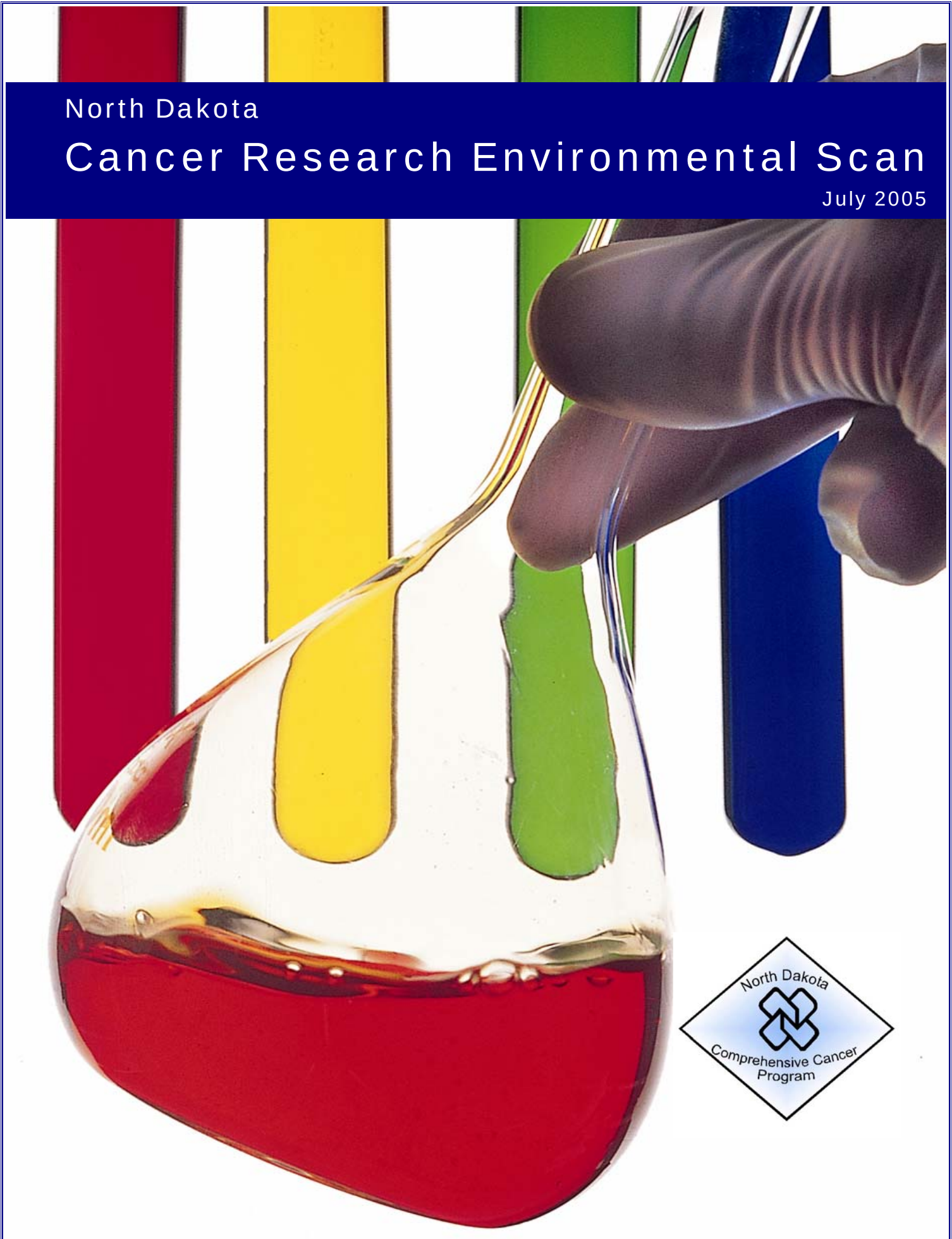
North Dakota

Cancer Research Environmental Scan

July 2005



North Dakota Comprehensive Cancer Program

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Executive Summary

The following document is an environmental scan of the current research in the field of cancer occurring in the state of North Dakota. The focuses of research that have been selected are objective third-party funded research, and administered oncology clinical trials. Documentation of funded research is dated from 2000 to present, while the clinical trial recordings dates from 2004 to present.

The purpose of this compilation of research is to benchmark the current research that is taking place for the following purposes:

- Establish data for comparisons to future years and other states.
- Provide guidance and knowledge to assist in stating goals, objectives, and comparisons in the writing of the State Cancer Plan 2006-2010.
- Create awareness to all interested parties of the research conducted in the field of cancer.

Compilations of the data shows that significant funded research is taking place in North Dakota. The majority of the research is being executed in the higher education research institutions.

Clinical trials are being administered in six hospitals and work in conjunction with each other and the cancer research facilities and centers. The number of trials administered at any given time in the surveyed facilities ranges from five to over one hundred per organization.

Abstracts by Private Investigator

Research Abstract Summary Table

Institution	Principal Investigator	Cancer Relation	Project Title	Award Amount:	Funding Source	Timeframe:
NDSU	Chatterjee, Satadal	Not Specific	Role of GRP78 in Alkylating Agent Sensitivity	$444,691	NCI	1995-2006
NDSU	Greenwald, Beverly	Nursing	Promoting Community Awareness of the Need for Colorectal Cancer Prevention and Screening	$20,000	NDSU Dvlp. Found.	2004
NDSU	Guo, Bin		Bcl-G in Apoptosis of Cancer Cells	$10,000	Fraternal Order of Eagles	2004
NDSU	Guo, Bin	Breast	A Novel Membrane-Permeable, Breast-Targeting, Pro-Apoptotic Peptide for Treatment of Breast Cancer	$105,750	DOD/USAMRMC	2004
NDSU	Hinderliter, Anne K.	Prostate	Annexins and Membrane Organization	$196,870/ yr.	NIGMS	2005-2008
MeritCare	Kobrinsky,. Nathan	All	Chindren's Oncology Group	$25,000/yr.	NCI	
NDSU	Mallik, Sanku	Breast	Development of Chemical Receptors for Proteins	$198,585 (2002) $199,200 (2003) $205,350 (2004)	NIGMS	2002-2006
NDSU	McCaul, Kevin	Breast	Cancer Worry and Health-Protective Behaviors	$475,807 (5 yrs)	NCI/NIH/DHHS	2002-2007
NDSU	McCaul, Kevin	Lung	Thought, Affect, and Motivation to Quit Smoking	$126,900/yr (2 yrs)	NCI	2004-2006
NDSU	McCourt, Mark, E.	All	Visual Neuroscience Center	$8.9 million	NIH	2004-2009
UND	McDonald, Russ		National Resource Center on Native American Aging	$345,000/ yr	US Administration on Aging Department	2004-2006
UND	Dedra Buchwald— Subcontractor: Muus, Kyle/ McDonald, Russ	Lung, Breast, Colorectal, Prostrate	Cancer Incidence Rates of American Indians in North Dakota	$80,000/year-4 yr	Fred Hutchinson CRC	2006-2011
NDSU	Park, Chung S		Dietary Use of Canola Seeds for production of an Anticancer Agent in Milk	$13,609/yr.	Northern Canola Growers Assn.	2003
NDSU	Park, Chung S	Breast	Lipotrope Stimulates Breast Cancer Cell Death	$135,650/ yr.	DHHS/NIH/NCI	2004-2005
NDSU	Sehgal, Inder	Prostate	Improving Treatments for Prostrate Cancer Metastasis	$5000	Fraternal Order of Eagles	2002
UND	Sens, Donald	Renal	Metallothionein Isoform3 and Renal Cadmium Toxicity	$200,000/yr.	NCI	2002-2006
UND	Sens, Donald	Bladder	Metallothionein, Environment Insult and Bladder Cancer	$188,000/yr.	NCI	2002-2006
UND	Sens, Mary	Breast	Cadmium, Metallothionein and Breast Cancer Progression	$197,500/yr + 39.6%	NCI	2005-2009
NDSU	Singh, Jagdish		Field Induced Pores Formation During Iontophoresis	$70,500/yr.	DHHS/NIH/NICHD	2002-2003
MeritCare	Steen, Preston D.	All	MeritCare Hospital Community Clinical Oncology Program	$526,000 (2005)	NCI	1983-2009
Orion Integrated Biosciences	Valdivia-Granda, Willy A	Genomics of Cancer	5th Virtual Conference on Genomics and Bioinformatics (VCGB-V)		NIEHS	2005-2006
NDSU	NDSU	All	Center for Protease Research	$8.25 million	NIH	2001-2006

Role of GRP78 in Alkylating Agent Sensitivity

Principal Investigator:	**Chatterjee, Satadal**
Institution:	**North Dakota State University**
City	**Fargo**
Funding Source:	**National Cancer Institute**
NCI Division:	**Division of Cancer Treatment and Diagnosis**
Project ID:	**R01, CA065920**
Project Funding Amount:	**$444,691 (total from separate awards-2004)**
Project Funding Period:	**1/01/95 to 1/31/06**

DESCRIPTION: (provided by applicant) The continuing studies employing different means to induce glucose regulated stress protein GRP78, such as treating cells with 2-deoxyglucose or 6-aminonicotinamide, clearly demonstrate that induction of GRP78 in V79 Chinese hamster cells is associated with potentiation of cytotoxicity inflicted by BCNU, cisplatin or melphalan as determined by clonogenic survival assays. Enhanced sensitivity to these platinating/alkylating agents, observed following GRP78 induction, is associated with an impairment of DNA cross-link repair. Further, this increase in sensitivity associated with up-regulation of GRP78 is also observed in three different human colon cancer cell lines, each bearing genetic defects, such as mutated p53, defective mismatch repair, or deficiency in O6-alkylguanine-DNA-alkyltransferase (AGT). Thus, it appears that the approach of overexpression/upregulation of GRP78, a strong Ca2+-binding protein may be useful in potentiation of cytotoxicity induced by alkylating/platinating agents. The proposal involves an investigation to determine the mechanisms of association of GRP78 induction with alkylating/platinating in various human cancer cell lines by examining the following specific questions: 1) Is the association true for human cancer cell lines originated from various tissues?; 2) What are the consequences of GRP78 induction on alkylating agent-induced apoptosis?; 3) Does GRP78-dependent increased sensitivity stem from impairment in removal of DNA adducts or DNA cross-link repair?; 4) Does GRP78 directly participate in DNA repair? and; 5) Is induced GRP78 itself the cause of increased sensitivity or is it the result of activation, or do pathways that lead to GRP78 induction and augmented sensitivity (e.g., alteration in Ca2+ homeostasis) overlap? The study is expected to provide an increased understanding of the mechanisms of GRP78 modulation of molecular and cellular responses to cancer chemotherapeutic agents that will allow strategies for transferring benchside results to the bedside.

Type of Cancer Research Codes:

- Systemic Therapies - Discovery and Development

Type of Cancer Codes:

- Not Site-Specific Cancer

Promoting Community Awareness of the Need for Colorectal Cancer prevention and Screening

Principal Investigator:	**Greenwald, Beverly**
Institution:	**North Dakota State University**
City:	**Fargo**
Funding Source:	**NDSU Development Foundation**
Project Funding Amount:	**$20,000**
Project Funding Period:	**6/3/2004**

DESCRIPTION: (provided by applicant):The purpose of this pilot study was to determine if a community education program based on the Health Belief Model effectively promotes awareness of the need for colorectal cancer prevention and screening. An education program was given to 20 employees of an accounting firm in a mid-western city. A survey evaluated the participants' beliefs about CRC, before and after the presentation. The results support a significant increase in the belief that CRC is preventable, and in five of six screening factors from the Health Belief Model. Participants were encouraged to share what they learned, and reported they anticipate sharing with at least 31 others. A screening questionnaire was distributed as a "cue to action" to discuss CRC screening with their physicians. Participants' intention to discuss CRC with their physicians also increased. The actual effectiveness will be evaluated with 11 participants who volunteered for a one-year follow-up study. This community education concept had several advantages, including simultaneous access to many participants who share personal testimonials and who invite peers to become screened. The program was effective in increasing awareness of the need for CRC prevention and screening, even beyond those in attendance. The results of the one-year follow-up study may provide more insight to what education factors promote screening most effectively.

BcI-G in Apoptosis of Cancer Cells

Principal Investigator:	**Guo, Bin**
Institution:	**North Dakota State University**
City:	**Fargo**
Funding Source:	**Fraternal Order of Eagles**
Project Award Amount	**$10,000 (2 awards at $5000)**
Project Funding Period:	**8/12/2004 and10/19/2004**

DESCRIPTION: (provided by applicant) Cytogenetic deletions on chromosome 12p12.3 are common, recurring alterations found in prostate cancer patients, with loss of heterozygosity (LOH) at this region identified in 47% of patients who died of prostate carcinoma. LOH in the same region in a variety of other solid tumors suggests the presence of a tumor suppressor gene. Fluorescence in situ hybridization (FISH) analysis further refined the commonly deleted segment to 600 kb between ETV6 and D12S358. This 600 kb region encodes a total of seven putative genes. One recently discovered gene in this region is Bcl-G, a novel pro-apoptotic member of the Bcl-2 family proteins. This principle investigator (PI) has cloned the Bcl-G gene and performed initial characterization of its function in apoptosis regulation. Bcl-G induces apoptosis when over-expressed in prostate cancer PC-3 cells. We hypothesize that the pro-apoptotic function of Bcl-G may be responsible for its potential tumor suppressing activity in prostate cancer. Bcl-G may act as a key regulatory protein responsible for apoptosis induction in prostate cancer cells and loss of Bcl-G function will render prostate cancer cells resistant to apoptotic signals. Consequently, the specific aims for this proposal are: 1) To determine the function of Bcl-G in apoptosis of prostate cancer cells. The function of Bcl-G will be investigated by establishing and studying prostate cancer cell lines stably expressing Bcl-G and Bcl-G targeting siRNA, respectively; 2) To investigate how prostate cancer cells abrogate the pro-apoptotic function of Bcl-G. Mutations of the Bcl-G gene in prostate cancer patient samples will be examined by SSCP analysis. The Bcl-G inactivating mechanism will be examined by studying Bcl-G interacting proteins and the post-translational modifications of Bcl-G. The works proposed in this research application aim to clarify the role of Bcl-G in apoptosis and chemoresponse in prostate cancer and to further understand the molecular mechanism of Bcl-G's pro-apoptotic function.

A Novel Membrane-Permeable, Breast-Targeting, Pro-Apoptotic Peptide for Treatment of Breast Cancer

Principal Investigator:	**Guo, Bin**
Institution:	**North Dakota State University**
City:	**Fargo**
Funding Source:	**Department of Defense**
Project Award Amount	**$105,750.00**
Project Funding Period:	**8/16/2004**

DESCRIPTION: (provided by applicant) The Bcl-2 family proteins are key regulators of apoptosis. Bid, a proapoptotic member of the Bcl-2 family, induces apoptosis through its Bcl-2 homology 3 (BH3) domain. The Bid BH3 peptide is able to induce apoptosis in cancer cells when it is linked to a membrane-permeable peptide. In an unrelated discovery, a breast-homing peptide, CPGPEGAGC, is shown to specifically target breast tissue. This project aims to design and test a novel therapeutic peptide based on the combination of the knowledge from these two fields.

Objective: The proposed project is going to create a novel peptide with three properties: membrane permeable, breast targeting, and inducing apoptosis. The peptide is expected to be able to induce apoptosis specifically in breast cancer cells and will be tested as a single therapeutic agent as well as in combination with chemotherapeutic drugs to treat breast cancer.

Supporting Rationale: (1) To create a breast-targeting, membrane permeable, proapoptotic peptide. The BH3 peptide of Bid (EDIIRNIARH-LAQVGDSMDR) will be synthesized with eight d-arginine residues at the N-terminus with a glycine linker residue, followed by a breast-homing sequence (CPGPEGAGC) at the C-terminal. (2) To test the therapeutic efficacy of the peptide in treatment of breast cancer. The peptide will be tested for apoptosis induction first in vitro in cultured breast cancer cells, and then in vivo in mice carrying mammary gland tumors. The combination therapy of the novel peptide and anticancer drugs will also be tested in cell lines and in mice bearing primary breast tumor.

Annexins and Membrane Organization

Principal Investigator: **Hinderliter, Anne K.**
Institution: **North Dakota State University**
City: **Fargo**
Funding Source: **National Institute of General Medical Sciences**
Project Funding Amount:
Project Funding Period: **3/1/2002-3/31/2008**

DESCRIPTION: (provided by applicant): Propagation of a signal transaction event usually involves protein-protein interactions, (e.g., protein phosphorylation and substrate-enzyme reactions). Such events are highly enhanced in magnitude and specificity if the proteins involved are associated with and concentrated in the same membrane domain, rather than distributed over a large number of disconnected domains (Thompson et al., 1995). We believe that membrane lipid domains can impart a magnifying or quenching effect on membrane-associated cascading reactions. For this contention to be valid, regulation of domains is necessary to prevent random modulation of a cascade reaction by the mere presence of domains. Fluid lipid domains are dynamic structures (in model membrane systems) whose differences in interaction energies between different lipid species are quite small, on the order of hundreds of calories per mole (Sugar et al., 1994,1999, Jerala et al., 1996). The large number of lipids present in membranes magnifies such lipid-lipid interactions, leading to domain formation. In contrast, protein-lipid interactions are usually on the order of kcal/mol of protein and vary with lipid composition. Differential protein-lipid interactions that vary with lipid composition may then enhance formation or disintegration of domains. Annexins are an abundant family of membrane-associated proteins with diverse distribution in organisms, which bind anionic phospholipids and Ca2+ and do not have any apparent enzymatic function. Recent findings implicate a role for annexins in prostate cancer (Xin et al., 2003; Kang et al., 2002; Srivastava et al., 2001; Chetcuti et al., 2001), pathogenic infections (Zobiack et al., 2002) and blood coagulation diseases ("the annexinopathies") such as antiphospholipid syndrome (Rand 1999, 2000). The present grant proposal is based on a fundamental concept; that annexins have a general organizational function on cell membranes. The manner in which this function is achieved is through binding and consequent stabilization of lipid domains.

MeritCare Children's Oncology Group

Principal Investigator:	**Kobrinski, Nathan**
Institution:	**MeritCare**
City:	**Fargo**
Funding Source:	**NIH**
Project Funding Amount:	**$25,000**
Project Funding Period:	**3/1/2005-2/28/2006**

DESCRIPTION: (provided by MeritCare) Children's Oncology Group (COG) is a group of over 200 institutions throughout North America committed to treating children with cancer, ultimately improving cure rates for children and their quality of life during and following treatment. Dr. Nathan Kobrinsky serves as the Principal Investigator at MeritCare Roger Maris Cancer Center. A total of 32 children either enrolled in pediatric clinical trial or were registered for tracking of pediatric cancers in 2004.

Development of Chemical Receptors for Proteins

Principal Investigator:	**Mallik, Sanku**
Institution:	**North Dakota State University**
City:	**Fargo**
Funding Source:	**National Institute of General Medical Sciences**
Project Funding Amount:	**$198,585/ $199,200/ $205,350 (as of 2005)**
Project Funding Period:	**6/1/2002-5/31/2006**

DESCRIPTION: (provided by applicant) This proposal aims to fabricate highly selective, robust, chemical receptors for the proteins employing polymerizable mixed liposomes. Carbonic anhydrase will be used for the initial optimization studies; after the optimization studies are complete, focus will be shifted to a bio-medically relevant protein, MMP-13. Matrix metallo-proteinases (MMPs) are a class of zinc-containing endo-peptidases capable of degrading extra-cellular matrix. Over-expressions of a variety of these enzymes have been implicated in tumor invasion and metastasis. Out of this family, Collagenase-3 (MMP-13) is capable of degrading type II collagen at neutral pH. It has been found to be over-expressed in fibroblastic cells surrounding breast carcinoma. MMPs are ubiquitous and are required for normal body functions. Since over-expression of a particular class of these enzymes is associated with diseases, selective targeting to one class of these enzymes is of paramount importance in treating the disease without disrupting other body functions. The specific goals are summarized below. Synthesis of new polymerizable zwitter-ionic, cationic and hydrogen bond forming lipids; synthesis of new polymerizable lipids capable of complexing either a transition metal ion (e.g., Cu2+, Zn2+ etc.) or a luminescent lanthanide metal ion (e.g., Tb3+ or Eu3+) with high affinity (K greater than 10'5 M-1). Fabrication of stable, chemical receptors for proteins by creating a three-dimensional pattern of metal-ions, ion-pairs and hydrogen bonding sites on liposomes, complimentary to the pattern exhibited by the MMP-13. In order to achieve this objective, mixed polymerizable liposomes will be prepared with ionic lipids, metal-chelating lipids and lipids with primary amine moiety on their headgroups. Polymerizable diacyl phosphocholine (zwitter ionic) will be used as the major constituent of these liposomes. After fabrication, these liposomes (in the unpolymerized state, above the gel-transition temperature) will be allowed to interact with the protein. The metal ions on liposome surface will orient complementary to the pattern of surface-exposed histidines of MMP-13. Quaternary ammonium headgroups on the liposomes will be positioned by acidic amino acid residues (Asp, Glu) on the protein surface. Amino acid side chains of the protein capable of forming hydrogen bonds (e.g., Ser, Thr, Lys, Asn, Gln and Arg) will interact with the primary amine moieties on the liposome. The result of this equilibration step is the creation of a pattern of metal ions, charges and hydrogen bonding sites on the liposome complementary to the surface pattern exhibited by the template protein. The pattern on the liposome will then be locked by photo-polymerization. The polymerized liposomes will "recognize" MMP-13 by an array of simultaneous and complementary interactions in three dimensions; thus the binding will be strong and selective. Measurement of binding affinity and selectivity by luminescence spectroscopy and micro-calorimetry; structural characterization studies by EPR spectroscopy, transmission microscopy (TEM) and atomic force microscopy (AFM). Testing of the synthetic receptors for possible applications in detection of metastatic cancer, imaging and delivery of anti- cancer drugs.

Cancer Worry and Health-Protective Behaviors

Principal Investigator: **McCaul, Kevin D**
Institution: **North Dakota State University**
City: **Fargo**
Funding Source: **NCI**
NCI Division: **Office of the Deputy Director for Extramural Science**
Project Funding Amount: **$475,807 for 5 years**
Project Funding Period: **9/27/02 to 7/31/07**

DESCRIPTION: (provided by applicant): Cancer is a disease feared by nearly everyone--young and old, people who have no direct experience with the disease but believe that they are at risk, and survivors concerned about a recurrence. Most behavioral research surrounding cancer has focused on non-affective factors such as perceived risk, but researchers are beginning to recognize that the way people feel--their affective reactions to cancer--plays an important role in what they do about the disease. This grant proposal deals with relationships between cognition (e.g., perceived risk), affect (e.g., worry; distress) and health-protective behaviors (e.g,, screening; smoking cessation). The overall purpose of this research is to test the feasibility and value of brief telephone therapy. We are testing the value of this approach for reducing distress and improving the quality of life for women diagnosed with Stages I-III breast cancer. I propose a five-year senior investigator award so that I may continue to develop the study of affect and self-protective behavior in the cancer arena. The award will release me from most of my teaching and service responsibilities. I plan to continue ongoing work studying coping among women diagnosed with breast cancer. In addition, I will seek new funding to address important basic and applied research questions such as: (a) how does worry affect self-protective behaviors (e.g., cancer screening) and how does worry as a construct differ from other affective responses to cancer (e.g., anxiety; depression; "cancer concern")? (b) how do thoughts and feelings about recurrence affect self-protective actions among cancer survivors?, how does advertising (i.e., cigarette labeling) influence thoughts and feelings toward smoking among adolescents, and (d) can we create worry and thereby influence persons who need to take self-protective action (e.g., smokers)? In addition to addressing new and important research questions, the senior investigator award will provide additional time for mentoring activities. The investigator will serve in that capacity for clinical M.S. students with interests in health psychology and Ph.D. students in a health/social experimental psychology program at North Dakota State University in Health Psychology. Overall, this grant would enhance the investigator’s ability to conduct novel research in cancer prevention and control and to shepherd students through the process of becoming productive researchers in psychosocial aspects of cancer.

Type of Cancer Research Codes:
- Behavior
- Patient Care and Survivorship Issues

Type of Cancer Codes:
- Breast Cancer

Thought, Affect, and Motivation to Quit Smoking

Principal Investigator: **McCaul, Kevin D**
Institution: **North Dakota State University**
City: **Fargo**
Funding Source: **NCI**
NCI Division: **Division of Cancer Control and Population Sciences**
Project Funding Amount: **$126,900 per year (2 years)**

Project Funding Period: **8/01/04 to 7/31/06**

DESCRIPTION: (provided by applicant): Most research on cigarette smoking cessation has addressed ways to improve the chances that smokers trying to quit will be successful. Researchers have paid much less attention to motivating cessation attempts among smokers less interested in quitting. Available evidence suggests that the strongest motivator of quit attempts is "concern" about one's health. However, very little is known about the nature of such concerns, including whether they must be accompanied by negative affect in order to motivate interest in cessation. To address this gap in our knowledge, we propose two different studies. Both experiments will include college students and community residents who are daily cigarette smokers. In Study 1, 45 students and 45 community residents will carry PalmPilots TM for two weeks of daily recording. An additional 30 smokers will complete end-of-week recordings to provide for an assessment of reactive effects of the daily monitoring activities. We wilt use event-contingent (tied to smoking a cigarette), signal-contingent (random intervals during the day), and interval-contingent (end of day) self-recording to elicit smokers' thoughts about smoking and worry. This study will be one of the first to assess the frequency with which these kinds of thoughts and feelings occur during the daily lives of smokers. In a second study, 60 college student smokers and 60 community residents will be signaled multiple times per day, on a random schedule, for two weeks. When signaled, they will turn on a PalmPilot TM that carries one of two sets of instructions: a) to remember a message about the negative (e.g., immediate health, social, and long-term health) consequences of smoking, or b) to remember a message about hassles associated with day-to-day life. We expect that the smoking consequences reminders may have little effect on beliefs about smoking, including risk perceptions. However, we predict that the reminders of smoking consequences will increase worry about smoking and motivation to quit. Together, these studies will inform us about how worry relates to the experience of smoking cigarettes and beliefs and feelings about quitting. The data will have implications for constructing risk messages and for how health professionals might encourage quit attempts among the millions of Americans who continue to smoke.

Type of Cancer Research Codes:
- Behavior

Type of Cancer Codes:
- Lung Cancer
- Respiratory System
-

Center for Visual Neuroscience

Principal Investigator: **McCourt, Mark, E**

Institution: **North Dakota State University**
City: **Fargo**
Funding Source: **NIH**
Project Funding Amount: **$8.9 Million**
Project Funding Period: **2004-2009**

DESCRIPTON: (provided by applicant): This proposal is to establish a Center for Biomedical Research Excellence (COBRE) at North Dakota State University on the topic of VISUAL NEUROSCIENCE, which specifically advances the mission of the Strabismus, Amblyopia and Visual Processing program of the National Eye Institute. The proposed Center will consist of four thematically interrelated projects, each directed by a junior investigator, assisted by onsite and off-site senior scientist mentors, which examine various aspects of the neural mechanisms and functional significance of visual perception, visual cognition and action. These four projects, together with proposed core research laboratories, new faculty recruitments, and administrative core facilities, will be instrumental in our attaining the long-range objective: To develop a diversely talented, yet focused, interactive and collaborative research group of critical mass devoted to analyzing visual performance in normal and dysfunctional states, to develop clinically useful diagnostic tests for assessing visual performance, to understand the neural mechanisms that control eye movements under natural environmental conditions, to understand how the brain processes visual information, how neural activity is related to visual perception, and how visual processing interacts with other brain systems which underlie cognition and action. The Specific Aims of this COBRE application are: 1) To develop successful, independent, self-sustaining research projects for the COBRE Project Directors to enable future success in obtaining R01 funding; 2) To enhance the biobehavioral research infrastructure at NDSU through the development of multi-user core laboratory facilities; 3) To expand NDSU's research capability in visual neuroscience by recruiting two additional faculty members with research expertise in key areas; 4) To establish a nationally recognized and acclaimed Center for Visual Neuroscience at North Dakota State University. The realization of these Specific Aims will establish a center of research excellence at NDSU that will attract quality faculty, postdoctoral fellows and graduate students interested in research in the visual sciences. The resulting Center will be competitive for Institutional Training Grants (T32), Research Project Grants (R01), Core Grants (P30) and Infrastructure Development Grants (R24) that will sustain the Center beyond the initial five years of support.

National Resource Center on Native American Aging

Principal Investigator: **McDonald, Russ**
Institution: **University of North Dakota**

City: **Grand Forks**
Funding Source: **US Administration on Aging Department**
Project Funding Amount: **$345,000 per year-3 years**
Project Funding Period: **2004-2006**

DESCRIPTION: (source: http://www.med.und.nodak.edu/depts/rural/nrcnaa/overview/) Native American elders often share needs that are taken for granted by other elder populations. Services to address these needs remain unavailable, underdeveloped or inaccessible. The elderly native people comprise a rapidly growing population in the United States. Dramatic changes in the health care system need to occur in order to empower, enhance and preserve the vital resources embraced by the Native American elders.

Empowerment of Native American leaders and service providers is crucial to the elder's health and well-being. The ability to provide high-quality services while maintaining the individual's cultural values, stands to enhance the elder's self-perception, worth and dignity.

The National Resource Center on Native American Aging was established in 1994 at the University of North Dakota (UND) in Grand Forks. The resource center is a collaboration between the UND Office of American Indian Student Services (formerly the Office of Native American Programs) and the UND Center for Rural Health. With one of the nation's largest enrollments of Native American students, the University of North Dakota has a long-standing tradition of service to Native Americans. Governed by a culturally sensitive staff and national steering committee, the resource center continues this tradition of leadership and service to Native Americans and their communities.

As a result of a Cooperative Agreement with the Administration on Aging, United States Department of Health and Human Services, the resource center's purpose is to work closely with the local service providers throughout the nation to address the needs of American Indian, Alaskan Native and Native Hawaiian elders.

Cancer Incidence Rates of American Indians in North Dakota

Subcontractors: **Muus, Kyle/ McDonald, Russ**
Principal Investigator: **Dedra Buchwald**
Institution: **University of North Dakota**

City:	**Grand Forks**
Funding Source:	**Fred Hutchinson Cancer Research Center (Seattle, WA.)**
Project Funding Amount	**$80,000 per year for 4 years**
Project Funding Period:	**07/01/2006-07/01/2011**

DESCRIPTION: (provided by applicant) In 2000, there were 4.1 million American Indian and Alaska Natives (AIANs) in the United States, representing a 110% increase from 1990 (Ogunwole, 2000). The AIAN population is expected to grow in the future by approximately 1.8% per year. While cancer incidence is decreasing among Whites, it is increasing among AIAN populations (Indian Health Service, 2000). Cancer is the second-leading cause of death among AIANs (CDC, 1999). Also, AIANs have the poorest 5-year cancer survival rate among US ethnic minorities. In North Dakota, there are 35,228 persons that indicated their racial classification as AIAN, comprising approximately 5.5% of the state's total population of 642,200 (US Census, 2000). Currently, little or no information is known about cancer incidence and mortality among AIAN populations in North Dakota.

Research Questions

- What is the overall cancer incidence rate (age adjusted) for American Indians in North Dakota? How do they compare to the rate for Caucasians in North Dakota?
- What are the incidences rates (age adjusted) for lung, colorectal, breast, and prostrate cancer for American Indians in North Dakota? How do they compare to the rates for Caucasians in North Dakota?
- What are the age-specific incidence rates of cancer for American Indians in North Dakota? How do they compare to the rates for Caucasians in North Dakota?
- What percent of American Indians with cancer in North Dakota are diagnosed at late stage, by cancer type? How do these figures compare to the percentages for Caucasians in North Dakota?

Analysis Plan

This study will utilize data from the North Dakota Cancer Registry, which contains demographic and health care information on North Dakota residents with cancer for years 1997-2003. On July 1, 1996, administrative rules were adopted for mandatory reporting of all invasive and in situ carcinomas (except basal and squamous cell skin carcinomas or in situ carcinoma of the cervix uteri) and tumors of the central nervous system. All medical diagnostic laboratories, physicians, and other health care providers in North Dakota who administer screening, diagnostic or therapeutic services are required to provide cancer data to the Registry. Also, all North Dakota hospitals and other health care facilities that provide inpatient, outpatient, screening, diagnostic, or therapeutic services are required to report cancer data to the Registry (North Dakota Century Code, 2001).

Center for Protease Research

Principal Investigator:	**North Dakota State University**
Institution:	**North Dakota State University**
City:	**Fargo**
Funding Source:	**NIH**
Project Funding Amount:	**$8.25 Million**
Project Funding Period:	**2001-2006**

DESCRIPTION: (http://www.ndsu.nodak.edu/cobre/) In February 2001, North Dakota State University was awarded a five-year $8.25 million research grant from the National Institutes of Health (NIH) - National Center for Research Resources (NCRR) to establish a Center for Biomedical Research Excellence. CPR is a multidisciplinary research center whose aim is to help combat diseases including arthritis, diabetes and cancer. Research is focused on a class of enzymes called matrix metalloproteinases (MMP's), which play vital roles in biological functions. CPR has initiated several programs to increase biomedical research activities in the state including seed grants for NDSU faculty, graduate and postdoctoral fellowships and summer research fellowships for faculty and undergraduates from regional four-year colleges. This has provided for integration of research and graduate education in chemistry, cell biology, computational biology and pharmacy at NDSU to a previously unseen extent.

Dietary Use of Canola Seeds for Production of an Anticancer Agent in Milk

Principal Investigator:	**Park, Chung**
Institution:	**North Dakota State University**
City:	**Fargo**
Funding Source:	**Northern Canola Growers Association**
Project Funding Amount:	**$13,609**
Project Funding Period:	**2003**

DESCRIPTION: Conjugated linoleic acid (CLA), a natural component of food, has been shown to have beneficial health benefits such as the suppression of breast caner development and the prevention of heart disease. Dairy products are major sources of CLA in human diets , and the concentration of CLA in dairy products is essentially a function of the level of CLA n raw milk fat. The CLA content in milk can be changed by adding vegetable oils that are high in unsaturated fatty acids, such as canola or sunflower, to the diets fo dairy cows, and there is an increasing market incentive at present for the dairy/food industry to produce milk and dairy products that carry nutritionally and medically beneficial components.

Canola seed is a regionally grown crop that could become a significant ingredient in dairy cattle diets, not only in North Dakota but in all U.S. Dairy markets, but in most dairy operations, adding straight canola oil directly to diets is not feasible because of the high cost of the oil and the problems associated with handling it. However, we have demonstrated that direct dietary supplementation with a low oil canola seed increased slightly the total CLA concentration in milk fat of lactating dairy cows, but eh magnitude of the increase was far below our prediction and would probably not be of nutritional significance. Therefore, the objective of this research is to document that feeding dairy cows a diet containing a high amount of canola seed will increase the CLA concentration to a nutritionally significant level. (12 to 20 mg/g fat) in milk. Both the canola and dairy industries may enjoy economic benefits as well as heightened public images by positive findings from this research, and the consumer will be provided a food product with greater health value.

Lipotrope Stimulates Breast Cancer Cell Death

Principal Investigator:	**Park, Chung S**
Institution:	**North Dakota State University**
City:	**Fargo**
Funding Source	**National Cancer Institute/ DHHS/NIH**
NCI Division:	**Division of Cancer Biology**
Project Funding Amount:	**$135,650/ year**
Project Funding Period:	**8/01/03 to 7/31/05**

DESCRIPTION: (provided by applicant): Lipotropes (methyl group containing nutrients including choline, methionine, folic acid, and vitamin B12) have been shown to have oncostatic action on mammary cancer. We hypothesize that excess lipotropes may alter expression of apoptosis-related genes including bcl-2 gene, via alterations in DNA methylation, and consequently increase the sensitivity of cancer cells to programmed cell death. Specific aims of the proposed study are: 1) to confirm if excess lipotropes increase the susceptibility of breast cancer cells to apoptosis, 2) to investigate if lipotrope-supplementation alters the expression of certain genes involved in the regulation of apoptosis, and 3) to examine if an excess of lipotropes affects genomic methylation patterns of apoptosis-related genes. Tamoxifen (TAM), an anti-cancer agent, will be used to induce apoptosis in breast cancer cells. Two breast cancer cell lines, MCF-7 and T47D, as well as a normal mammary cell line, MCF-10A, will be tested in this study. Cells will be cultured in preincubation medium until 80 percent confluent and then switched to apoptosis induction media (TAM added) with (treatment) or without (control) excess lipotropes. Apoptosis will be accessed by immunohistochemistry, electrophoretic DNA fragmentation patterns, and caspase assay. Expression of apoptosis-related genes will be elucidated by gene array methodology and Northern analysis. The genomic DNA methylation patterns of apoptosis-related genes will be analyzed by methylation specific PCR and HPLC. Direct molecular and biochemical information on the possible effect of excess lipotropes upon breast cancer cell death could ultimately lead to the development of dietary compounds and chemotherapeutic agents that would reduce and treat breast cancer.

Type of Cancer Research Codes:

- Systemic Therapies - Discovery and Development

Type of Cancer Codes:

- Breast Cancer

Improving Treatments for Prostate Cancer Metastasis

Principal Investigator:	**Sehgal, Inder**
Institution:	**North Dakota State University**
City:	**Fargo**
Funding Source:	**Fraternal Order of Eagles**
Project Funding Amount	**$5000**
Project Funding Period:	**2002**

DESCRIPTION: Researcher left NDSU, no abstract on file.

Metallothionein Isoform 3 and Renal Cadmium Toxicity

Principal Investigator:	**Sens, Donald A**
Institution:	**University of North Dakota**
City:	**Grand Forks**
Funding Source:	**National Cancer Institute**
Project Funding Amount	**200,000 per year**
Project Funding Period:	**09/13/02-6/30/06**

DESCRIPTION: (provided by applicant): Isoform 3 of the metallothionein gene family (MT-3) was first recognized and isolated in 1992 and designated as a brain-specific family member. Detailed studies in the neural system demonstrated that MT-3 was unique among the 10 MT family members in that it possessed, in addition to a metal binding capability, a growth inhibitory activity. The applicant was the first to demonstrate that MT-3 was expressed outside the neural system when it was shown that appreciable amounts of MT-3 mRNA and protein were expressed in the proximal tubule and other epithelial cells of the human kidney. In subsequent studies using proximal tubule-derived cell cultures, the applicant has shown that the basal expression of MT-3 is involved in the maintenance of proximal tubule vectorial active transport. Other studies have shown that basal expression of MT-3 participates in mediating the toxicity resulting from exposure of the proximal tubule to the environmental pollutant, cadmium. Specific aim 1 has three goals designed to define the role of MT-3 in proximal tubule vectorial active transport. The first is to prove the hypothesis that MT-3 functions in the establishment of about tight junctions between proximal tubule cells and that the degree of "tightness" of the junctions is regulated by the level of MT-3 gene expression The second goal is to prove the hypothesis that the unique N-terminal region of MT-3, and not the C-terminal region, is the epitope responsible for the re-establishment of vectorial active transport. The last goal is to test the hypothesis that the overexpression of MT-3 results in elevated levels of apoMT. Specific aim 2 has three goals designed to define the role of MT-3 expression in Cd+2-induced nephrotoxicity. The first is to test the hypothesis that the basal level of MT-3 in the proximal tubule cell contributes to Cd+2 resistance through one component assignable to tight junction formation and a second component assignable to the binding and sequestration of Cd+2. The second is to test the hypothesis that the basal expression of MT-3 participates in the cell's resistance to Cd+2-induced apoptotic cell death. The third is to test the hypothesis that MT-3 expression and exposure to Cd+2 alters the expression of Zn+2-requiring transcription factors. The long term goal of the proposed research is to define the functional and regulatory role of MT-3 expression in the proximal tubule under conditions of normal homeostasis and when exposed to cadmium.

Metallothionein, Environment Insult and Bladder Cancer

Principal Investigator: **Sens, Donald A**
Institution: **University of North Dakota**
City: **Grand Forks**
Funding Source: **National Cancer Institute**
NCI Division: **Division of Cancer Treatment and Diagnosis**
Project Funding Amount: **188,000 per year**
Project Funding Period: **4/01/02 to 3/31/06**

DESCRIPTION: (provided by applicant): Bladder cancer is one of the few malignancies in which occupational and environmental exposures to chemicals have been documented as major risk factors. The metallothioneins (MTs) are a family of low molecular weight proteins that are widely recognized as a major weapon in the cell's armamentarium for protection against and recovery from physical and chemical insult, environmental or otherwise. Thus, it is only logical that MT might have a role in human bladder cancer. In recent studies, the applicant has shown that the third isoform of MT (MT-3) is overexpressed in all human bladder cancers and in most precursor lesions. Similarly, the MT-I and MT-2 proteins have been shown to be overexpressed in some of these bladder cancers and overexpression of the protein correlates to overexpression of the MT-1X gene. The applicant hypothesizes that the early overexpression of MT-3 (and possibly other MT isoforms) sequesters Zn+2 from important regulatory molecules, including p53, through the generation of apoMT and that this in turn renders the early bladder cancer cell as a slow growing, chemotherapeutic resistant, genetically unstable cell destined to progress. The long-term goal of this application is to elucidate the mechanism/s underlying the alterations of MT gene regulation that occur in the development and progression of human bladder cancer. Four specific aims are proposed. The first is to demonstrate that the up-regulation of MT gene expression occurs during bladder cancer progression using a cell culture based model system. The second aim is to show that MT-3 overexpression alters cell growth, drug resistance and genetic stability of bladder urothelial cells consistent with a role in tumor progression and to define the mechanism underlying these alterations. The third specific aim is to correlate MT gene expression to patient outcome by a retrospective analysis of paraffin-embedded tissue (PET) from patients with bladder cancer. A major goal being to identify premalignant and established lesions that are likely to progress and follow an aggressive clinical course. The final specific aim is to demonstrate that the presence of MT-3 positive urothelial cells in the urine can predict bladder cancer reoccurrence and adverse workplace exposure. The completion of these studies would provide a strong link between a protein family known to mediate the cell's response to environmental exposure and a cancer strongly associated with exposure to environmental agents.

Type of Cancer Research Codes:

- Endogenous Factors in the Origin and Cause of Cancer
- Exogenous Factors in the Origin and Cause of Cancer

Type of Cancer Codes:

- Bladder Cancer
- Urinary System

Cadmium, Metallothionein and Breast Cancer Progression

Principal Investigator: **Sens, Mary A**

Institution: **University of North Dakota**
City: **Grand Forks**
Funding Source: **National Cancer Institute**
NCI Division: **Division of Cancer Treatment and Diagnosis**
Project Funding Amount: **197,500 per year + 39.6% (yearly amount) for indirect costs**
Project Funding Period: **4/01/05 to 3/31/09**

DESCRIPTION: (provided by applicant): The applicant is the first to demonstrate that class 3 metallothionein, MT-3, is over expressed in a subset of human breast cancers and that over expression is associated with early breast cancers having a poor outcome. The applicant has also shown that the normal human breast has no detectable expression of MT-3 mRNA or protein. The applicant hypothesizes that the early over expression of MT-3 sequesters Zn +2 from important regulatory molecules, including p53, through the generation of apoMT and that this in turn renders the early breast cancer cell as a slow growing, chemotherapeutic resistant, genetically unstable cell destined to undergo progression. Three specific aims are proposed. The first is to demonstrate that the over expression of MT-3 can be developed as a prognostic indicator of early breast cancers destined to undergo tumor progression. The second aim is to define the mechanism underlying the observation that the MT-3 gene is transcriptionally silent in normal breast epithelial cells but transcriptionally active in a sub-set of human breast cancers. This goal will be accomplished by identifying the regions of the MT-3 promoter, the promoter elements, and the transcription factors involved in regulating MT-3 mRNA expression in breast cancer. The last aim is to define the mechanism underlying the observation that normal breast epithelial cells forced to over express the MT-3 gene, express abundant MT-3 mRNA, but no MT-3 protein. [To define the role that translation and proteolysis have in the expression of MT-3 mRNA and protein in the breast epithelial cell.] The long-term goal of this application is to elucidate the mechanism/s underlying the alterations of MT-3 gene regulation that occur in human breast cancer and to apply this knowledge to understanding the tumor biology of the breast cancer cell and to improve diagnosis, prognosis and ultimately treatment for the patient with breast cancer.

Type of Cancer Research Codes:
- Uncoded

Type of Cancer Codes:
- Uncoded

Field Induced Pores Formation During Iontophoresis

Principal Investigator: **Singh, Jagdish**
Institution: **North Dakota State University**
City: **Fargo**

Funding Source: **DHHS/NIH/NICHD**
DOD Division: **1999 Prostate Cancer Research Program**
New Investigator Award **$70,500 per year**
Project Funding Period: **2002-2003**

DESCRIPTION: (provided by applicant) Matrix Metalloproteinases (MMPs) are believed to facilitate invasion, growth factor activation, and angiogenesis during the metastasis of solid tumors including prostate cancer, and they have become a popular target for the developing class of anti-metastasis agents. Existing anti-MMP drugs are synthetically designed pharmacologic inhibitors that possess a relatively broad spectrum of action and block MMP functions continuously. Unfortunately, these characteristics result in the inhibition of physiologically necessary MMPs and some non-matrix metallo-enzymes. Although inhibition of MMPs can ultimately become an effective strategy for the prevention of prostate cancer metastasis, it is also important to impair their function without the high potential for systemic toxicity. We believe this goal may be accomplished by inhibiting the process of MMP induction within metastatic prostate cancer cells, rather than targeting MMPs after they are already secreted. However, the biological processes of MMP induction by metastatic prostate cancer cells are currently understudied and therefore poorly understood. In this New Investigator proposal, we will address some of these biological processes by focusing our studies on the MMP-9 because it is clinically linked with prostate cancer metastasis and can be induced from very low to high levels in prostate cancer cells by the pleiotropic polypeptide TGFb1, which is itself clinically and experimentally associated with prostate cancer metastasis.

We have recently demonstrated that, in contrast to the known mechanisms of intracellular MMP-9 upregulation, TGFb1 induces MMP-9 via increased mRNA stability. In this proposal, our goal is to determine how this increased mRNA stability occurs. RNA stability is regulated by several mechanisms; however, in most instances, regulation occurs through binding proteins associated with the 3-prime untranslated region (3'UTR). Our investigation will therefore begin at this region with the search for putative mRNA sequences and binding proteins that mediate TGFb1 regulation of MMP-9.

Specifically, we will (1) map the MMP-9 transcript, beginning with the 3'UTR, for broad and then narrow regions critical to maintenance of transcript stability; (2) analyze oligonucleotide sequences of the MMP-9 transcript identified in Specific Aim 1 for TGFb1-regulated protein-binding; and (3) characterize TGF-b1 regulated binding proteins and test these proteins as independent regulators of MMP-9 mRNA stability.

Once we identify and understand key molecular components that increase MMP-9 RNA stability, we can select rational targets within this pathway and, through future grant proposals, design novel antimetastatic approaches around these mechanisms.

MeritCare Hospital Community Clinical Oncology Program

Principal Investigator: **Steen, Preston D.**
Institution: **Roger Maris Cancer Center**
City: **Fargo**

Funding Source: **National Cancer Institute**
Grant Number: **5U10CA037417-22**
Project Funding Amount: **$526,0000** (2005)
Project Funding Period: **9/30/1983-5/31/2009**

DESCRIPTION: (provided by applicant): Overall goal: To provide state-of-the-art cancer care to patients and families as close to home as possible through participation in NCI approved clinical trials. Program objectives: 1. Increase the number of eligible patients placed on NCI approved cancer treatment clinical research trials. 2. Facilitate wider community participation, including minorities, women and other underserved populations, in cancer treatment and prevention and control research approved by NCI. 3. Continue to enhance the participation of primary healthcare providers and other specialists with the CCOP investigators in cancer treatment and control research. 4. Increase the quality and efficiency of data management systems/processes. 5. Expand participation in NCI approved cancer prevention and control clinical research trials.

5th Virtual Conf on Genomics and Bioinformatics (VCGB-V)

Principal Investigator: **Valdivia-Granda, Willy A**
Institution: **Orion Integrated Biosciences**
City: **Fargo**

Funding Source: **National Institute of Environmental Health Sciences**
Project Funding Amount:

Project Funding Period: **02/01/2005-01/31/2006**

DESCRIPTION: (provided by applicant): Scientific conferences are becoming one of the most significant environments where discussion about the developments on genomics and bioinformatics can take place. There are more than 40 annual conferences on genomics and bioinformatics in the United States alone. However, traditional conferences are costly in time and resources. The registration fees for a typical three-day conference range from $700 to $2,000 United States currency. In addition to this cost, researchers need to cover travel and logging expenses. Unfortunately, not all researchers and students are able to afford these expenses. This proposal introduces the Virtual Conferences on Genomics and Bioinformatics (VCGB). Using Access Grid and Live Internet Video streaming (real player) technologies, this event simultaneously broadcast the presentations of a multidisciplinary team of 40 researchers in least 150 conference rooms in 48 countries. The following tracks has been selected for the 2005 virtual conference: 1) Toxigenomics, 2) Genomics of Cancer, 3) Nanogenomics and Bioengineering, 5) Computational Chemistry, 5) Systems biology, 6) Artificial and Synthetic Life, 7) High performance Computing and 8) Bioethics and Intellectual Property Rights. This event will be featured from September 19-22, 2005. The virtual conference will continue to be completed without registration fees. The conference is an innovative way to educate, share knowledge, and advance the understanding of biological systems. The Virtual Conference is a significant contribution that can lead to the development of advanced degree programs taking advantage of the skills of researchers distributed around the world, but joined by technologies used by VCGB.

Private Sector Research

Private Sector Summary Table

Institution	Clinical Trials	Avg. Trials Available	Trial Patients per Year
MeritCare Roger Maris Cancer Center	YES	120	105 (Year 2004)
Altru Cancer	YES	40	35 (Year 2004-new patients)
MedcenterOne Health System	YES	50	67 (Year 2004)
St. Alexius	YES	30	75 (FY 2004)
Bismarck Cancer Center	YES	Work with existing trials	unknown
Odyssey Research	YES	60-70	80-100
Trinity Health	YES	20	38 in tracking
Dakota Cancer Institute	YES	12	20 (Year 2003) 32 (Year 2004)
Jamestown Hospital	NO	0	0
St. Joseph's Hospital & Health Center	NO	0	0
Mercy Medical Center	NO	0	0
Mercy Hospital of Devils Lake	NO	0	0

*Numbers cannot be totaled for total number of clinical trials or patients. Clinics/hospitals work in conjunction with research centers and cancer centers.
**All numbers are approximate.

MeritCare (Fargo)

MeritCare Roger Maris Cancer Center Overview

MeritCare Health System is an integrated clinic and hospital system headquartered in Fargo, N.D. Founded in the early 1900s as Fargo Clinic and St. Luke's Hospital, MeritCare has evolved into the region's premier health care system. Today, MeritCare consists of the largest group practice in North Dakota with nearly 400 physicians and more than 170 physician assistants and advanced practice nurses specializing in 73 areas of medicine. Over 1.4 million patient visits take place at MeritCare each year. MeritCare's mission is to improve the health and quality of life of the people we serve.

Some of MeritCare Awards & Recognitions include:

- 100 Most Wired Hospitals in the United States (1999, 2000, 2001, 2002, 2003, 2004 Hospitals & Health Networks magazine)
- Top 100 Cardiovascular Hospitals (1999, 2000, 2002, 2003,2004 Solucient)
- Top 100 Hospitals (2004 Solucient)
- America's Top Hospitals for coronary bypass surgery and heart attack (2003 Money Magazine -- data obtained from HealthGrades)
- Consumer Choice Award for quality in healthcare and image (2000 National Research Corp.)
- Top 50 Cancer Center (1999 U.S. News & World Report)

Investigator Experience

Clinical research at MeritCare is supported by experienced Physician, Principal Investigators in the following areas:

- Allergy and Pulmonary Disease
- Critical Care Medicine
- Endocrinology
- Heart Services
- Hematology
- Immunology
- Infectious Disease
- Internal Medicine
- Medical Oncology
- Neonatal-Perinatal Medicine
- Neuroscience
- Pediatric Oncology
- Psychiatry
- Radiation Oncology
- Rheumatology
- Transplant Services

Clinical Research Experience

MeritCare has been a leader in clinical research for over 20 years. Today, approximately 20 subspecialty clinical trials and 100 clinical trials at MeritCare Roger Maris Cancer Center are open for enrollment. These trials give patients access to the latest in treatments and drugs that would not otherwise be available.

MeritCare's Clinical Research Support

- MeritCare's IRB meets biweekly ensuring protocols are reviewed in a timely manner allowing rapid study start-up
- Patient database and electronic medical records
- 10 full-time study coordinators actively screening patients for eligibility criteria
- Locked drug and storage facilities with limited access
- Pharmacists with clinical trial experience
- Compliant patient population
- Local laboratory personnel experienced at sending trial specimens to central laboratories

Sponsors and CROs we have worked with in the past or are currently working with include:

- Access Medical
- Amgen, Inc.
- Biogen Idec
- Bristol-Myers Squibb
- Boehringer Ingelheim
- CareStat
- Centocor Pharmaceuticals
- Children's Oncology Group (COG)
- Chiron
- Collaborative Antiviral Study Group
- Community Clinical Oncology Program (CCOP) Including:
  - North Central Cancer Treatment Group (NCCTG)
  - Eastern Cooperative Oncology Group (ECOG)
  - National Surgical Adjuvant Breast & Bowel Project (NSABP)
  - Radiation Treatment Oncology Group (RTOG)
  - H. Lee Moffitt
  - Southern Oncology Group (SWOG)
  - Gynecologic Oncology Group
  - Cancer and Leukemia Group B (CALGB)
  - National Cancer Institute of Canada (NCIC)
- Coulter Pharmaceuticals
- Covance
- CPL Associates
- CryoLife
- Cubist Pharmaceuticals
- C.V. Therapeutics, Inc.
- Eli Lilly & Company
- EndiCOR Medical, Inc
- Favrille
- GlaxoSmithKline
- GelTex Pharmaceuticals
- Genentech
- Genzyme Corporation
- Guident
- Hoffman-LaRoche
- ICON
- ICOS Corporation
- Integrium
- Johnson & Johnson Pharmaceutical Research & Development
- Medical CV, Inc.
- Medicines Company
- Medtronic, Inc.
- Merck & Company
- MGI Pharma
- Myocor, Inc.
- National Lymphocare
- National Nosocomial Resistance Surveillance Group
- National Institues of Health
- Ortho Biotech Oncology
- Paraxel
- Peninsula Pharmaceuticals Inc.
- Pfizer
- Pharmacia
- PPD Development
- Procter & Gamble Pharmaceuticals
- Rhone-Poulenc-Rorer
- Sanofi-Synthelabo Inc.
- Schering-Plough
- Stroke Practice Improvement Network(SPIN)
- Teva Pharmaceutical Industries Ltd.

Source:
Website: http://www.centerwatch.com/professional/pro1659.html Retrieved: 06/22/05.

Research at MeritCare Roger Maris Cancer Center

All research conducted within MeritCare Roger Maris Cancer Center is supervised by the Cancer Research Committee. This committee meets monthly under the direction of Dr. Preston Steen, who serves as the chair of the committee. Other members of the committee include the Oncology Education and Research Manager, oncology physicians, pharmacy and research staff. Prior to proceeding with a proposed clinical research trial, a review of the study is conducted for scientific merit, potential barriers and financial impact.

Research programs within Roger Maris Cancer Center include the Community Clinical Oncology Program (CCOP), Children's Oncology Group (COG), industry sponsored trials and research conducted by physicians and staff members within oncology to address areas of particular interest.

In 2004, a total of 105 patients were enrolled onto a therapeutic clinical research trial, which is 7.7 % of all newly diagnosed patients at MeritCare Roger Maris Cancer Center. When patients enrolling on a cancer prevention clinical research trial or an institutional trial are included, the percentage then increases to13.5% of all newly dignosed patients. A commendation is received from the American College of Surgeons for 6% or more of patients enrolling onto a clinical research trial.

Community Clinical Oncology Program (CCOP) Report

The Community Clinical Oncology Program (CCOP), overseen by the National Cancer Institute (NCI), is the umbrella under which much of the research conducted at the MeritCare Roger Maris Cancer Center occurs. Dr. Preston Steen serves as the principal investigator. Dr. John Tate serves as the associate principal investigator of the CCOP which provides continuity to the program in the absence of Dr. Steen. Approximately 60-70 clinical research trials are available at any given time to patients who meet the eligibility criteria. This allows patients in our region access to the same treatment protocols being utilized in cancer centers across the United States.

A major focus of the CCOP research continues to be in the prevention and early detection of cancer. The SELECT trial studies a possible reduction in the incidence of prostate cancer in men who take selenium and Vitamin E, either in combination or separately. Men enrolled in this study will be followed for up to 12 years to monitor their incidence of prostate cancer. This national study has enrolled the required number of men and as of June 30, 2004, 117 men were enrolled in this study at Roger Maris Cancer Center.

The STAR Study, comparing Tamoxifen and Raloxifene in the prevention of breast cancer in high-risk women, also met the enrollment target and closed in May of 2004. A total of 82 women enrolled on this study at our site. Ongoing monitoring of this group of women continues following the study requirements.

The EXACT colorectal cancer screening trial continues to enroll study participants age 65 and older. Currently a total of 76 people have enrolled in this study at our site to examine screening tools for use in the early detection of colorectal cancer, comparing testing that looks for blood in the stool versus a new DNA testing tool.

Children's Oncology Group

Children's Oncology Group (COG) is a group of over 200 institutions throughout North America committed to treating children with cancer, ultimately improving cure rates for children and their quality of life during and following treatment. Dr. Nathan Kobrinsky serves as the Principal Investigator at MeritCare Roger Maris Cancer Center. A total of 32 children either enrolled in pediatric clinical trial or were registered for tracking of pediatric cancers in 2004.

Industry Sponsored Research

Clinical research trials through pharmaceutical companies also provide the opportunity to treat patients with the newest drugs and treatments. These trials may be conducted as part of the Food and Drug Administration (FDA) approval process or following the approval of this new drug. Physicians at MeritCare Roger Maris Cancer Center feel that this is another opportunity to provide the most recent advances in cancer care to patients. Dr. Gerald Gross and Dr. Louis Geeraerts serve as Principal Investigators.

Research Conducted by MeritCare Physicians and Staff

Several physicians and support staff are actively involved in research projects within MeritCare Health System. Dr. Robert Sylvester is nearing final enrollment for a study to compare methadone and morphine for cancer pain management. Dr. Nathan Kobrinsky remains an active researcher, in addition to his role as principal investigator for COG. Dr. Ann Sandgren continues cooperative work with Dr. Kevin McCaul of North Dakota State University regarding telephone therapy and breast cancer survivors.

As strides are made in the field of oncology to improve survival rates and the quality of life for cancer survivors, MeritCare Roger Maris Cancer Center will continue to conduct the latest research.

Source:
Connie Hoffman, RN, MS, Oncology Education & Research Manager, 6/17/05.

Altru (Grand Forks)

Altru Health Care Center Overview

Altru Health System Research Center is a department within Altru Health System fully dedicated to providing research support services to physicians and researchers within Altru Health System. Altru Health System is a not-for-profit organization consisting of an acute hospital, rehabilitation center, a large multispeciality clinic, a family medicine clinic and several branch clinics. Altru's Research Center coordinates research studies and clinical trials ranging from general medicine to multiple specialties including diabetes, cardiology, urology, women's health, respiratory disease, pain management, vascular disease, renal or kidney disease, orthopedic conditions and nutrition.

Our office consists of four full-time employees and provides comprehensive research services and personalized care to research patients. Responsibilities of our dedicated staff include placement of studies with appropriate investigators, regulatory and IRB document submission, study tracking, finalizing contracts and budgets, patient recruitment, providing study coordination and completing case report forms.

Our Commitment

The Researchers and Staff conducting research are committed to: Adhere to all GCP and ICH guidelines.
Clean data submission

- Work closely with the principal investigators and other staff to assure that research patients are safe and treated with respect and dignity
- Providing research subjects with complete information (in simple, understandable terms) about the research study before obtaining informed consent.
- Protecting subject's physical, psychological, and economic well being.
- Being fair and impartial in selecting and dealing with research subjects.
- Respecting the rights of research subjects and protecting the confidentiality of information about them.

Facility Description

The Center's location on the main campus of Altru Health System provides easy access not only to patients in the hospital, but also to the clinics where many of the research patients are seen. Space for visiting monitors and sponsor representatives is available within the Research Center offices as well as in other locations on the Altru campus.
The medical complex is equipped with CT, MRI, and DEXA scanners, locked drug and storage facilities with limited access. The 232 licensed bed hospital also houses same day surgery, outpatient hemodialysis, an interventional cardiology lab and a cardiology rehabilitation program. Located within the main clinic is the Diabetes Center, Vascular Center, ENT Center and Bariatric Center.

- Emergency medicine, surgical, and critical care expertise earned Altru a Level II Trauma Center designation in 1997 from the American College of Surgeons.
- The Rehab center conducts comprehensive rehabilitation services to help patients regain abilities and achieve greater independence.
- Located in the center of Grand Forks, the Altru campus is 10 minutes or less away from hotels and restaurants. Serviced by Northwest Airlines, the airport is 20 minutes away.

Investigator Experience

Abdel Ahmed, MD
Interventional Cardiology/Internal Med

Eric Johnson, MD
Diabetes/Family Med

James Brosseau, MD
Endocrinology/Diabetes/Internal Med

William Zaks, MD
Endocrinology/Diabetes/Internal Med

Joanne Gaul, MD
Family Medicine

Yvonne Gomez, MD
Family Medicine

Joe Walz, MD
Family Medicine

Anthony Chu, MD
Gastroenterology/Internal Medicine

David Antonenko, MD
General/Vascular Surgery, Critical Care/Trauma

Attila Dalmi, MD
Hospitalist/Internal Med

Jon Allen, MD
Internal Medicine

Renee Doll, MD
Internal Med/Pediatrics

James Hargreaves, DO
Infectious Disease

Paul Fleissner, MD
Occupational Medicine

Paul Macleod, MD
Orthopedics/Sports Med/Total Joint Replacement

Glen Yoshida, MD
Otolaryngology/Facial & Reconstructive Surgery

Bernard Hoggarth, MD
Pediatrics

Colleen Swank, MD
Pediatrics

Wayne Breitwieser, MD
Pulmonary Disease/Critical Care/Internal Med

Surinder Grewal, MD
UrgentCare/Family Med

Rolf Paulson, MD
Vascular Disease/Internal Med/Hypertension
Ramon Anel, MD
Nephrology, Critical Care

Guina, Maria, MD
Neurology, Women's Health
Layawen, Aselo, MD

Internal Staff Expertise

Renee Hendrickson, CRC, LPN
4 years experience in clinical research

Dianne Vold, CRC, LPN
7 years experience in clinical research

Brenda Westacott, CRC
5 years experience in clinical research

Patient Demographics

The patients in research studies conducted at Altru are well known for compliance with protocol requirements and for low drop out rates. The Center has received very high ratings from patients participating in research studies as shown by patient satisfaction surveys.

Altru Health System serves more than 200,000 residents in a 17 county area in northeastern North Dakota and northwestern Minnesota.

Clinical Research Experience

Altru Health System Research Center was opened in 1993 to provide an opportunity for people in our area to benefit from scientific study.
Our involvement in inpatient and outpatient phase II-IV clinical research studies includes:

- Acute bronchitis
- Angina
- Benign Prosthetic Hypertrophy
- Chronic pain
- Chronic obstructive pulmonary disease (COPD)
- Community acquired pneumonia
- Coronary artery disease
- Deep vein thrombosis
- Diabetes
- Early stage severe sepsis
- End -stage renal disease
- Hemodialysis
- Hyperlipidemia
- Hypertension
- Idiopathic membranous glomerulopathy
- Infant Nutrition
- Infectious diseases
- Influenza
- Irritable bowel syndrome
- Myocardial infarction
- Osteoarthritis
- Osteoporosis
- Pace maker device
- Pediatric vaccine
- Peripheral arterial disease
- Peritoneal Dialysis
- Post-surgical pain
- Pulmonary embolism
- Sinusitis

Sponsors and CRO's we have worked with in the past or are currently working with now include:

- Abbott Laboratories
- Alexion
- Amgen, Inc.
- AstraZeneca
- Aventis
- Boehringer Ingelheim
- Bristol-Myers Squibb
- Eli Lilly
- Endo Pharmaceuticals
- Genetech, Inc
- GlaxoSmithKline
- Guidant Inc
- Merck & Co.
- NIH
- NHLBI
- Novartis
- NPS Allelix Corp
- Organon, Inc
- Otuska America Pharma
- Pfizer
- Proctor & Gamble
- Purdue-Pharma
- Robert Wood Johnson Foundation
- Roche Laboratories
- Sanofi-Synthelabo
- Searle & Co.
- Shire Laboratories, Inc.
- SmithKline Beecham

Clinical Research Organizations:

Akzo Nobel	Kendle
Bringham & Women	MTRA
Clintrials	Omnicare
Covance	Paragon Biomedical, Inc.
DCRI	PAREXEL
ICON	PPD Development
Innovex	PRA International
Integrated Research	Quintiles
George Washington University	Target Research Associates

Other Information

Altru's Research Center has coordinated and managed over 100 studies since it was formed in 1993. The Center received the ALLHAT Allstar Award for excellence in conducting the ALLHAT study. The Center was the only recipient of the award from Region 7 and one of only 10 recipients of the award nationwide.

Altru's Research Center also conducted an original research study in conjunction with the North Dakota Department of Health, funded by the Robert Wood foundation. The study examined the physical and mental health effects on the citizens of both Grand Forks, ND and East Grand Forks, MN as a result to the Flood of 1997.

- Altru Health system uses our own IRB.
- Our department personnel have experience in using Remote Data Entry.
- We have a -70° freezer.
- Our site has its own clinical lab.
- We can use a central lab.
- There is an on site pharmacy.

Source:
Website: http://www.centerwatch.com/professional/pro1505.html Retrieved: 06/22/05

Medcenter One (Bismarck)

Medcenter One Health Systems

Clinical trials working in conjunction with North Central Cancer Treatment Center (affiliated with Mayo Clinic) and Clinical Trial Support Unit. Medcenter One conducts phase two and three trials. On average the center has approximately fifty trials current at any point in time. The trials encompass all kinds and types of cancer. No lab research.

Source:
Phone Inquiry: June 23, 2005

St. Alexius (Bismarck)

St. Alexius

Center Overview

Clinical Research Services is a department within St. Alexius Medical Center fully dedicated to providing research support services to physicians within our region and the valued patients they serve. St. Alexius Medical Center is a tertiary care facility affiliated with PrimeCare, a network that includes over 150 physicians both in private and institutional practice. We have been conducting clinical trials for over 18 years. This collaboration between our experienced investigators and highly motivated clinical research team allows us to offer the latest research medicines and treatments to our patients along with the highest quality service to our patients and sponsors.

Our office consists of seven full-time employees and provides comprehensive research services and personalized care to research patients 24 hours a day, seven days a week. In addition, seven clinical pharmacists with residency training have extensive experience as study coordinators. Responsibilities of our dedicated staff include placement of studies with appropriate investigators, regulatory and IRB document submission, study tracking, finalizing contracts and budgets, patient recruitment, providing study coordination and completing case report forms.

Careful precautions are taken to ensure the protection of our study participant's rights and welfare. Participants are kept informed throughout the course of their participation in a clinical trial.

Mission:

The mission of Clinical Research Services is to advance the future of medicine by providing research opportunities for participants, physicians, our community and sponsor organizations. Our comprehensive clinical expertise, innovative approach and high quality are demonstrated by fostering relationships through integrity, teamwork, and excellent customer service.

Vision:

The vision of Clinical Research Services is to be a leading investigative site contributing to the research of groundbreaking medication and future technologies by ensuring accuracy, timeliness, and dependability. This vision supports continuing research endeavors with numerous sponsors, physician investigators, and clinical research organizations.

Clinical Research Experience

Clinical Research Services has been involved in clinical research since 1987. Our professional staff has over 78 years of combined experience in clinical trials.

Our involvement in inpatient and outpatient phase II-IV clinical research studies has contributed substantially to the development of new drugs and treatments for the following conditions:

- Angina
- Asthma
- Cancer: breast, colon, lung, melanoma, chemo-induced nausea, neutropenia, prostate, brain, pain, multiple myeloma, cachexia
- Chronic pain
- Chronic obstructive pulmonary disease (COPD)
- Community acquired pneumonia
- Conjuctivitis
- Coronary artery disease
- Cystic fibrosis
- Depression
- Diabetes - Adult/Pediatric
- Dyslipidemia
- Early stage severe sepsis
- End-stage renal disease
- Gastroparesis
- Heartburn
- Hormone Replacement Therapy
- Hyperlipidemia
- Hypertension
- Incontinence
- Infectious diseases
- Influenza
- Insomnia
- Irritable bowel syndrome
- Men's Health
- Migraine
- Myocardial infarction
- Neurological: incomplete spinal cord injury
- Non-Hodgkin’s lymphoma
- Obesity
- Osteoarthritis
- Osteoporosis
- Overactive bladder
- Peptic ulcer disease
- Post-surgical pain
- Prevention post-op ileus
- Rheumatoid arthritis
- Schizophrenia
- Sinusitis
- Stroke
- Weight Reduction
- Women's Health

Our clinical research team is committed to providing:

- Rapid study start-up
- Pro-active patient enrollment
- Clean data submission
- Highly experienced principal investigators
- Initial training and continuing education for all support personnel

SPONSORS and CRO'S:

- Abbott Laboratories
- Acorda Therapeutics
- Adolor Corporation
- Alcon
- Allos Therapeutics, Inc
- Amgen, Inc.
- Ark Therapeutics, LTD
- AstraZeneca
- Aventis
- Biomira, Inc.
- Boehringer Ingelheim
- Bristol-Myers Squibb
- Cephalon
- Eli Lilly & Co.
- Endo Pharmaceuticals
- Genentech, Inc.
- GlaxoSmithKline
- IDEC Pharmaceuticals Corporation
- Janssen Pharmaceuticals
- Knoll Pharmaceutical Co.
- Lorex Pharmaceuticals
- Maxim Pharmaceuticals
- Merck & Co.
- Mucos
- Neurocrine Biosciences
- Novartis
- OSI Pharmaceuticals, Inc.
- Organon, Inc
- Proctor & Gamble
- Purdue-Pharma
- R.W. Johnson Research Institute
- Roche Laboratories
- Sanofi-Synthelabo
- Searle & Co.
- Shire Development, Inc.
- SkyePharma
- SmithKline Beecham
- Vical, Inc.
- Wyeth
- Yamanouchi, Inc.

Clinical Research Organizations

- Akzo Nobel
- Biopharm
- Cell Therapeutics, Inc
- Clinical Research Group
- Clintrials
- Covance
- CTMS
- DP Clinical
- GH Besselaar Associates
- IBRD
- ICON
- INC Research
- Innovex
- Inveresk Research
- Kendle
- Medici Group
- Med Search, Inc.
- Millenix
- MTRA
- Omnicare
- Paragon Biomedical, Inc.
- PAREXEL
- PPD Development
- PRA International
- PRN
- Quintiles
- Target Research Associates
- The Freeman Group

Facility Description

Clinical Research Services offers a professional atmosphere for our research patients and monitors. We are also equipped with a patient waiting room, complete exam rooms, a phlebotomy station with processing capabilities, and a secured area for investigational drug storage. We provide a dedicated room for our monitors complete with phone and computer accessibility. This room has its own separate access so that our monitors can work even when our main office is closed.

As a department within St. Alexius Medical Center, a Level II Trauma Center with 308 licensed beds, Clinical Research Services is centered among nine multi-specialty clinics. The medical complex is equipped with CT, MRI, Hologic DEXA scanners, a state-of-the-art radiotherapy Cancer Care Center, an outpatient hemodialysis and peritoneal dialysis center, and regional laboratory services. It also has full electrophysiologic and interventional cardiology labs. St. Alexius Medical Center and affiliated clinics have a large database accessible by ICD-9 diagnostic codes.

Clinical Research Services is also easily accessible by public transportation. We are only 10 minutes from Bismarck International Airport, which is served by two major airlines via Minneapolis and Denver.

Investigator Experience

- Kamol Lohavanichbutr, MD
  Area of Expertise: Cardiology/Interventional Cardiology
- John Windsor, DO
  Area of Expertise: Cardiology/Interventional Cardiology
- Gordon Leingang, DO
  Area of Expertise: Emergency Medicine
- Bilal Ahmed, MD
  Area of Expertise: Endocrinology
- Jeffrey Orchard, MD
  Area of Expertise: Family Medicine
- Shelly Seifert, MD
  Area of Expertise: Family Medicine
- Steven Scherr, MD
  Area of Expertise: Family Medicine
- Derek Oldenburger, MD
  Area of Expertise: Gastroenterology
- Bipin Amin, MD
  Area of Expertise: Hematology/Oncology
- M. Roy Thomas, MD
  Area of Expertise: Hematology/Oncology
- Robert Tanous, DO
  Area of Expertise: Internal Medicine
- Earl Dunnigan, MD
  Area of Expertise: Nephrology
- Chatree Wongjirad, MD
  Area of Expertise: Neurology
- Ralph T. Dunnigan, MD
  Area of Expertise: Neurology
- Syed Hyder, MD
  Area of Expertise: Neurology
- Faiz Niaz, MD
  Area of Expertise: Neurology
- Chatree Wongjirad, MD
  Area of Expertise: Neurology
- Robert Bury, MD
  Area of Expertise: Obstetrics/Gynecology
- John Witt, MD
  Area of Expertise: Obstetrics/Gynecology
- Jerry Obritsch, MD
  Area of Expertise: Obstetrics/Gynecology
- Shannon Bradley, MD
  Area of Expertise: Obstetrics/Gynecology
- Jan Bury, MD
  Area of Expertise: Obstetrics/Gynecology
- Thomas Hutchens, MD
  Area of Expertise: Obstetrics/Gynecology
- Joan Connell, MD
  Area of Expertise: Pediatrics
- Carla Zacher, MD
  Area of Expertise: Pediatrics
- Kathryn Obregon, MD
  Area of Expertise: Pediatrics
- Siriwan Kriengkrairut, MD
  Area of Expertise: Pediatric Neurology
- Shelley Killen, MD
- James Hughes, MD
  Area of Expertise: Pulmonology
- Somsak Kriengkrairut, MD
  Area of Expertise: Pulmonology
- Monica Paulo, MD
  Area of Expertise: Pulmonology
- Nowarat Songsiridej, MD
  Area of Expertise: Rheumatology
- Sanjay Bangarulingam, MD
  Area of Expertise: Internal Medicine
- Lewis N. Cunningham, DO
  Area of Expertise: Urology
- Stan T. Diede, MD
  Area of Expertise: Cardiovascular Diseases, Internal Medicine
- John J. Hagan, MD
  Area of Expertise: Internal Medicine
- Jay R. Huber, DO
  Area of Expertise: Internal Medicine
- Keith R. Happel, MD
  Area of Expertise: Internal Medicine
- Jeffrey Hostetter, MD
  Area of Expertise: Family Practice
- Paul E. Jondahl, MD
  Area of Expertise; Family Practice
- Shelly Killen, MD
  Area of Expertise: Physical Medicine & Rehabilitation
- Mustafa Kathawala, MD
  Area of Expertise: Gastroenterology, Internal Medicine
- Kathleen Nordstrom, MD
  Area of Expertise: Radiation Oncology
- Julie M. Schwartz, MD
  Area of Expertise: Internal Medicine
- Luis Vilella, MD
  Area of Expertise: Physical Medicine & Rehabilitation
- Syed Zaidi, MD
  Area of Expertise: Internal Medicine
- Marny Hauge, PsyD
  Area of Expertise: Child & Adolescent Psychology
- Craig Degree, PhD
  Area of Expertise: Psychology
- Terri Hanson, PhD
  Area of Expertise: Psychology
- Niran Kotrapu, MD, FAAP, FRCP
  Area of Expertise: Pediatric & Neonatal Cardiology
- Amer Yar Khan, MD
  Area of Expertise: Internal Medicine
- Brian J. Hebert, MD
  Area of Expertise: Internal Medicine
- Robert G. Oatfield, MD
  Area of Expertise: Cardiology
- Cindy Kaye Sharp, MD
  Area of Expertise: Nephrology
- Elizabeth E. Sundberg, MD, PhD
  Area of Expertise: Nephrology
- Richard Arazi, MD
  Area of Expertise: Neurology

Staff Expertise

Dan McPherson, PharmD, BCNSP
Area of Expertise: Cardiology/Critical Care/Nutrition
18 years experience in clinical research

Deb McPherson, PharmD, BCNSP
Area of Expertise: Pediatrics/Neonatal Intensive Care/Nutrition
18 years experience in clinical research

Dawn Gronneberg, PharmD
Area of Expertise: Anticoagulation Services
6 years experience in clinical research

Julie Wetzstein, CCRC
6 years experience in clinical research
Kara Finneman, CCRC
5 years experience in clinical research

Sheri Hardy, LPN, CCRC
2 years experience in clinical research

Leinani Goergen, Research Secretary/Specialist

Joan Johnson, RPh
Area of Expertise: Oncology/Hospice
13 years experience in clinical research

Kenton Omvig, PharmD
Area of Expertise: Geriatrics/General Practice
6 years experience in clinical research

Carrie Sorenson, PharmD
Area of Expertise: Surgery/Infectious Disease
9 years experience in clinical research

Thoralf T. Thompson, MM, Business Development & Regulatory Specialist
1 year experience in clinical research

Holly Kohler, CRC II
1 year experience in clinical research

Patient Demographics

Characteristics of our patients include prominent northern European and Native American populations with a low drop-out rate and low incidence of communicable diseases. We also have the largest per capita diabetes population in the nation. Our service area encompasses central and western North Dakota, northern South Dakota, and eastern Montana. This area is made up of a population of approximately 200,000 individuals.

Other Information

Clinical Research Services has the option of using our own local Institutional Review Board or central IRBs for clinical trials. Our department personnel have experience in using Remote Data Entry.

Source:
Website: http://www.centerwatch.com/professional/pro508.html Retrieved: 07/19/05

Bismarck Cancer Center

Bismarck Cancer Center

Works in conjunction with St. Alexius, MedCenter One and Odyssee Research to execute clinical trials.

Source:
Phone Inquiry: June 24, 2005

Odyssey Research

Center Overview

Odyssey Research is a private clinical trial management organization dedicated to providing support in managing clinical trials for a world wide network of independent providers and health systems in the United States and abroad.

Our staff has a combined 150 years of experience in regulatory, case report management in Phase II, III, and IV clinical trials. The staff has established excellent rapport with study monitors, principal investigators, and study sponsors, providing courteous, accurate and confidential results. Over the past 20 years, the president, Tom Davis, PharmD, has been involved in over 160 clinical trials through Odyssey Research and previous positions held in healthcare facilities. The staff has the knowledge and background to coordinate and facilitate ancillary services with healthcare facilities to meet all protocol requirements.

We currently have Odyssey offices in North Dakota, Montana, South Dakota, Nebraska, Arizona, Idaho, Minnesota, Michigan, Texas, New Jersey, Virginia, South Carolina, Tennessee, British Columbia, Canada, Cordoba, Argentina and Beijing, China.

Clinical Research Experience

Our staff has been involved in research trials for 15 years under the direction of Tom Davis, PharmD. We have the talents and skills to conduct trials that meet the expectations of sponsors throughout the country and abroad. We have several clinical trials with the first patients enrolled world-wide, highest study enrollment, first add-on site to reach patient enrollment goals and have been recognized for best study location. We have the means to attract principal investigators to our team because we can provide the support required to successfully complete a study.

We have worked with the following Sponsors/CROs:

- Abbott Laboratories
- Access Medical Group
- Advance Magnetic
- Aeterna
- Amgen
- Anika Therapeutics, Inc.
- Aphton Corporation
- Astra Zeneca
- Aventis Pasteur
- Aventis Pharmaceuticals
- Bayer Corporation
- BioMedicine
- Boehringer Mannheim
- Bristol Meyer Squibb
- CATO Research
- Cell Therapeutics, Inc
- Covance
- DuPont
- Eli Lilly Research
- Endo Pharmaceuticals
- Eterna
- Favrille
- Frontier Pharmaceuticals
- GlaxoSmithKline
- Helsinn
- Hoffman - LaRoche
- Jannsen Pharmaceuticals
- Johnson & Johnson
- Kendle Pharmaceuticals
- Knoll Pharmaceuticals
- Maxim
- MedSearch
- Medi-Jet
- MTRA
- NDS
- Novartis Pharmaceuticals Corporation
- Novo Nordisk
- NPS Allelix, Corporation
- Omni Care Clinical Research
- Ortho BioTech
- Ortho McNeil Pharmaceuticals
- OSI Pharmaceutical
- Parexel International
- Pfizer, Inc.
- Pharma Research
- Pharmaco
- Pharmacia
- PPD Development
- Procter & Gamble
- Progenics
- Purdue Pharmaceuticals
- Quintiles, Inc.
- Roche
- Sandoz
- Scherring-Plough Corporation
- Searle
- Sepracor
- Serono, Inc.
- Shire Laboratories
- Smith Kline Beecham
- Solvay
- Takeda Pharmaceuticals America, Inc.
- Telik
- University of Washington
- Viropharma
- Watson Laboratories, Inc.
- Westat
- Wyeth Pharmaceuticals

Facility Description

We know we are the preferred site for research sponsors to place their trials, because:

- We have access to an extensive population base of compliant research subjects throughout the US and abroad.
- Our sites are located in strategic areas, easily accessible from major airports.
- Our main office in Bismarck is less than 10 minutes from the airport and major hotels.
- We offer centralized patient recruitment, regulatory, staff education, budget & contract, information technology support center and physician support & education systems.
- We have a highly motivated, dedicated staff with outstanding work ethics and values, putting the patient's safety first.
- Ours is an experienced staff, totally familiar with FDA requirements, IRB requirements and sponsor requirements. As a team, the staff can provide all the requirements from initiation, through the budget negotiations, CRF compliance, study closing and appropriate long term storage.
- Our staff has a variety of employment and education backgrounds to manage all protocol and patient requirements.
- The services we provide have tremendous community support which promotes success.
- The healthcare facilities in our network have various IRB approval requirements and Odyssey Research takes the guesswork out of IRB submission.
- Odyssey Research has the trained staff to work closely with the principal investigator and clinical staff to assure that the patient is treated with utmost respect and dignity. Because of our multiple sites, our coordinators are available for all patient follow up and patient hospitalizations to assure continuity and accuracy; thus, providing the significant link between the physician investigator and sponsor.
- Our offices are well within the heart of the medical complexes, allowing patients and investigators to count on consistent support.
- Each facility provides dedicated space and parking for visiting monitors and sponsor representative.

Investigator Experience

- We currently have over 250 independent investigators from 35 medical specialties conducting studies.
- We coordinate a large network of qualified, experienced physician investigators in 26 locations from more than 100 clinics.
- Our physicians are hand selected independent quality investigators.

Staff Expertise

Our staff of 70 Clinical Research Coordinators includes medical doctors, nurses, pharmacists and other medically trained staff, many whom are certified by the Association of Research Professionals or the Society of Clinical Research Professionals. Staff is located in nine states and five countries at 26 locations.

Source:
Website: http://www.centerwatch.com/professional/pro489.html#5 Retrieved: July 19, 2005

Odyssey Research Clinical Trial Specific Information

Breast Cancer:
Phase II Randomized, Double-blinded efficacy and safety of three doses of study drug administered orally in postmenopausal women with locally advanced or locally recurrent inoperable or progressive metastatic breast carcinoma following standard first line endocrine therapy

A randomized open label phase III study of study drug IV every 3 weeks versus Xeloda tablets twice daily for 2 weeks in 3 week cycles in patients with metastatic breast cancer progressing after taxanes and anthracycline therapy

A randomized placebo controlled trial of zoledronic acid for the prevention of bone loss in premenopausal and perimenopausal women with early stage breast cancer

A randomized double blind multicenter study to compare the efficacy and tolerability of fulvestrant versus exemestane in postmenopausal women with hormone receptor positive advanced breast cancer with disease progression after prior nonsteroidal aromatase inhibitor therapy

A randomized double blind placebo controlled study to evaluate study drug in the treatment of bone loss in subjects undergoing aromatase inhibitor therapy for nonmetastatic breast cancer

Correctol Cancer:
A randomized open label phase IIIb trial comparing two methods of Avastin based therapy for the first line treatment of metastatic colorectal cancer

A randomized open label controlled clinical trial of chemotherapy and Bevacizumab with and without Panitumumab in the first line treatment of subjects with metastatic colorectal cancer

Lung Cancer:
A randomized multicenter phase II study of taxanes/carboplatin/cetuximab or taxanes/carboplatin as first line treatment for patients with advanced/metastatic nonsmall cell lung cancer

A randomized multicenter phase II study of gemcitabine/carboplatin/cetuximab or gemcitabine/carboplatin as first line treatment for patients with advanced/metastatic nonsmall cell lung cancer

A phase II multicenter randomized clinical trial to evaluate the efficacy and safety of Avastin in combination with docetaxel or tarceva compared with docetaxel alone for the treatment of recurrent or refractory nonsmall cell lung cancer.

Ovarian Cancer:
Phase 3 randomized study of study drug in combination with Carboplatin versus Doxil as second line therapy in platinum refractory or resistant ovarian cancer

Lymphoma:
A multicenter open label nonrandomized phase II study of study drug in patients with relapsed or refractory nonhodgkins lymphoma

A phase III randomized double blind placebo controlled trial of study drug and GM-CSF versus placebo and GM-CSF following rituximab in subjects with follicular B-cell nonhodgkins lymphoma

Prostate Cancer:
A randomized open label study of study drug (vaccine) versus docetaxel and prednisone in patients with metastatic hormone refractory prostate cancer who are chemotherapy naïve

A randomized double blind placebo controlled multicenter efficacy and safety study of study drug for the prevention of bone fractures in men with prostate cancer on androgen deprivation therapy

Biliary Cancer:
Phase 3 multicenter single blind randomized study of study drug versus 5-FU plus leucovorin in subjects with advanced biliary tumors not amenable to conventional surgery

Anemia:
A pilot study to evaluate the response rate of Procrit at 80,000 units every three weeks in anemic patients with cancer not receiving chemotherapy

Leukemia:
A multicenter open label study of Nipent, Cytoxan, and Rituxan in patients with previously untreated or treated chronic lymphocytic leukemia

Melanoma:
A two stage trial of study drug in combination with weekly paclitaxel for treatment of patients with metastatic melanoma

Source:
Odyssey Research, 6/23/05

Trinity Health (Minot)

Trinity Health
On average, Trinity Health CancerCare has twenty clinical trials available. The trials are physician preference, but are primarily focused on lung and breast cancer. Trinity Health is tracking thirty-eight patients on follow-up and has eleven new patients since the start of 2005. Occasionally physicians contract through Odyssey Research for clinical trials.

Source:
Phone Inquiry: July 11, 2005

Dakota Cancer Institute (Fargo)

Dakota Clinic/Innovis Health

Dakota Cancer Institute has expanded its research capabilities by becoming members of the Cancer Trials Support Unit (CTSU). The CTSU is sponsored by the National Cancer Institute (NCI). Membership enables access to several Cooperative Group Phase III adult cancer treatment trials. The CTSU offers a large selection of trials for several adult tumor types. This enables Dakota Cancer Institute to choose trials best suited for our patient population.
Dakota Cancer Institute continues to work with Odyssey Research to offer a wide variety of Pharmaceutical Sponsored Trials. It is our goal to offer diverse trials that are either specifically disease oriented, specialized in a specific intervention, or multimodality treatments for all the major tumor types.

Research at Dakota Cancer Institute is concentrated on mostly breast, colon and lung cancers. These are the most prevalent.

Source:
Website: http://www.innovishealth.com/cancer_institute.asp Retrieved: July 21, 2005
Myra Huber—Dakota Caner Institute Research Coordinator Retrieved: July 21, 2005

Jamestown Hospital

Jamestown Hospital

No trials or research.

Source:
Phone Inquiry: July 11, 2005

St. Joseph's Hospital & Health Center (Dickinson)

St. Joseph's Hospital & Health Center

No trials or research.

Source:
Phone Inquiry: July 11, 2005

Mercy Medical Center (Williston)

Mercy Medical Center

No trials or research.

Source:
Phone Inquiry: July 11, 2005

Mercy Hospital of Devils Lake

Mercy Hospital of Devils Lake

No trials or research.

Source:
Phone Inquiry: July 11, 2005

Appendix

NORTH DAKOTA

CANCER BURDEN

In 2004, the American Cancer Society estimates that[1]

- 1,368,030 new cancer cases will be diagnosed in the United States, including 3,250 in North Dakota.
- 563,700 cancer deaths will occur in the United States, including 1,340 in North Dakota.

The average annual age-adjusted death rate for cancer per 100,000 persons[2]

North Dakota: 184.7 **National:** 199.8

Visit http://www.cdc.gov/cancer/npcr/index.htm — ***United States Cancer Statistics*** — for more information on top cancer sites by geographic area, race, and gender.

LUNG CANCER

In 2004, the American Cancer Society estimates that[1]

- 360 new cases of lung cancer will be diagnosed among men and women in North Dakota.
- 330 men and women will die of lung cancer in North Dakota.

The CDC National Center for Health Statistics provides the following death rates:

The average annual age-adjusted death rates for lung cancer per 100,000 persons, by race, 1997–2001[2,3]

	North Dakota	National
Overall	45.1	56.2
White	44.3	56.2
Black	-	65.2
Hispanic	-	24.9
Asian/Pacific Islander	-	28.2
American Indian/Alaska Native	100.3	36.3

BREAST CANCER

In 2004, the American Cancer Society estimates that[1]

- 540 new cases of breast cancer will be diagnosed among women in North Dakota.
- 100 women will die of breast cancer in North Dakota.

The CDC National Center for Health Statistics provides the following death rates:

The average annual age-adjusted death rates for breast cancer per 100,000 persons, by race, 1997–2001[2,3]

	North Dakota	National
Overall	25.9	27.0
White	25.9	26.4
Black	-	35.4
Hispanic	-	17.2
Asian/Pacific Islander	-	12.6
American Indian/Alaska Native	-	13.6

COLORECTAL CANCER

In 2004, the American Cancer Society estimates that[1]

- 360 new cases of colorectal cancer will be diagnosed among men and women in North Dakota.
- 140 men and women will die of colorectal cancer in North Dakota.

The CDC National Center for Health Statistics provides the following death rates:

The average annual age-adjusted death rates for colorectal cancer per 100,000 persons, by race, 1997–2001[2,3]

	North Dakota	National
Overall	19.7	20.8
White	19.6	20.3
Black	-	28.3
Hispanic	-	14.2
Asian/Pacific Islander	-	13.0
American Indian/Alaska Native	-	13.9

PROSTATE CANCER

In 2004, the American Cancer Society estimates that[1]

- 540 new cases of prostate cancer will be diagnosed among men in North Dakota.
- 70 men will die of prostate cancer in North Dakota.

The CDC National Center for Health Statistics provides the following death rates:

The average annual age-adjusted death rates for prostate cancer per 100,000 men, by race, 1997–2001[2,3]

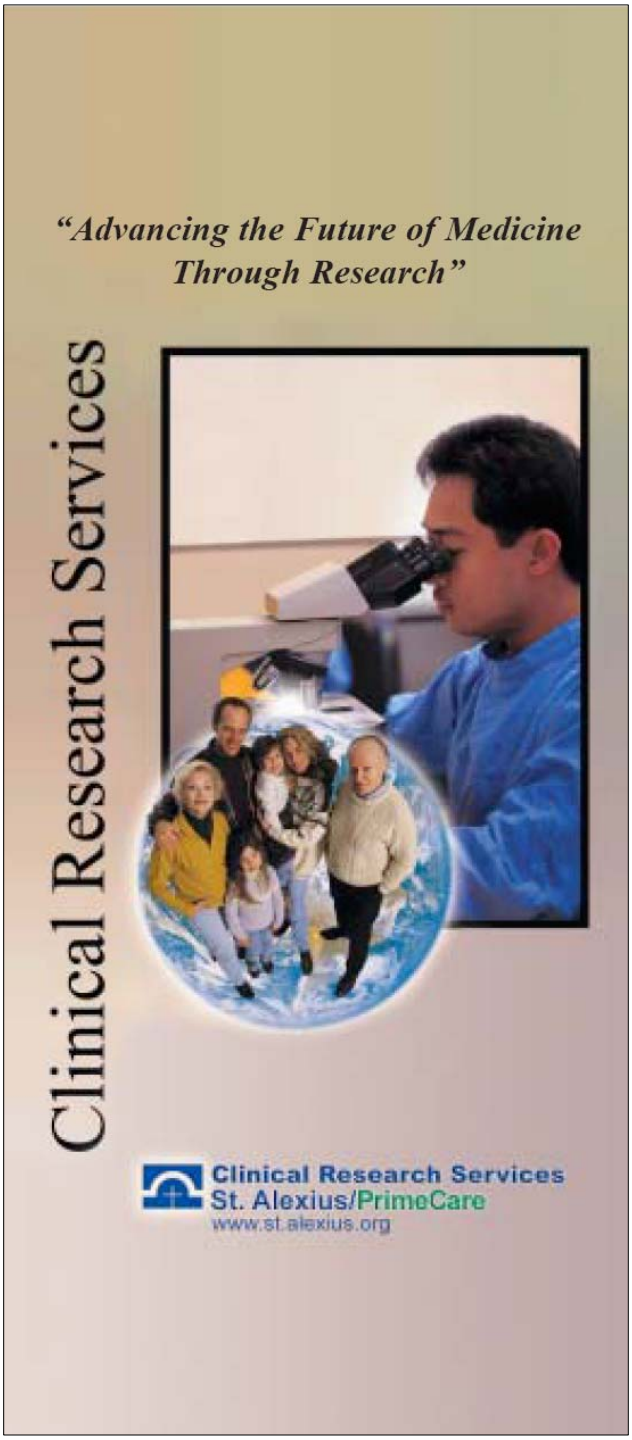
	North Dakota	National
Overall	32.4	31.5
White	32.6	28.8
Black	-	70.4
Hispanic	-	23.6
Asian/Pacific Islander	-	13.0
American Indian/Alaska Native	-	20.2

[1] Source: American Cancer Society Facts and Figures, 2004. Estimates exclude more than a million cases of basal and squamous cell skin cancers and *in situ* cancers, except urinary bladder, that will be diagnosed in 2004. Lung cancer rates include bronchus cancer. State death totals were rounded to nearest 10.

[2] Source: Centers for Disease Control and Prevention (CDC) National Center for Health Statistics, vital statistics data, underlying cause of death, 1997–2001. Death rates are per 100,000 and are age-adjusted to the 2000 U.S. standard population.

[3] Hyphens represent suppression of rates when there were 75,000 or fewer persons in the denominator or 20 or fewer deaths in the numerator.

St. Alexius Clinical Research Brochure



The mission of Clinical Research Services is to advance the future of medicine by providing research opportunities for participants, physicians, our community and sponsor organizations. Our comprehensive clinical expertise, innovative approach and high quality are demonstrated by fostering relationships through integrity, teamwork, and excellent customer service.

Clinical Research Services
St. Alexius/PrimeCare

Medical Arts Plaza
810 E. Rosser Ave, Suite 202
Bismarck, ND 58501

Tel: 701-530-6950
Fax: 701-530-6970
www.st.alexius.org/clinical_research
www.centerwatch.com/xInresearch

Who We Are

Clinical Research Services is a department within St. Alexius Medical Center in Bismarck, ND. We are fully dedicated to providing research support services to physicians within our region and the valued patients they serve.

St. Alexius Medical Center is a tertiary care facility affiliated with PrimeCare, a health group which combines the most experienced, trusted, and proven medical leaders in the area. PrimeCare is comprised of a network, which includes over 150 physicians in private and institutional practice, including: St. Alexius Medical Center, Mid Dakota Clinic, PC, Heart & Lung Clinic, and other affiliated area physicians.

Our clinical research team is committed to providing:

- *Rapid study start-up*
- *Pro-active patient enrollment*
- *Highly experienced principal investigators*
- *Initial training and continuing education for all support personnel*

Experience

Clinical Research Services has been involved in clinical research since 1987. Our professional staff has more than 78 years of combined experience in clinical trials. We are committed to providing outstanding service to ensure the success of every project.

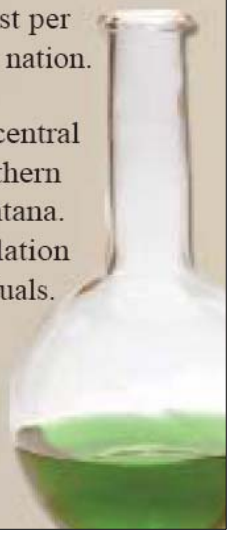
Our involvement in inpatient and outpatient phase II-IV clinical research studies has contributed substantially to the development of new drugs and treatments. We have experience in the following areas:

- *Oncology*
- *Cardiology*
- *Pulmonology*
- *Pediatrics*
- *Internal Medicine*
- *Psychiatry*
- *Women's Health*
- *Men's Health*
- *Rheumatology*
- *Neurology*

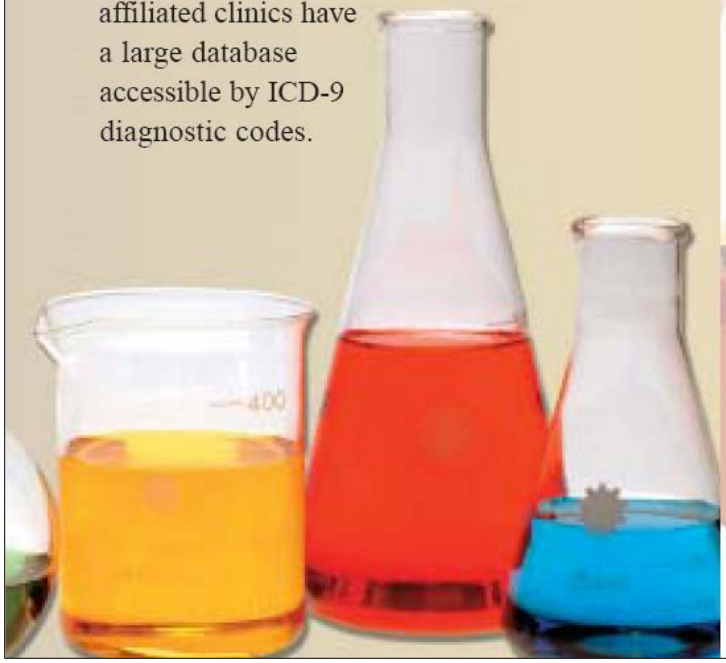
Patient Demographics

Characteristics of our patients include prominent northern European and Native American populations with a low drop-out rate and low incidence of communicable diseases. We also have the largest per capita diabetes population in the nation.

Our service area encompasses central and western North Dakota, northern South Dakota, and eastern Montana. This area is made up of a population of approximately 200,000 individuals.



Clinical Research Services is a department within St. Alexius Medical Center, which is a 308-bed, JCAHO-accredited facility with a Level II Trauma Center. Clinical Research Services is counted among St. Alexius specialty clinics, which are Neonatology, Nephrology, Pediatric Neurology, Neurosurgery, Physical medicine and Rheumatology, as well as other clinical services including The Center for Integrated Medicine (acupuncture, chiropractic, neuro/biofeedback and primary care), Great Plains Rehabilitation (orthotics, prosthetics and DME) and a sleep lab also benefit from Clinical Research Services. The medical complex is equipped with CT, MRI, DEXA scanners, a state-of-the-art radiotherapy Cancer Center, an outpatient hemodialysis and peritoneal dialysis center, and regional laboratory services. It also offers full electrophysiologic and interventional cardiology labs. St. Alexius Medical Center and affiliated clinics have a large database accessible by ICD-9 diagnostic codes.



Our reputation for accuracy, timeliness and dependability stands above the rest as evident by our repeated research endeavors with the following sponsors and CRO's:

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