protocols for advanced life support. That team training in a simulation will allow residents to practice delegating specific tasks in an urgent and often chaotic environment. It would also afford residents the opportunity to see what works well and to improve on what doesn’t.

The Sorrell lab includes 16 outpatient rooms –10 large rooms and six smaller rooms – and a hospital suite with eight beds.

Each room is equipped with two video cameras and a microphone that provides digital video and audio recording and playback capability. Two rooms have windows for observation, and an intercom system aids communication between faculty and students.

One of the large rooms can be used as a simulated operating room, or as a laboratory for technical instruction in which virtual reality is used to conduct clinical skills testing.

At the OVAMC, students and residents take advantage of simulation training in impromptu settings, often when a faculty member wants to illustrate a particular procedure or situation.

First-year residents benefit from the Sorrell Center’s hands-on equipment and the videotaping capabilities. Conducting physical histories with simulated patients (actors) and later watching the video of the sessions gives a resident unadulterated feedback regarding his or her communication skills. Critiquing residents’ listening skills and actions addresses issues of confidence, letting residents see they are capable of doing the job.

Simulation training offers an opportunity for verbal exchanges between faculty and residents. Simulations provide an informal format for learning, eliminate self-consciousness and allow residents to ask questions they might not ask in front of patients.

Simulation can also build confidence handling equipment.

“Some of the procedures we use are relatively simple but everyone needs to become comfortable with the tools,” Dr. Vokoun says, “whether it’s the feel of a syringe in your hand or knowing the best way to open one of the pre-packed kits we use. Being able to master these things in a learning environment instills the ability to do it quickly and confidently in an emergency.”

Although the effect of simulation training on residents at UNMC has not yet been measured, there is a desire to conduct a retrospective analysis comparing the performance of physicians who were not simulation trained against those who were, noting for example, whether one is more comfortable supervising other learners, Dr. Lunning says.

There is enough data currently available to indicate the suitability of simulation training, which will likely be required in the future for students and residents nationwide.

UNMC is incorporating simulation training at this time due to the availability of the clinical skills simulation center, and to improve both the skills of residents and patient care.

“This is the future of medical training,” Dr. Vokoun says. “We have no reason to wait until tomorrow to make it happen here.”
UNMC and VA Researchers Share Common Goal:

More Effective Treatments for Rheumatoid Arthritis
Up-and-coming faculty members in the Department of Internal Medicine looking for a research focus and mentors don’t need to look far for inspiration. For more than 20 years, faculty members in the Division of Rheumatology and Immunology have been leading the way in research that is advancing new treatments for rheumatoid arthritis (RA).

Division Chief James O’Dell, MD, is considered a pioneer and one of the leading proponents of RA research. In 1989, he founded the Rheumatoid Arthritis Investigational Network (RAIN). Together, he and a team of more than 40 private-practice rheumatologists from around the United States conduct investigator-initiated—instead of pharmaceutical-initiated—trials to find better treatments for RA.

An internationally recognized clinical research program, RAIN initiated the use of combinations of medications to treat RA; was one of the first to describe genetic factors that predict response to therapy; and has done extensive work with the use of minocycline, a tetracycline antibiotic, in treating RA.

“RAIN has given rheumatologists a way to take the lead in addressing investigator-initiated questions,” said Dr. O’Dell. “Many drug companies can’t or aren’t in a position to answer those questions about what’s next in RA. Our trials are helping provide insight on how to advance RA therapies.”

The RAIN database currently is home to more than 40,000 patient records for nearly 10,000 patients in 43 U.S. states and six clinics.

The Veteran Affairs Rheumatoid Arthritis (VARA) registry is another of several large databases that researchers at the University of Nebraska Medical Center and Omaha Veterans Affairs Medical Center (OVAMC) have been instrumental in developing.

The VARA Registry was founded in 2003, by UNMC faculty member and VA researcher Ted Mikuls, MD, MSPH.

The registry contains information on approximately 1,500 U.S. veterans with RA, with more than 90 percent of the database comprised of men. The makeup of the cohort is significant, given that fewer men are reported to suffer from RA and as a result have been under-represented in RA research. Researchers hope the mix may offer important findings into a population that’s usually affected by RA later in life.

Currently, nine VA sites nationally contribute information to the VARA database, which combines a well-defined clinical cohort with radiographic data, serological studies, DNA information and banked biological materials.

The data collected has sparked the interest of national researchers who have mined thousands of genotypes from the data to use in their own clinical studies. The information has the potential to show scientists how genetic and environmental factors have an impact on the cause of RA.

“VARA has served as a tremendous resource for researchers both at the Omaha VA and nationally,” Dr. Mikuls said. “The unique study population, coupled with the vast amount of available data, has provided us with a rare opportunity to simultaneously address many important questions.”

The VARA database is one of many ways Dr. Mikuls is lending his expertise to breakthroughs in RA treatment and outcomes. His interest in the subject started as a resident at UNMC, as a protégé of his mentor, Dr. O’Dell.

Now considered by his peers as a thought leader in the area and an expert on co-morbidity of RA, Dr. Mikuls is interested in examining the genetic links of RA to environmental factors like smoking and periodontal disease and the connection between RA and autoantibodies.

He also serves as co-director of the Nebraska Arthritis Outcomes Research Center (NAORC) and is a member of the American College of Rheumatology (ACR) Committee on Research, charged with defining the RA research agenda for the next decade.

Dr. Mikuls currently holds a three-year, $452,000 VA Merit grant to study the impact of genetic pathways and smoking in RA patients. In addition, he recently was awarded a three-year, $1.2 million ACR Research and Education Foundation’s Within Our Reach Rheumatoid Arthritis Clinical Practice Research Grant, allowing him to further investigate the key factors of periodonitis and P. gingivalis in rheumatoid arthritis.
Geoff Thiele, PhD, a colleague of Dr. Mikuls and Dr. O’Dell, knows the importance of sharing his lab for a greater good. A career research scientist in the VA system, he directs the Experimental Immunology Laboratories (EIL) at the Omaha VA and UNMC, which have been in existence since 1982. There, he leads efforts to link RA research with other disciplines.

He currently directs efforts of two national VA bio-repositories including VARA and the more recently developed Crystal Registry, the latter a large multi-center gout cohort from the VA. When specific studies are initiated, the EIL also runs many of the assays to evaluate the immune parameters associated with RA, such as Western blot, ELISA, immunohistochemistry and nephelometry.

Over the years, Dr. Thiele has collaborated with UNMC faculty, notably in three specific areas of research: to study alcoholic liver disease with Lynell Klassen, MD, chair of the UNMC Department of Internal Medicine and a Division faculty member; to investigate the latest outcomes in RA studies with Dr. O’Dell; and to study the effects of the immune system in arteriosclerosis in relation to RA with UNMC cardiologist Dan Anderson, MD.

In 2010, Dr. Thiele’s work included a growing number of cross-departmental collaborations. Currently, Drs. Thiele and Mikuls have been working with Dong Wang, PhD, in the UNMC College of Pharmacy, studying nanoparticles as a new way of delivering anti-inflammatory RA drugs at the site, rather than systemically.
Recently funded work with Dr. Kaihong Su in the Department of Pathology and Microbiology investigates the role of anti-neutrophil antibodies to initiated kidney damage in systemic lupus erythematosus (SLE) using a precision-cut kidney slice model as target tissue. Additionally, studies with Dr. Laura Bilek in the College of Allied Health have focused on the effects of exercise on the inflammatory markers in RA and resultant disease activity.

These seasoned scientists play a key role in helping newer faculty and students in the Division develop their interests in the rapidly expanding area of RA research.

“With the increased emphasis by the NIH and VA to perform research with high clinical significance and translational potential, the studies performed by our group have generated the baseline data from which other investigators will be able to start,” said Dr. Thiele. “Because these samples have been well characterized, an investigator can immediately perform studies asking more specific questions, allowing them to rapidly ask questions and get their answers.”

At UNMC, Kaleb Michaud, PhD, has found a fertile environment for his work. His primary interests revolve around pharmacoepidemiology, health outcomes, quality of life and cost-effectiveness in rheumatology.

Since coming to the medical center in 2007, he has become involved with VARA, the RAIN database as its principal investigator, and as co-director for the National Data Bank for Rheumatic Diseases (NDB). He spends much of his time working and collaborating with others using the NDB, the world’s largest patient-reported research databank for rheumatic disorders in the U.S., with more than 36,000 patients.

In his role at UNMC, Dr. Michaud is funded by the Arthritis Foundation to study the cost-effectiveness in total joint replacement in RA patients. He also has received an NIH Challenge grant to investigate the effect of biological medications in RA treatment—a collaborative effort with Boston University Medical Center, UNMC Orthopaedics and the NAORC.

Like those who influenced him, Dr. Michaud is finding his own opportunity to mentor young scientists in the Department.

Ben Miriovsky, MD, was still a resident in 2009 and juggling the hectic schedule of a student and clinical practitioner. Even so, he found time to prepare his abstract and manuscript to receive the prestigious ACR Residency Research Award.

Dr. Miriovsky’s research focused on how auto-antibody concentrations can predict the severity of RA in U.S. veterans over time. In more recent efforts, he has found that cigarette smoking predicts greater disease activity in RA over time. Through his work with Drs. Mikuls and Michaud, Dr. Miriovsky gained expertise in the use of a rheumatology statistical package and familiarity with the VARA registry. His work earned him the only national ACR resident research award given in 2009 and his manuscript was accepted for publication.

Amy Cannella, MD, is a junior faculty member. Under the mentorship of Dr. Mikuls, she is currently getting her master’s degree in clinical and translational research. She directs the rheumatology fellowship program; her research interests include educational and musculoskeletal ultrasound research.

“I’ve found a very supportive environment within the Division to develop the tools and means to become a clinical researcher,” she said. “Here, I can have the best of both worlds—an opportunity to continue to advance my research while also contributing to our new students’ education.”

As for Dr. O’Dell, he’s far from resting on the reputation he began building more than two decades ago. His latest research interest is another of his own design and a project that he now chairs—the multi-center study, Rheumatoid Arthritis: Comparison of Active Therapies in Patients with Active Disease Despite Methotrexate Therapy (RACAT). Pronounced “Rocket,” the first-of-its kind study compares the cost effectiveness of two commonly prescribed drug regimens. One, a traditional triple therapy, costs $1,000; the other, a biologic, costs $25,000 for one year of treatment before insurance. Triple therapy was discovered by the RAIN group and popularized by a 1996 article published by RAIN in the New England Journal of Medicine.

The $14 million VA Cooperative Study Program (CSP) project includes 15 VA sites, 10 sites in Canada and 10 sites in the RAIN program. Begun in 2007 and planned to continue through April 2012, the study currently has 340 patients enrolled with a target enrollment of 400 patients.

This study builds on the Treatment of Early Aggressive Rheumatoid Arthritis (TEAR) investigator-initiated study done in collaboration with the University of Alabama-Birmingham. TEAR has changed some widely held perceptions about the effectiveness of biologics compared to conventional cheaper medications. In the patient population, the less expensive, conventional therapy has been found to be as potent as the pricey biologic. RACAT will build on these findings in different patient populations.

“We are proud to have developed studies like TEAR and RACAT, which are examples of comparative effectiveness research at its best. Not only will these studies benefit thousands of patients around the world with RA, they will help provide much more cost-effective care, saving millions of dollars,” Dr. O’Dell said.

Since 1990, UNMC and VA researchers investigating RA have been awarded more than $30 million in funding by Veterans Affairs, the National Institutes of Health and other national organizations.
### EDUCATION

- **166** Internal Medicine Faculty
- **125** house officers
- **469** medical students completed clerkships/rotations
- **13** consecutive years of 100% Internal Medicine Board pass rate
- #1 departmental rank on AAMC graduate questionnaire

### CLINICAL

- **108,186** outpatient visits
- **15** clinical locations
- **61,943** hospital patient days
- **131** bone marrow transplants
- **5,429** GI procedures
- **10** clinical divisions
- **358,850** wRVUs
- **$60,413,076** in professional fee charges

### RESEARCH

- **53** funded principal investigators
- **$19,154,765** in extramural research funding
- **231** publications
divisions: separate but interrelated teams bound by:

COMMON VALUES • COMMON MISSION • COMMON TRAINING
A decade ago, the electronic health record (EHR) was still in its infancy, more a curiosity than a tool with practical application. Fast forward to today and the number of physicians and health care institutions using the EHR is growing.

That’s due in part to a push by lawmakers for health care providers nationwide to adopt the technology. In order to qualify for financial incentives set out by the Office of the National Coordinator for Health Information Technology, providers must demonstrate meaningful use of a certified EHR system. The rules for this program include quality, safety, and efficiency improvements that will soon be finalized.

The EHR, by definition, is a method of gathering, storing, retrieving and sharing a patient’s medical history in a digital format. Since its inception, it’s generated plenty of discussion for what it should do—namely, make providers’ jobs easier, save money, improve the care of their patients and reduce medical errors—and the reality of what it actually can do.

It’s a debate that has drawn the interest of UNMC Cardiology Division Chief John Windle, MD. During the past 10 years, he has been heavily involved in analyzing and contributing to developments in the EHR.

“Through our research, we’ve found that physicians are pretty unhappy with the EHR,” he said. “Physicians have shown a much different perception of the perceived benefits of the technology compared with administrators and policymakers who often only see the promise and don’t understand how complex the questions are.”

Incorporating the “human factor”—bringing best practices and guidelines that fit with workflow and enhance value to the patient—is the focus of the UNMC Cardiovascular Knowledge Engineering Group (KEG).

Formed in 2008 in response to providers’ requests for better designed and integrated health information systems, the KEG team is focused on acquiring, validating and re-using the implicit knowledge in the EHR within the scope of cardiovascular care.

The information they gather uses a method with the look and feel of a natural language system, while still fitting into the structured workflow of the health care environment.

“The trend in medicine is to use computerized decision support, utilizing guidelines to determine best practices and implementing ways to incorporate them at the point of care,” Dr. Windle said. “At UNMC, we’ve been interested in translating those
guidelines into a computable format that we can bring to the practitioners’ area of work and then build on them.”

Data can be put into the UNMC database to add a patient’s data to registries in real time. The information populates a check sheet created in a sequential manner. Subsequently, practitioners can sort and view not only individual but also cumulative data—answering the question, for example, ‘How many patients with chest pain did we treat in 2009?’

The KEG team also has designed a Web-based Computerized Physician Order Entry (CPOE) platform, a system made by health care providers for health care providers.

The flexible framework and logical cues of the WebCPOE system allow designers to build more complete order sets, pharmacy orders, checklists and care plans without long lead times and expense. One key to its success is that the template is made up of reusable pieces overseen by an order set librarian and that can be further customized for the clinical user.

Users can access the patient record from anywhere there’s an Internet connection; their instructions within the record make it a signed document. Launched in the Cardiology division, today WebCPOE is used in four beta sites at UNMC and will eventually go system-wide.

WebCPOE is designed to match the cognitive process of how providers have been trained in medicine and recognize the differences between disciplines. How information is collected and what is collected can be fundamentally different, Dr. Windle said. Those distinctions—and the fact that those are things yet to be reported in the literature—make the work of the UNMC team that much more significant.

UNMC Division of Cardiology researchers Dr. Feng Xie, Dr. Thomas Porter and Dr. Shunji Gao are studying how a new, non-invasive ultrasound and targeted microbubble treatment may prevent permanent heart damage following a heart attack. The team created a myocardial salvagability index, quantified by magnetic resonance imaging, which shows that the new treatment can save a large portion of heart muscle that otherwise would undergo necrosis if treated by drugs and emergent stenting of the occluded coronary artery. Studies are currently being performed to evaluate the effectiveness of treatment in pig subjects. Following this NIH-funded study, the researchers anticipate human studies to be conducted at four worldwide sites, including UNMC.

To offer a broader, more comprehensive training experience, the UNMC Cardiovascular Fellowship Program recently expanded to a four-year model. Fellows who elect the 2+2 curriculum have the opportunity to be chosen to participate in Interventional Cardiology or Cardiac Electrophysiology during their second year. Their third year of general cardiology fellowship will prepare them for their fourth year of training in these fields.

The 3+1 curriculum offers advanced levels of training and exposure in general cardiology, heart failure, research or cardiac imaging. In this track, year three focuses on advanced clinical training and/or research; year four offers more clinical training and/or research in their chosen area. Both pathways provide eligibility for fellows after year three to take the American Board of Internal Medicine certifying examination in Cardiovascular Disease.

John Haas, MD
Leslie Hershkowitz, MD
Daniel Matthers Jr., MD
Edward O’Leary, MD

Thomas Porter, MD
Eugenia Raichlin, MD
Samer Sayyed, MD
John Scherschel, MD

Thomas Sears, MD
Scott Shurmur, MD
Monique Smith, MD
Nattapong Sricharoen, MD

Keith Weeks, MD
Eric Williams, MD
John Windle, MD
Feng Xie, MD
In medical research, it’s often the old discoveries that present opportunities for new applications—and, potentially, new treatments. That’s the case in the UNMC Division of Diabetes, Endocrinology and Metabolism (DEM), where researcher Robert Bennett, PhD, is studying the receptor for relaxin, a hormone that may reveal new ways to treat liver fibrosis and cirrhosis.

Part of the insulin family, relaxin was first discovered in 1926. Scientists originally studied its role as a pregnancy hormone produced in the reproductive tract of some mammals.

The study of relaxin has long been a part of the work being done in the lab at the Omaha VA Medical Center. Researchers in the Division are part of a bigger community of UNMC scientists. That kind of inter-departmental and inter-hospital collaboration is important, said Dr. Jennifer Larsen, DEM division chief.

“The VA lab is a home base for trainees or new faculty in our Division who are interested in specific areas of study such as diabetes and obesity. The lab provides close interactions in new areas of research, and that’s very good for translational research.”

Dr. Bennett came to the VA lab in 1987, working as a technician and seeing firsthand the work of world-renowned scientists. His PhD mentor introduced him to relaxin, which was being studied as a negative control for the insulin receptor.

“Our research began by extracting cells from the liver and treating these cultures with relaxin to see how the cells behaved,” Dr. Bennett said. His interest piqued, he began to investigate new aspects of what the hormone could do.

His work became more interesting in 2002, when international researchers found the receptor for relaxin—making it easier to study and causing what he called an “explosion of interest” in its possibilities.

In the past decade, the hormone has emerged as a natural suppressor of age-related fibrosis in many tissues, including the skin, lung, kidney and heart. It also has been shown to be effective in preventing and treating a variety of models of experimentally induced fibrosis.

Furthermore, relaxin-null mice were found to develop age-related fibrosis in the lung, kidney, heart and skin. Together, these findings suggest that relaxin may function as
a protective agent against fibrosis outside the reproductive system.

To do that, Dr. Bennett and scientists around the world have been looking for a way to use relaxin to “turn off” the excess collagen production that can lead to fibrosis.

It was the combination of what he learned in a seminar seven years ago and a subsequent conversation with a VA research colleague that sparked an idea.

In the session he attended, the researcher learned about hepatic stellate cells—star-shaped cells that are involved in causing liver fibrosis.

“I had just read an article about how relaxin decreases cellular collagen production and realized that these cells are the same ones that the hormone targets in the other tissues,” said Dr. Bennett. “Afterward, I talked with Dr. Dean Tuma, who was one of our leading liver researchers, and wondered if these cells could be treated.”

What started as “kind of an interesting side project” turned into something bigger. Today, he is one of approximately 120 people in the world currently researching the effects of relaxin. Dr. Bennett is one of the few who is studying its impact on liver fibrosis specifically.

Dr. Bennett and his colleagues have conducted several studies on the effects of relaxin signal transduction in mice, including looking at those that have the receptor and those that do not. Their findings consistently suggest that relaxin can reduce fibrosis in models of progressive and established liver fibrosis.

“I’d love to see this lead to a treatment for fibrosis and cirrhosis in people,” Dr. Bennett said. “The interesting thing about how relaxin works is that it doesn’t matter what caused the fibrosis,” a fact that may provide treatment possibilities for a larger segment of the population.

The Division of DEM is committed to interdisciplinary education, providing coursework for third and fourth year medical students, internal medicine and family medicine residents, endocrine fellows, physician assistant students, nurse practitioner students and dietary interns. International medical students from China and India also rotate through the clinics. Graduate students and summer undergraduate research students round out the many types of students who can be observed in and around the divisions’ offices, clinics and laboratories. During the last year, 99 students and trainees participated in the Division’s different electives, taught by a team of health care professionals. Interdisciplinary education is more the rule than the exception, so participants may be taught by, work with, or be supervised by a physician, a scientist, a physician assistant, a nurse practitioner, a nurse or dietician diabetes educator, an exercise therapist, or any combination of the above.

In addition to general endocrinology clinics, The Nebraska Medical Center offers specialized clinics for acute endocrine care, women’s health, bone and metabolic disease, young adults with diabetes, high-risk obstetrics patients with endocrine disease, cystic fibrosis-related diabetes, pancreas and kidney transplant, diabetes foot care, thyroid disease, and thyroid biopsy clinics. At the Omaha VA Medical Center, provider clinics are focused on complex diabetes, diabetes group, insulin pump and general endocrine clinics. The VA diabetes service also oversees an obesity prevention and management program called MOVE! Diabetes and endocrine services are regularly provided to rural VA clinics through telemedicine; Dr. James T. Lane, along with The Nebraska Medical Center, recently began offering telemedicine consults throughout Nebraska, as well.
Around the world, a growing number of people—five million and counting—are becoming chronically infected with hepatitis B and C. The prevalence of these viral infections is turning liver carcinoma into a global health problem that could reach epidemic proportions.

“Over the next 20 years, there’s going to be an explosion in the number of adults with liver cancer,” said Mark Mailliard, MD, chief of the UNMC Division of Gastroenterology and Hepatology. “One in 50 patients who are infected could develop carcinomas. In the Omaha area, that problem will be caused primarily by hepatitis C.” Today, the Division coordinates care for 700 patients with chronic hepatitis C.

Treating these patients requires a collaborative, multi-department approach. Dr. Mailliard needed someone who could bring a variety of disciplines together to diagnose and treat patients—a pioneer who could lead the team.

He turned to colleague Fedja Rochling, MD. “One of our missions as physicians is to give people hope and offer them more advanced treatment,” Dr. Rochling said. “With the volume of science that’s coming out, you need to keep up, and you can only do this with a multi-disciplinary approach.”

In 2003, he founded the UNMC Hepatocellular Cancer Tumor Board, a meeting that brings together talented clinicians from oncology, radiology, pathology, interventional radiology, radiation oncology, hepatology and liver transplant surgery.

Patients are seen in one of three settings, by their gastroenterologist, oncologist or surgeon. Using a discussion platform provided by the UNMC liver transplant team—considered one of the best in the United States—physicians coordinate each patient’s movement through the different experts who decide on the most advantageous treatment for their patients.

The team evaluates new patients with hepatic carcinoma and reviews the progress of treated patients. While most cases involve primary liver cancers, they also see patients with metastatic liver disease and other types of tumors, such as neuroendocrine tumors.

The reputation of the forum, its physicians and the institution draws patients from the Omaha area, and all over the U.S.
“Throughout UNMC, we have a tradition of providing care for patients who feel that they have no other options,” Dr. Mailliard said. “It’s not uncommon for our team to see patients who have been turned down by other places, who we’ve helped see some success.”

The HCC Tumor Board reviews patients with otherwise untransplantable tumors who have no metastasis of the disease and no major vascular lesions, said Dr. Rochling. In some cases, physicians can downstage a tumor by giving other therapies like external beam radiation or chemo-embolization, making the patient eligible for transplant.

In every case, collaboration among the physicians is critical to providing the necessary expertise to patients.

“Medical specialties tend to be compartmentalized where physicians approach problems in a standardized way,” says Gregory Gordon, MD, UNMC chief of interventional radiology.

“By bringing together multiple specialties, each approaching a specific problem from a different viewpoint, our patients receive the best and most appropriate care for their specific problem. Dr. Rochling is the perfect person to develop the clinic. He’s a dedicated and compassionate physician and has helped to create a center of excellence where cooperation overrides competition.”

Dee Harrison-Findik, DVM, PhD, received the 2009 UNMC Internal Medicine Basic Science Research Award. Her research focuses on the role of iron as a secondary risk factor in liver diseases. Oxidative stress induced by agents such as alcohol or hepatitis C viral proteins is one of the primary underlying mechanisms of iron overload. Hers was one of the first research groups demonstrating the involvement of hepcidin, a key iron regulatory protein, in iron accumulation in liver diseases. The lab employs transgenic mouse models deficient in antioxidant enzymes or oxygen transport to understand the molecular mechanisms of iron overload in liver diseases. Understanding these processes may help researchers develop novel diagnostic markers and therapeutic strategies.

The fellowship program in the Division of Gastroenterology and Hepatology offers participants the opportunity to train in all procedural aspects of GI and liver disease. Currently, seven fellows are engaged in GI physiology and endoscopy service; three transplant hepatology fellows are focused on pre- and post-transplant liver disease. Each fellow also completes a six-month protected research block in either basic or clinical research at the Omaha VA Hospital or UNMC. Fellows attend several national meetings, including Digestive Diseases Week, AASLD’s liver meeting, and the American College of Gastroenterology (AGA) conference. This year, a second-year fellow will attend a month-long Visiting Inflammatory Bowel Disease Rotation at the University of North Carolina, sponsored by the Crohn’s and Colitis Foundation of America (CCFA).
Turner Park’s Patient-Centered Medical Home (PCMH) Model Puts Focus on Proactive Care

In an age of medicine where specialized care has become the norm, a group of UNMC physicians has embraced a new model—one designed to improve health care access and outcomes while containing costs for primary care services.

At the Turner Park Clinic in midtown Omaha, members of the Division of General Internal Medicine have implemented the Patient-Centered Medical Home (PCMH). More a philosophy than a physical place, the PCMH concept takes a new approach to patient care, said Division Chief Thomas Tape, MD.

“The goal of the PCMH is to oversee and coordinate all parts of a patient’s care. It involves a comprehensive, team-oriented, proactive approach in the way we diagnose and treat patients. Instead of waiting for people to come to us, we want to reach out to them to ultimately improve their experience.”

The Turner Park Clinic serves a traditionally underserved, uninsured and poorer population. “The barriers to health care for these patients are a lot different than in affluent parts of the city,” noted Robert Schwab, MD, assistant professor of Internal Medicine. “If our patients don’t come to their follow-up appointments, they may end up in the hospital or ER.”

Those return visits not only stress the patient and care team, but also affect the financial bottom line for the clinic, and perhaps ultimately, for our hospital partner, The Nebraska Medical Center. The PCMH provides an opportunity to address how to improve these patients’ care. This model adds another dimension to a clinic that already is innovative.

One of the few facilities of its kind in the United States, the Turner Park Clinic is run by UNMC residents. They see patients under the guidance of attending physicians, serve on the Turner Park Clinic board of directors, and are fully responsible for the daily operations and administration of the clinic.

In 2009, clinic physicians and staff implemented the first aspects of the PCMH philosophy. One of those initiatives addressed improving patient education at the time of hospital discharge to help reduce 30-day re-hospitalization rates and repeat ER visits.

Physicians and staff developed a new Patient Education Discharge Form (PEDF) that puts instructions in easy-to-understand terms.
Nursing staff recap the physician’s instructions line by line with the patient, before the individual leaves the hospital. The information is entered into the electronic medical record, printed and sent home with the patient. A pharmacist also contacts the patient within 24 hours of their hospital visit to discuss medications and confirm that they’re taking the correct medicine and dosage.

Results from using the PEDF have been encouraging. Ninety percent of patients who received the form return for their follow-up appointment at the Turner Park Clinic. Patient feedback also shows that they appreciate this personal touch. (See Fig. 1)

A second initiative aids Turner Park’s diabetic population. The care team, together with UNMC’s Information Technology Services, put together a registry of patients whose diabetic illness wasn’t well controlled. The group developed free education classes to help these individuals make positive changes in their lives.

Held after clinic hours once a month, the classes are coordinated by residents and attended by physician faculty, certified diabetes educators, pharmacists and dieticians. Besides information, patients receive free glucose meters and take-home bags with a recipe, instruction sheets and test strips; dieticians provide healthy snacks. The sessions have been well attended and patients say they see the value in the education.

With these two initiatives, the Turner Park group already has seen the impact of the PCMH model. It’s their hope that by improving patients’ health through education and proactive care—and, in turn, reducing costs—the clinic can develop additional disease management programs.

Ensuring quality in health care takes a commitment to achieving consistency in the biggest challenges and the smallest details. Recently, two General Internal Medicine hospitalists completed training focused on how to carry out a quality improvement initiative in their own organization. In Fall 2009, Dr. Julie Fedderson and Dr. Gale Etherton completed the Intermountain Health Advanced Training Program in Salt Lake City. Led by noted QI champion Dr. Brent James, the four-month, 20-day course studied topics including quality improvement, outcome measurement and management of both clinical and non-clinical processes. The UNMC physicians now are working with colleagues to apply these concepts to everyday aspects of patient care.

Asking effective questions is integral to the art and science of medicine. For 30 years, the Division of General Internal Medicine has included the Socratic questioning method in the medical school curriculum to encourage critical thinking. Originated by Dr. LeeRoy Meyer as part of a senior-level medicine elective, this philosophy is carried on by Dr. David O’Dell, director of medical student education in the Department, and Dr. Scott Neumeister. The course they teach challenges students not only to demonstrate what they know, but also to put it in varying contexts. In turn, students become self-directed thinkers who are well positioned to take care of patients with complicated diagnoses.
Aging is an undisputed fact of life. But there’s a lot yet to be discovered in exactly how we age and the effect of aging on the way older people function.

This mystery is the focus of research being conducted in the laboratory of Stephen Bonasera, MD. The neuroscientist and clinician, a member of the Division of Geriatrics and Gerontology, first became interested in memory and aging about nine years ago, when he worked at the University of California-San Francisco.

“In a way, aging has become the final frontier,” he said. “We know what people’s joints should look like as they age and how their skin will change. But we still don’t understand some of the changes in the body and why some people age differently. We wanted to answer the question, what do different parts of the brain look like as we get older?”

The findings, he believes, could provide insight into how changes in the brain of older individuals affect activities like walking, eating, drinking, resting and socializing—the same factors that affect a senior’s ability to remain independent and remain at home.

Many investigators combine how well people can perform these behaviors into a single measurement called “lifespace.” The usual methods that measure lifespace are quite broad, however, and only are a snapshot of an individual at a given time.

In Dr. Bonasera’s lab, he and other scientists are studying lifespace in mouse models of aging and in translational clinical studies of human aging.

His research, funded by an RO1 basic research grant from the National Institutes of Health, looks at a cohort of mice—young, middle-aged and aged—to precisely measure feeding, drinking, movement and how these behaviors occur day to day.

Then, the research group studies age-related changes in gene expression in different regions of the brain to determine possible factors influencing these important functional behaviors.

In the older mice, there is a decrease in food and water intake, a behavior that parallels that of older adults. That finding correlates with an impairment of immune/defense gene expression within the hypothalamus, the “central clearinghouse” of the brain for eating, drinking and resting. It also relates to an overall impairment of gene expression synchronized within cells.
Dr. Bonasera’s research in aging began at the University of California-San Francisco, where he collaborated with scientists A. Katrin Schenk, PhD, Evan Goulding, MD, and Larry Tecott, MD, PhD. In the UNMC lab, his team partners with Hamid Sharif, PhD, and Michael Hempel, PhD, at the Telecommunications Engineering Lab at the University of Nebraska-Lincoln.
Trio of New ID Physicians Lead Special Programs and Services

Their backgrounds represent a range of geographical points on the map. But for three physicians, one place has earned particular significance for them as they advance their careers.

In July 2009, the UNMC Division of Infectious Diseases welcomed three physicians as assistant professors and clinical staff: Angela Hewlett, MD; Uriel Sandkovsky, MD; and Trevor Van Schooneveld, MD.

“These young doctors are a great example of the importance of recruiting well-trained people with new ideas,” said Philip Smith, MD, chief of the Division. “They are an excellent addition to our team as we continue to develop new services and new programs. They bring enthusiasm and energy to our Division, and are willing to pitch in and help their colleagues.”

A native of Houston, Dr. Hewlett completed medical school and her residency in internal medicine at the University of Texas Medical Branch. She completed a clinical and research fellowship in infectious diseases at UTMB in 2009.

Her wish to combine patient care, teaching and research—incorporating her interest in orthopaedic infectious disease and her master’s degree in clinical science—led her to UNMC.

Dr. Hewlett was recruited to establish an orthopaedic continuity service; since starting at UNMC, she has established a clinic where she sees patients with complicated bone and joint infections. She also works with orthopaedic surgeons to establish research protocols in the area, which can enhance the diagnosis and prevention of prosthetic joint infections.

Her interests also include healthcare epidemiology, infection control and biopreparedness. She serves as the associate director of the UNMC biocontainment unit. Established in 2005 and directed by Dr. Smith, the unit is one of only three of its kind in the United States and the largest center in the country for isolating patients with hazardous infectious diseases such as avian flu and smallpox.

“I knew UNMC would provide a rare opportunity to work with individuals who are experts in a variety of areas,” Dr. Hewlett said. “Since my arrival, I’ve realized just how unique the medical center is, from its excellence in medical education to cutting-edge research to the best patient care and technologies.”

Dr. Sandkovsky, originally from Argentina, received his medical training at Maimonides University in Buenos Aires. He completed an internal medicine residency at the Columbia University of Physicians and Surgeons and a
fellowship at Albert Einstein College of Medicine in New York.

He brings to his new post significant experience and a cultivated interest in HIV clinical care. Together with Susan Swindells, MD, medical director of the UNMC HIV Clinic, Dr. Sandkovsky follows nearly 1,000 HIV patients through Nebraska’s only official HIV clinic.

For 20 years, the HIV Clinic has been an ally for those in all stages of the disease. In addition to treating patients, the clinic provides education to health care professionals at the Nebraska AIDS Education and Training Center and offers opportunities for patients to participate in cutting-edge research as part of the AIDS Clinical Trials Group.

“I've always had an interest in HIV,” said Dr. Sandkovsky. “At UNMC, I can work in an area I love and also accomplish work in my other interests. Here, I have the opportunity to see the full spectrum of infectious diseases, take part in important research and teach in a university setting.”

His research interests include studying opportunistic infections, and the immuno pathogenesis of HIV, and investigating anti-retroviral therapies.

For Dr. Van Schooneveld, a Colorado native, coming to UNMC meant returning to the institution where he earned his medical degree and completed his residency in internal medicine.

His scientific interests and desire to serve patients led him to his role as director of the Antimicrobial Stewardship Program (ASP) at The Nebraska Medical Center. The mission of the ASP, which has been active since 2004, is to optimize the use of antimicrobial agents to help improve patient outcomes. In his role, Dr. Van Schooneveld works with the UNMC microbiology lab and Infection Control to educate both patients and physicians through bedside visits, phone calls, educational conferences and hospital publications.

“The goal of the program is to make sure patients are treated appropriately—receiving the right drug for the right bug,” he said. “Through the ASP, we evaluate hospitalized patients who are receiving antibiotics and work to educate everyone about the consequences of misuse of antibiotics, including resistance and superinfections.”

In the Healthcare Epidemiology and Infection Control area of the Division, Dr. Van Schooneveld also collaborates with Mark Rupp, MD, in a comprehensive program to optimize hospital safety and prevent hospital infections in patients and employees.

The Division of Infectious Diseases continues to aggressively contribute to the department’s national reputation by its scholarly activities. In the past year, 12 ID faculty published 36 peer-reviewed articles and garnered $3,693,670 in extramural grant support.
One in nine adults has chronic kidney disease, and the incidence is increasing each year. The question for Nebraskans is: Who will help take care of the many problems—including hemodialysis and renal transplants—that these patients develop?

This is why the Division of Nephrology has developed a state-of-the-art renal training program that includes innovative uses of simulation training, competency in interventional nephrology, and skill in dealing with the medical complication of kidney transplants.

For fellows in the Division of Nephrology, UNMC offers an opportunity to care for patients with many varied renal problems at an internationally recognized medical center known for innovative clinical care. The Division directs five outpatient dialysis units, and provides care for over 250 chronic dialysis patients.

The Division’s two-year fellowship program was established in 2007, the same year it received certification from the Accreditation Council for Graduate Medical Education (ACGME).

Each year, two fellows join the program through the National Resident Matching Program to train in 18 months of inpatient clinical rotations and six months of outpatient dialysis and research. During the inpatient service, fellows equally divide their time among seeing patients at UNMC clinics, The Nebraska Medical Center’s Lied Transplant Center and the Omaha VA Medical Center.

UNMC performs about 130 kidney and kidney/pancreas transplants annually, utilizing the innovative cooperative care model at the Lied Transplant Center.

“Our fellows are involved in all aspects of that program,” said Troy Plumb, MD, director of the nephrology fellowship program, “starting with evaluating the patients in clinic, to following up post-transplant. And because approximately 50 percent of the transplants we perform are with living donors, our fellows play a role in confirming that these patients also are suitable candidates.”

In addition to pre- and posttransplant care, Nephrology fellows treat patients with chronic kidney disease. Because these patients’ care involves receiving hemodialysis—both in clinic and at home—fellowship physicians have a firsthand opportunity to better understand the rigors and requirements of this kind of ongoing care.
“We believe that because of the experiences we can give our fellows,” Dr. Plumb said, “they will have better insight into how to proceed than a physician who sees patients in a less involved manner.”

Those unique situations, fellows have said, are some of the reasons they want to come to UNMC. One of those opportunities involves learning to care for end-stage renal patients. In 2009, Marius Florescu, MD, began an Interventional Nephrology program to provide evaluation and management of vascular access in these patients. During their six-month research/outpatient dialysis training in Year 2, fellows may choose to train with Dr. Florescu, who is certified by the American Society of International Nephrology.

Simulation training also is a key part of the education for UNMC Nephrology fellows. In the past year, Dr. Plumb has led a simulated native kidney biopsy experience—the only fellowship in the United States to do so. Using minimally embalmed cadavers, fellows practice their dexterity, observe a kidney under ultrasound and evaluate tissue.

Though the Division’s fellowship program is relatively young compared with those of other subspecialties, fellows benefit from its strong history of education. The Division of Nephrology consistently ranks in UNMC’s top teacher listings; both Drs. Groggel and Plumb have received the coveted Sir William Osler Award from the senior residents.

“We’re not a large division in terms of numbers, but our fellows say that’s why they appreciate the one-on-one time they have,” said Dr. Plumb. “Fellows who have completed the program and gone on to careers in the field tell us UNMC has prepared them to take exceptional care of patients.”

Through the Division of Nephrology, UNMC offers the largest home hemodialysis program in the Omaha metro area and western Iowa. One of only two home programs in Nebraska, it draws patients from an ever-growing geographic area, including South Dakota, Kansas and greater Iowa. Home dialysis is an especially suitable therapy for patients in rural areas who otherwise face long drives for in-clinic treatment. Instead, these patients undergo treatment more days of the week, but for fewer hours at a time, and in the comfort of their home. The results: more consistent blood levels, fewer hospitalizations and reports of improved well-being.

UNMC, under the direction of the Division of Nephrology, is one of 70 clinical sites participating in the FREEDOM (Following Rehabilitation, Economics and Everyday-Dialysis Outcome Measurements) Study, a nationwide, multi-center trial of daily home hemodialysis patients. Sponsored by NxStage Medical, the two-year study includes up to 500 patients and a matched cohort control group of 5,000 patients on conventional treatment. Preliminary findings reported to the American Society of Nephrology show a reduction in the need for anti-hypertensive medications and a 40 percent reduction in expected mortality of these patients compared with patients in the United States Renal Data System.
For clinical researchers, information about patient outcomes is the key that can lead to advancement in new studies and breakthroughs in therapies.

“In order to know how we want to change treatments, we need to know how we have treated patients in the past,” said Julie Vose, MD, chief of the UNMC Division of Oncology/Hematology and associate director of clinical research in the UNMC Eppley Cancer Center.

An innovative database at UNMC is giving scientists access to current and historical data for thousands of cancer patients, with a few clicks of a computer mouse.

Oncobase—short for “oncology database”—is a patient repository module developed by Fausto Loberiza Jr., MD, a researcher in the Division.

Dr. Loberiza came to UNMC in 2005, after serving as an assistant professor and assistant scientific director of the Center for International Blood and Marrow Transplant Registry (CIBMTR), the largest repository of longitudinal outcomes data on stem cell transplant patients throughout the world.

Using a design model from the National Cancer Institute, Dr. Loberiza created the dataset for Oncobase. It’s populated by electronic medical records that automatically feed the raw data into the database.

This tool, he said, makes it possible for researchers to maintain an important connection with cancer patients, preserving critical data about these individuals.

“The structure of Oncobase was actually designed specifically for research,” Dr. Loberiza said. “It provides us with information for those who have been treated on standard therapies as well as outcomes for those in clinical trials. If we’re planning a clinical trial, for example, and want a baseline response rate for a particular type of lymphoma, the database has that information.”

Those benchmarks help researchers and clinicians alike. “Sometimes, we may see a rare sarcoma where there isn’t a lot of data in literature,” he said. “Using the database, we can look to see if we have treated someone with this condition before. We can also see how these people compare in terms of age and other health conditions. Sometimes that’s the beginning of identifying a treatment for a patient.”

More than 6,000 current and former cancer patients treated at UNMC clinics are included in Oncobase. These individuals,
ages 19 to 60+, come from a five-state area and their cases represent more than 20 types of cancer. Patients consent to be part of the database; since its inception four years ago, 90 percent of individuals have elected to participate—a testament, Dr. Loberiza said, to their desire to help others.

Oncobase also serves to easily identify patients who continue to battle the disease and who may benefit from emerging treatments. Individuals can be sorted according to their type of cancer and invited by mail to participate in upcoming studies.

Five years ago, that wasn’t the case. “Before, there was no way to identify these patients. We had to rely on memory. This database has been transformational in how we formulate future studies,” said Dr. Vose.

The information also helps people who have been diagnosed with a specific cancer and want to know about UNMC’s experience in treating it. Physicians can provide anonymous data about how many patients have been treated in their clinics and the outcomes.

“This is important in a patient’s decisionmaking process,” Dr. Loberiza said. “Knowing these details personalizes it for their situation. A lot of times that is the tipping point for their decision to be treated at UNMC.”

The researcher also underscored patients’ appreciation for what that database represents.

“In a study we conducted about the continuum of care—how well our patients are followed up with physicians—patients said they appreciate the fact that we’re still interested in their well being after their treatment. They say ‘I know this information may not help me today, but it could help me in the future.’”

Oncologists must not only understand cancer at the molecular level, but also be effective communicators with patients and their families. Physicians in the UNMC Oncology/Hematology Fellowship Program receive the experience they need in both of these areas, as well as a variety of skill sets, at the Omaha Veterans Affairs Medical Center (OVAMC) continuity clinic. Throughout their three years of training, fellows conduct the clinics themselves, see their own patients and follow patients’ progress. “The VA clinic is where their knowledge and skills really come together,” said Greg Bociek, MD, director of the Division’s fellowship program. “Our fellows say, ‘This is how I learned how to be an oncologist.’”

Improved treatments have allowed thousands of patients to survive cancer. However, we have come to recognize that many of these patients have long-lasting effects of the disease and its treatment, and need specialized consideration. The UNMC Cancer Survivorship Program was created to provide ongoing general medicine care for these patients, provide recommendations to promote a healthy lifestyle, and design a survivorship plan of care to each patient and their primary care provider. A collaborative effort by all physicians in the Division of Oncology/Hematology, the clinic opened in 2007 under the direction of Deborah Darrington, MD. Its first patients were breast cancer survivors; today, the clinic—a model that remains unique to the region—has expanded the service to all tumor types and provides a multidisciplinary team of care professionals to address the ongoing needs of this special patient population.
Mentors have the ability not only to teach, but also to inspire and motivate. In the UNMC Division of Pulmonary, Critical Care, Sleep & Allergy, this philosophy—a concept based on the age-old apprenticeship model—extends to every discipline and every individual.

Here, mentoring takes many forms, from traditional teaching in the classroom and clinical care at the bedside, to training researchers in the lab. Our influence extends from the first-year medical student to residents, fellows and junior faculty.

Teri J. Barkoukis, MD, exemplifies the mentorship ideal. A board-certified sleep specialist and the director of the UNMC Sleep Fellowship, she’s also a nationally known expert on the education of sleep specialists and has written the first sleep medicine board review textbook, due to be released in its third edition in 2011.

Dr. Barkoukis established the sleep medicine fellowship with university approval in 2000 and received accreditation by the American Academy of Sleep Medicine (AASM) in 2001. The program became fully accredited by the Accreditation Council for Graduate Medical Education (ACGME) in 2006.

The one-year program graduates two fellows each year, although fellows may elect to do additional research time to further their training in sleep medicine. Fellow applicants come from a variety of backgrounds, including internal medicine, family practice, pulmonary, neurology, pediatrics, and psychiatry.

Dr. Barkoukis considers her role as a mentor an integral part of her job in helping form outstanding sleep medicine physicians.

“I’ll do whatever it takes to help our fellows achieve that,” she said. “I encourage them to ask a lot of questions and sit down side by side with me to interpret the information they receive. I want them to know I care about them and their training so they can be the kind of physicians who care about patients and are attuned to the care they provide.”

Brimal Patel, MD, a fellow, has experienced Dr. Barkoukis’ influence firsthand. “Her door is always open—literally,” he said. “The relationship she cultivates has helped me gain confidence, something that’s especially important in a specialty with one year of training. She wants us to succeed, and believes our success is her success, too.”

Like Dr. Barkoukis, Dr. Craig Piquette is serious about his commitment to mentorship. As director of the pulmonary and critical care fellowship, Dr. Piquette shepherds nine physicians through their respective fellowship training at UNMC each year. Three fellows join UNMC every July and spend three years in the program.

Mentorship for a Pulmonary & Critical Care fellow comes from every member of the faculty and the collegiality of the Division promotes the true meaning of fellowship. The faculty demonstrate their mentorship by providing lectures for the fellows, seeing patients with fellows in their clinic and guiding the fellows as they learn new procedures.
Starting in a pulmonary & critical care fellow’s first year, he or she picks a research project by spending time with each faculty member learning about research that is being done in the Division. During their second year, the fellow spends focused time with one mentor on their research project.

Mentorship also was a key to the process of developing a clinical check out tool recently developed through collaboration of experienced faculty physicians, house officers and fellows. Recognizing the difficulty that comes with signing off on patient care, residents and fellows were looking for a way to improve patient care and facilitate the flow of information within the care team.

Led by Dr. David Gannon, the ICU medical director, the group sought to use existing technologies to support an electronic sign out tool. With the help of information technology support staff, they were able to develop a system for documenting patient management issues and allow incoming house officers an easy way to become familiar with patients.

Many of the Division’s mentors started out as protégés themselves, including allergist and immunology researcher, Jill A. Poole, MD. Dr. Poole came to UNMC following her allergy fellowship at National Jewish in Denver and based on her burgeoning research interests was matched with an advisory panel including Drs. Debra Romberger, Todd Wyatt, Susanna Von Essen and Joe Sisson, division chief.

The group brought its experience and resources to bear upon Dr. Poole’s start at UNMC, which was rewarded with Dr. Poole earning a competitive grant award from the National Institute of Environmental Health Sciences (NIEHS). This has propelled her onto an independent research career track.

Dr. Poole’s laboratory research is focused on understanding the underlying mechanisms that allow chronic inhalation of organic dust in agricultural environments that lead to significant airway diseases such as chronic bronchitis, occupational asthma and obstructive lung disease.

Along the way, Dr. Poole, like all other PCCSA faculty, has graciously and professionally mentored others—specifically, internal medicine residents, pulmonary and critical care fellows, and medical students who have rotated through her lab and clinic.

“Working with young and talented students and physicians in the laboratory to design new projects has broadened my research scope and created opportunities to pursue new directions,” she said. “It’s also personally rewarding to work with enthusiastic, energetic people and watch that ‘lightbulb’ turn on when a project works or a new investigation-line becomes interesting.”
Back in 1995, it took only one clinical rotation for UNMC internal medicine student Amy Cannella to realize what area of medicine she wanted to choose: rheumatology. “I was hooked from my first day,” she said. “It was the first internal medicine rotation I did. Everyone was so enthusiastic about education and the subject matter with which they were working.”

Today, Dr. Amy Cannella is the fellowship director for the UNMC Division of Rheumatology and Immunology. She and her colleagues in the Division are instilling that same kind of enthusiasm for learning, as well as dedication to their chosen field, in each group of internal medicine students, residents and fellows.

The rheumatology training curriculum includes regular inpatient and outpatient teaching rounds, a distinct pre- and post-test evaluation, a computer-based x-ray and photographic case series and a didactic lecture series. Internal medicine students may choose a rheumatology elective in their third year, an opportunity not always available in other subspecialties. Ninety-five percent of internal medicine residents opt to take a rheumatology rotation.

Proof of the quality of the curriculum and faculty may be in the numbers: Dr. Cannella and fellow UNMC physician Dr. Alan Erickson, together with other physicians from the Division, have tracked impressive results related to the rheumatology portions of the Internal Medicine In-Training examination and the American Board of Internal Medicine (ABIM) certification examination. Abstracts submitted to the American College of Rheumatology looked at 84 third-year internal medicine residents at UNMC from 2003 to 2009 and all graduating internal medicine residents from 1999 to 2008.

In the Rheumatology subsection of the Internal Medicine In-Training exam, UNMC third-year residents consistently scored in the top decile. These results place the UNMC program at the 96th percentile compared to all programs. In addition, UNMC resident’s individual average scores in the rheumatology section at the ABIM certificate exam are in the top 30 percent of the United States. This ranks UNMC rheumatology in the top 5 percent of the country. Further, UNMC resident’s scores in the Rheumatology division have the highest of all 10 divisions for the last 15 years in a row.
Drs. Cannella and Erickson say the testing performance is a reflection of a commitment to students that starts at the top, with Division Chief James O’Dell, MD, and extends to every faculty member.

“There’s a culture of education at UNMC and everyone is keyed into that,” Dr. Erickson said. “We try to constantly create a balance between service, commitment and communication, including our medical students, residents and fellows.”

Students at every level are included in learning, in the classroom and beyond. Monthly, the Division hosts a City Wide meeting where UNMC physicians as well as rheumatologists and radiologists in the community are invited to attend. Cases and several vignettes are presented by the attendees. Every student on rotation—from third years to fellows—participates in the event.

Fellows in the two-year program take part in an extensive educational curriculum with an optional research-focused third year. Now entering its fifth year, the program continues to grow and attract interest from outside the region; two new fellows from Massachusetts and South Dakota have joined the program in 2010.

The ability to present cases to visiting professors is an important part of the fellowship experience. During their program, fellows may meet world-renowned subspecialists who have written the same chapters they’ve read—people with whom they can make valuable contacts for the future.

The role of finding mentors and being a mentor are equally valuable to these physicians. “Our fellows have an expected teaching role, but they also like to teach,” said Dr. O’Dell. “I see them sitting down and talking with our residents, to go over patient cases and other information. They’re always available for questions.”

During the past 10 years, rheumatology faculty have been honored by colleagues and by students for their achievements in teaching. Division faculty have regularly received the Top Teacher Award by the UNMC Department of Internal Medicine and the Golden Apple for teaching by the second-year medical student class. Faculty also are active members of the American College of Rheumatology (ACR): In 2011, Dr. O’Dell will serve as president of the organization.

“Our culture of teaching is part of who we are and what we’re known for,” Dr. O’Dell said.

“When you promote that and reward that, you can continue that. And if you hire people with those kinds of skills, you’ll find people who are also great teachers.”

Merlyne Polete, RN, BSN, is the heart of coordinating patient care for the UNMC Rheumatology Division. She handles a wide variety of patient issues, and works very closely with the fellows. A crucial link in the patient-physician relationship, Polete interacts with patients daily to educate them about the treatment of their condition. She also extends her expertise to help educate other clinic staff in important rheumatology topics.
2009–2010 Chief Residents & Graduates

Career Plans

Matthew Lunning, DO
2009–10, Chief Resident, UNMC
As of 7/1/10
Oncology/Hematology Fellowship, Memorial Sloan-Kettering Cancer Center, New York, NY

Andrew Vasey, MD
2009–10, Chief Resident, OVAMC
As of 7/1/10
Assistant Professor, Division of General Internal Medicine, UNMC

Keely Hack, MD
2009–10, Chief Resident, Ambulatory
As of 7/1/10
Oncology/Hematology Fellowship, UNMC

Joel D. Armitage, MD
Assistant Professor,
General Internal Medicine, UNMC

John P. Berger, MD
Hospitalist, Sioux City, IA
& Post Doc Research Fellow Pulm, UNMC

Colleen D. Christensen, MD
Hospitalist, Omaha, NE

Lauren P. Sweetser, MD
Assistant Professor,
General Internal Medicine, UNMC

Michael A. Furasek, MD
Hospitalist, Lincoln, NE

Marat Gadzhiev, MD
Infectious Disease Fellowship, Univ. of Colorado

Greg A. Golden, DO
Pulmonary/Critical Care Fellowship, UNMC

Matthew R. Haack, MD
Pulmonary/Critical Care Fellowship, UNMC

Douglas N. Hentzen, MD
Private Practice, Hastings, NE

Matthew D. Jahraus, MD
Hospitalist, Sioux Falls, SD

Ryan A. Martin, MD
Pulmonary/Critical Care Fellowship, UNMC

Benjamin J. Miriovsky, MD
Oncology/Hem Fellowship, Duke University

Christine A. Mitchell, MD
Assistant Professor,
General Internal Medicine, OVAMC

Chad A. Reade, MD
Chief Resident, UNMC, 2010–2011

Eric T. Rome, DO
Chief Resident, OVAMC, 2010–2011

Sabrina A. Seib, MD
Private Practice, West Virginia
Affiliation with the VA Nebraska-Western Iowa Health Care System (NWI HCS) allows the Department of Internal Medicine to pursue its tripartite mission of clinical care, research and education in a more comprehensive and successful manner.

NWI HCS provides integrated inpatient and outpatient care to veterans in Nebraska, western Iowa and portions of Kansas and Missouri. The Omaha Veterans Affairs Medical Center (OVAMC) is an acute care, highly-affiliated facility that operates approximately 100 inpatient beds and provides full-service medical care to thousands of veterans. Inpatient and outpatient health care is provided in this integrated system through a strong system of primary care supported by tertiary specialty activity in medicine, surgery, and psychiatry.

The OVAMC provides an irreplaceable venue for the Department’s teaching activities involving medical students, residents and fellows.

In addition, the VA has a major research service that provides infrastructure to support basic science, translational and clinical outcomes research. Many of the Department’s basic research programs are based in the VA Research and Development Service.

One major emphasis at the VA is on quality outcomes and patient safety. This expertise and activity strengthens the Department’s academic and educational activities.

The Department’s faculty members are totally integrated between the VA and The Nebraska Medical Center.

The Department of Internal Medicine’s major clinical and educational affiliation is with The Nebraska Medical Center (TNMC). With a history dating back to 1869, TNMC was formed with the merger of University Hospital and the Bishop Clarkson Memorial Hospital and their ambulatory care facilities in 1997. The integration of UNMC and TNMC has attracted patients from across the region and around the world. Currently, this academic healthcare facility has 624 acute-care inpatient beds and serves as the primary teaching hospital for more than 350 medical and surgical residents. The hospital is Nebraska’s largest healthcare facility with over 5,000 employees.

As a major tertiary healthcare center, TNMC cares for patients from all 50 states, the District of Columbia and 43 foreign countries. It is known internationally for its solid organ and bone marrow transplantation services and is recognized nationally and regionally for its oncology, neurology and cardiology programs. It currently holds the Joint Commission’s “gold seal of approval” for clinical programs in stroke management, heart failure and acute myocardial infarction. In addition, it is designated as a level-four facility by the National Association of Epilepsy Centers. Uniquely, TNMC operates a 10-bed biocontainment unit that is currently one of three existing units in the United States that is equipped to safely care for those exposed to highly-contagious, dangerous diseases.

Every year, TNMC provides care for over 140,000 patients, resulting in over 26,000 inpatient discharges, 475,000 outpatient visits and 60,000 emergency visits.
Gift from UNMC ‘Icon’ Provides Lasting Research Legacy

Fred Paustian, MD, isn’t one to brag. In fact, he’d prefer to avoid any “self-aggrandizement,” as he calls it.

His modesty belies his significant contributions to the UNMC Department of Internal Medicine—and the high regard in which his former students hold him.

His first major contribution was in 1958, when he established what is now the Division of Gastroenterology and Hepatology.

It was to be the beginning of Dr. Paustian’s four-plus decades as a physician and a long, revered career at UNMC.

Medicine was a choice the Nebraska native made shortly after World War II, when he ended up in the hospital as a patient and became interested in the lab work happening around him.

After graduating from medical school at the University of Nebraska, Dr. Paustian completed his internal medicine residency and gastroenterology fellowship at the Graduate Hospital of the University of Pennsylvania. There, he studied under world-renowned physician H.L. Bockus, MD.

He was wooed back to Nebraska when Robert Grissom, MD, then chair of the UNMC Department of Internal Medicine, asked him to start a division of gastroenterology. The event marked two milestones—a brand-new subspecialty in the Department, and the arrival of the first specialty-trained gastroenterologist in Nebraska.

The new Gastroenterology division would be the start of what Dr. Paustian would transform into one of UNMC’s leading centers of excellence. He recruited Mike Sorrell, MD, and Rowen Zetterman, MD, physicians who are now among the country’s leading experts on liver disease and key to the formation of the UNMC liver research unit and liver transplantation team.

Back in the 1950s, however, the entire Department was comprised of four physicians, a group focused on caring for patients and developing a medical school curriculum.

“The one thing missing in that activity was research,” Dr. Paustian said, an area of medical science he recognized the importance of then and now. As the number of faculty grew in the Department, so did the number of clinical research projects.

Dr. Paustian was active in developing a liaison between UNMC faculty and physicians in the community. He assumed leadership positions in the Omaha medical community and was involved in graduate medical education at the national level. He was designated a master in the American College of Physicians in 1993.

In 1994, the Frederick F. Paustian Lectureship in Gastroenterology was established in his honor as a tribute to his many accomplishments in the field of gastroenterology. This lectureship has been funded by many alumni, faculty and friends of the Division of Gastroenterology and Hepatology.

In 2006, Dr. Paustian and four other UNMC physicians were inducted as legends of the former University of Nebraska Hospital, now part of The Nebraska Medical Center.

His passion for cultivating research has endured, even after he formally retired in 1997—and actually retired about 10 years later.

It’s because of his commitment to the Department and Division that Dr. Paustian was moved to help the Department develop “a meaningful degree of research, not only with critical medicine but also with basic research.”

One step to that goal was to provide a gift that would directly impact the Division of Gastroenterology and Hepatology. Through the University of Nebraska Foundation, he endowed the Paustian Chair of Gastroenterology in 1997. The chair currently is held by Division Chief Mark Mailliard, MD.

“Dr. Paustian was one of my mentors when I was a medical student and later as a resident,” said Dr. Mailliard. “He was instrumental in my choosing gastroenterology as a subspecialty. He truly is an icon at UNMC.”

In 2008, Dr. Paustian made another major gift to the Department: the endowment of the Frederick F. Paustian, M.D., Gastroenterology Research Laboratories Fund.

The purpose of the fund is to develop and implement new knowledge in the field of gastroenterology and to increase the national reputation of UNMC in academic gastroenterology.

“Our research primarily is focused on liver disease and mechanisms of liver injury,” Dr. Mailliard said. “We plan to grow and diversify our research mission. Dr. Paustian’s recent gifts will help make this happen.”

It’s one more step in Dr. Paustian’s commitment to elevate the role of research in medical education.

“Without research, medical schools will be missing a very important aspect of education in developing new knowledge,” he said. “I hope my gift will have an impact on the future capability of the Division. I’m pleased that UNMC and the Department have given me the opportunity to develop our program.”
Drs. Grissom, Gust Leave Behind Legacies of Service

Two longtime leaders and physician-educators who served the Department of Internal Medicine will be remembered for their skills, compassion, dedication and the lasting impact they made on UNMC.

Robert Grissom, MD, served more than 50 years with UNMC and helped develop the internal medicine program. He died March 17, 2009, at age 92.

William Gust, MD, who became a fixture on radio and television communicating health and wellness news to the community often supplemented with interviews of fellow UNMC faculty, died October 1, 2009. He was 69.

Dr. Grissom was the first full-time chairman of the Department of Internal Medicine. A professor emeritus of the Division of Cardiology, he was one of four original full-time clinical faculty members at the medical center. His role in developing the academic internal medicine department is well-remembered and appreciated.

He was recruited to UNMC in 1953 from the University of Illinois, where he was assistant professor of internal medicine. He served as associate professor of internal medicine and vice chairman of the Department until 1956, when he became the department’s first full-time chairman. He joined the Cardiology division in 1970 until his retirement in 1987.

Dr. Grissom’s dedication to teaching and residents never waned. From 1987-2000, he volunteered in the training of medical students as part of their “Introduction to Clinical Experience” course. He was present at grand rounds and often sent handwritten notes of encouragement to residents. In 2008, he and his wife of 64 years, Virginia, established an endowment fund for internal medicine senior residents to recognize superior performance. A decorated veteran who was awarded two Bronze Stars, Dr. Grissom took a special interest in veterans’ health issues.

Dr. Gust retired in 2009 after 37 years on the faculty and staff of UNMC and the Omaha Veterans Affairs Medical Center where he served as associate chief of staff for education.

An assistant professor in the Department of Internal Medicine, he served as director of the UNMC Hypertension Clinic and played a key role in the medical center’s continuing education and distance education system.

Host of a weekly radio program for 20 years, and host of two monthly television programs, Dr. Gust informed the public of health issues and promoted UNMC and the Department of Internal Medicine in the process.

At 33, he was diagnosed with non-Hodgkin’s lymphoma. Although successfully treated, the radiation therapy caused complications later in his life.

Also a decorated veteran, Dr. Gust was awarded the Bronze Star, the Army Commendation Medal and the Combat Medics Badge. An advocate of student integration at every level, he was instrumental in the development of the UNMC affiliation with the Omaha Veterans Affairs Medical Center.

Make a Gift to the UNMC Department of Internal Medicine Through the University of Nebraska Foundation

For more than 70 years, the University of Nebraska Foundation, a nonprofit public charity, has been a primary fundraiser and manager of gifts to the community, including gifts to the UNMC Department of Internal Medicine.

The Foundation serves to help donors choose where their gifts go and how they will be used. One hundred percent of an expendable gift may be used immediately and entirely by the Department of Internal Medicine for the purposes designated by the donor. An endowed gift will be invested and the net annual income will be available to the Department for the purposes designated by the donor.

Donors may create their own fund at the Foundation or choose from many existing funds. Among the areas that can be designated for a gift are student scholarships, academic programs, faculty recruitment and retention or medical research.

For more information about giving to the UNMC Department of Internal Medicine, visit nufoundation.org or call Karen Levin, Director of Development for Internal Medicine, at 402-502-4921.
Faculty List & Key Interests

**Cardiology**

**John Windle, MD**  
Professor and Chief  
Medical Director,  
General Cardiovascular  
- cardiac electrophysiology  
- complex cardiac mapping  
- health informatics

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

**Ramin Artang, MD**  
Assistant Professor  
- cardiovascular imaging  
- general cardiology

**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**  
Associate Professor  
Medical Director, Heart Failure  
And Cardiac Transplant Program  
- cardiac transplant  
- congestive heart failure

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

**Christopher Erickson, MD**  
Courtesy Professor  
Professor of Pediatric Cardiology  
- cardiac electrophysiology  
- sudden death syndromes  
- genetics and arrhythmias

**Kiran Gangahar, MD**  
Assistant Professor  
- advanced cardiac imaging  
- prevention and outcomes  
- women’s health

**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, Omaha VA Medical Center  
- 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

**Samer Sayyed, MD**  
Assistant Professor  
- cardiac CT/MRI  
- cardiovascular imaging

**John Scherschel, MD**  
Assistant Professor  
- cardiac electrophysiology  
- cardiac mapping and ablation

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

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

**Monique Smith, MD**  
Assistant Professor  
- women’s heart issues  
- cardiac resynchronization

**Nattapong Sricharoen, MD**  
Assistant Professor  
- cardiovascular imaging  
- endothelial dysfunction in diabetes

**Diabetes, Endocrinology & Metabolism**

**Jennifer L. Larsen, MD**  
Louise and Morton Degen Professor and Chief  
Associate Vice Chancellor 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 actions of relaxin  
- regulation of expression of cell surface receptors  
- insulin degrading enzyme function

**Cyrus V. Desouza, MD**  
Associate Professor  
Associate Director, Fellowship Program  
Medical Director, Diabetes & Obesity Programs, Omaha VA Medical Center  
- cardiovascular disease in diabetes  
- endothelial dysfunction in diabetes  
- inflammation and insulin resistance

**Whitney S. Goldner, MD**  
Assistant Professor  
- thyroid nodules and thyroid cancer  
- vitamin D in disease states  
- environmental exposures and thyroid disease

**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
Gastroenterology & Hepatology

Mark Mailliard, MD
Professor, Frederick F. Paustian 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
■ alcoholic liver injury
■ hepatocyte proliferation and repair

John Gollan, MD, PhD
Stokes-Shackleford Professor
■ hepatology
■ liver transplantation

Dee Harrison-Findik, PhD
Assistant Professor
■ esophageal motility disorders
■ fellowship education

Alexander Hewlett, DO
Assistant Professor
■ alcoholic liver disease
■ bioprotection in hepatitis

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

Kusum Kharbanda, PhD
Associate Professor
■ alcoholic liver disease
■ hepatocyte apoptosis

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 graft rejection
■ clinical trials in hepatitis

Marco Olivera-Martinez, MD
Assistant Professor
■ liver transplantation
■ chronic viral hepatitis
■ novel pharmacologic therapies

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

Michael Sorrell, MD
Robert L. Grissom, MD, Professor
■ liver transplantation
■ autoimmune hepatitis

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

Gary Volentine, MD
Assistant Professor
■ general GI

Renee Young, MD
Associate Professor
■ inflammatory bowel disease

General Internal Medicine

Thomas Tape, MD
Professor and Chief
■ medical judgment and decision making
■ computer usability for physicians
■ American College of Physicians

Joel Armitage, MD
Assistant Professor
■ outpatient primary care
■ preventive medicine

Terri Batterman, MD
Assistant Professor
■ management of hospitalized patients
■ preventive medicine

Micah Beachy, DO
Assistant Professor
■ management of hospitalized patients

Shannon Boerner, MD
Assistant Professor
■ outpatient primary care
■ women’s health

Rachel Bonnema, MD, MS
Assistant Professor
Internal Medicine Residency Assistant Program Director
■ resident education
■ curriculum development for the national VA
■ women’s health

James Campbell, MD
Professor
Director, Information Technology
■ biomedical informatics
■ clinical decision support
■ electronic health records

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

Brent Crouse, MD
Assistant Professor
■ outpatient primary care
■ diabetes

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

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

Erik Ehlers, MD
Instructor
■ outpatient primary care

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

Julie Fedderson, MD
Assistant Professor
■ management of hospitalized patients
■ physician quality improvement

Mary Gallagher Jansen, MD
Assistant Professor
■ substance abuse and addiction
■ psychiatric illness in primary care
Michelle Johnson, MD  
Assistant Professor  
- outpatient primary care

Lydia Kang, MD  
Assistant Professor  
- palliative care  
- cultural competency  
- medical humanities

Katherine Kueny, PhD, LMFT  
Assistant Professor  
- behavioral medicine-resident education  
- geriatric depression/anxiety

John Mataole, 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

Christine Mitchell, MD  
Instructor  
- outpatient primary care

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

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

Jessica Novotny, MD  
Assistant Professor  
- outpatient primary care  
- hypertension and hyperlipidemia

Phyllis Nsiah-Kumi, MD, MPH  
Assistant Professor  
- health disparities  
- health literacy and diabetes education  
- childhood obesity/diabetes prevention in minority children

David O’Dell, MD  
LeeRay Meyer Professor  
Director of Medical Education, Internal Medicine Department  
- undergraduate medical education  
- procedural training

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

Jennifer Parker, MD  
Assistant Professor  
Internal Medicine-Pediatrics Residency Program Director  
- transitional care  
- adolescent and women’s health  
- resident education

Robert Schwab, MD  
Assistant Professor  
- resident education  
- medical home

Susan Schwerdtfeger, MD  
Assistant Professor  
- outpatient primary care  
- women’s health

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

Lauren Sweetser, MD  
Assistant Professor  
- management of hospitalized patients  
- outpatient primary care

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

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

Andrew Vasey, MD  
Assistant Professor  
- outpatient primary care  
- preventive medicine

Chad Vokoun, MD  
Assistant Professor  
Internal Medicine Residency Co-Associate Program Director  
- management of hospitalized patients  
- resident education  
- perioperative and consultative medicine

Mary Wampler, MD, MPH  
Adjunct Assistant Professor  
- occupational and environmental medicine

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

Renee Woehrner, MD  
Assistant Professor  
- resident and medical student teaching  
- outpatient primary care

Jane F. Potter, MD  
Neumann M. and Mildred E. Harris Professor of Geriatrics, and Chief Medical Director, Geriatric Clinic  
- geriatric cognitive disorders  
- community-based geriatric education  
- whole person wellness  
- geriatric interdisciplinary care  

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

Geriatrics & Gerontology

Infectious Diseases
Infections in immunocompromised hosts
fever and neutropenia

HIV neuropathogenesis
anti-retroviral drug development
innate immunity and viral control

HIV pathogenesis

health care associated infections

non-Hodgkin's lymphoma

leukemia

myelodysplastic syndrome

breast cancer

liver cancer

melanoma

transcriptional regulation of neoplasia
Sandeep Rajan, MD  
Assistant Professor  
- head and neck cancer  
- non-malignant hematology

Wojeeha Razaq, MD  
Assistant Professor  
- gastrointestinal malignancies  
- liver tumors

Elizabeth C. Reed, MD  
Professor  
Medical Director, Village Pointe Cancer Center  
- breast cancer

James Schwarz, MD  
Assistant Professor  
- genitourinary malignancies  
- gastrointestinal malignancies

Nicole Shonka, MD  
Assistant Professor  
- neuro-oncology  
- sarcoma

Jue Wang, MD  
Assistant Professor  
- genitourinary malignancies  
- cancers of unknown primary

Hesham Basma, PhD  
Instructor  
- iPSCs and stem cell differentiation

Sabin Bista, MBBS  
Assistant Professor  
- sleep disorders  
- effects of sleep deprivation and fatigue on bodily functions

David Gannon, MD  
Associate Professor  
Critical Care Medical Director  
- critical care medicine  
- quality improvement and performance improvement

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

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

Peter (Jim) Murphy, MD  
Associate Professor  
Medical Director, Respiratory Care Services  
- adults with cystic fibrosis  
- respiratory care services

Craig Piquette, MD  
Associate Professor  
Associate Chief of Medicine, Omaha VA Medical Center  
- Pulmonary, Critical Care Medicine  
- Fellowship Program Director  
- critical care medicine  
- medical school and fellowship curriculum

Jill Poole, MD  
Assistant Professor  
- organic dust and immune function  
- allergy and asthmatic diseases

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  
Assistant Professor  
Medical Director, Pulmonary Function Services  
- 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  
- agricultural lung disease and other forms of occupational lung disease  
- occupational health

Todd A. Wyatt, PhD  
Assistant Professor  
- cyclic nucleotide-dependent protein kinases  
- alcohol and cigarette smoke in lung 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  
Assistant Professor  
Medical Director, Pulmonary Function Services  
- 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  
- agricultural lung disease and other forms of occupational lung disease  
- occupational health

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

Rheumatology & Immunology

James O’Dell, MD  
Larson Professor and Chief  
Internal Medicine Residency Program Director  
- rheumatoid arthritis clinical trials  
- predicting therapeutic response

Amy Cannella, MD  
Assistant Professor  
Rheumatology Fellowship Program Director  
- medical education  
- musculoskeletal ultrasound

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

Michele Hearth-Holmes, MD  
Adjunct Assistant Professor  
- medical education  
- lupus

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

Kaleb Michaud, PhD  
Assistant Professor  
- pharmacoeconomics  
- 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

Courtney Schaffert, PhD  
Instructor  
- cell signaling in inflammatory diseases  
- protein isolation and identification in autoimmune disease

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

Pulmonary, Critical Care, Sleep & Allergy

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

Diane Allen-Gipson, PhD  
Assistant Professor  
- adenosine receptor signal transduction pathway  
- airway wound healing

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

Teri Barkoukis, MD  
Associate Professor  
Sleep Fellowship Program Director  
- sleep curriculum development  
- sleep disorders
Honors & Awards

Faculty National Honors, Awards & Leadership

James Campbell, MD
Professor, Division of General Internal Medicine
Recipient, Award for Excellence, International Health Terminology Standards Development Organization

Whitney Goldner, MD
Assistant Professor, Division of Diabetes, Endocrinology & Metabolism
Member, Nebraska State Board of Medical Nutrition Therapy

Denham Harman, MD
Emeritus Millard Professor of Medicine
Fellow, American Association for the Advancement of Science

Lynell Klassen, MD
Henry J. Lenhoff Professor & Chair, Department of Internal Medicine
Member, National Advisory Council, NIH, National Institute on Alcohol Abuse & Alcoholism

Jennifer Larsen, MD
Louise & Morton Degen Professor and Chief, Division of Diabetes, Endocrinology & Metabolism
Counselor, Executive Council of the Endocrine Society

Ted Mikuls, MD, MSPH
Associate Professor, Division of Rheumatology/Immunology
Member, FDA Arthritis Advisory Committee

James O’Dell, MD
Larson Professorship, Professor & Chief, Division of Rheumatology/Immunology
Secretary, American College of Rheumatology
Chair, American College of Rheumatology Task Force on National Rheumatology Registry

Jill Poole, MD
Assistant Professor, Division of Pulmonary, Critical Care, Sleep & Allergy Medicine
Member, American Academy of Allergy, Asthma & Immunology Interest Section

Jane Potter, MD
Neumann M. & Mildred E. Harris Professor of Geriatrics and Chief
President, National Association of Geriatric Education, 2009

Mark Rupp, MD
Professor, Division of Infectious Diseases
President, Society for Healthcare Epidemiology of America (SHEA)

Hendrik Viljoen, PhD
Professor, Division of Infectious Diseases
Recipient, Centennial Research Medal, University of Pretoria, South Africa

Julie Vose, MD
Neumann M. & Mildred E. Harris Professor & Chief, Division of Oncology/Hematology
Member, Board of Directors of the American Society of Clinical Oncology
Member, Lymphoma Research Foundation’s Scientific Advisory Board

Editorship or Editorial Boards

Tricia LeVan, PhD
Assistant Professor, Division of Pulmonary, Critical Care, Sleep & Allergy Medicine
Member, Editorial Board of the American Journal of Respiratory Cell & Molecular Biology

Study Sections or Federal/State Advisory Boards

Diane Allen Gipson, PhD
Assistant Professor, Division of Pulmonary, Critical Care, Sleep & Allergy Medicine
Member, American Heart Association Grant Review Committee

Jean Grem, MD
Professor, Division of Oncology/Hematology
Member, FDA Oncologic Drug Advisory Committee

Susan Swindells, MBBS
Professor & Terry K. Watanabe Chair, Division of Infectious Diseases
Member, NIH, National Institute of Allergy & Infectious Diseases Research Advisory Committee

Regional Awards & Recognition

Catherine Eberle, MD
Associate Professor, Division of Geriatrics & Gerontology
Recipient, Shining Star Award, Nebraska Hospice & Palliative Care Partnership (NHPCP)

Gail Etherton, MD, MSPH
Assistant Professor, Division of General Internal Medicine
Recipient, Robert A. Petzel, MD; Network Director’s Commendation for VA VISN 23

Diane Allen Gipson, PhD
Assistant Professor, Division of Pulmonary, Critical Care, Sleep & Allergy Medicine
Member, American Heart Association Grant Review Committee

Jean Grem, MD
Professor, Division of Oncology/Hematology
Member, FDA Oncologic Drug Advisory Committee

Susan Swindells, MBBS
Professor & Terry K. Watanabe Chair, Division of Infectious Diseases
Member, NIH, National Institute of Allergy & Infectious Diseases Research Advisory Committee
Congratulations Class of 2009

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