

North Dakota INBRE

STUDENTS ARE THE FUTURE



WHAT IS INBRE

- NIH PROGRAM TO BUILD RESEARCH INFRASTRUCTURE
- ADMINISTRED BY NATIONAL CENTER FOR RESEARCH RESOURCES (NCRR)
- 5 YEAR, 15 MILLION DOLLAR PROGRAM
- CURRENTLY IN ITS FINAL YEAR OF THE FUNDING CYCLE

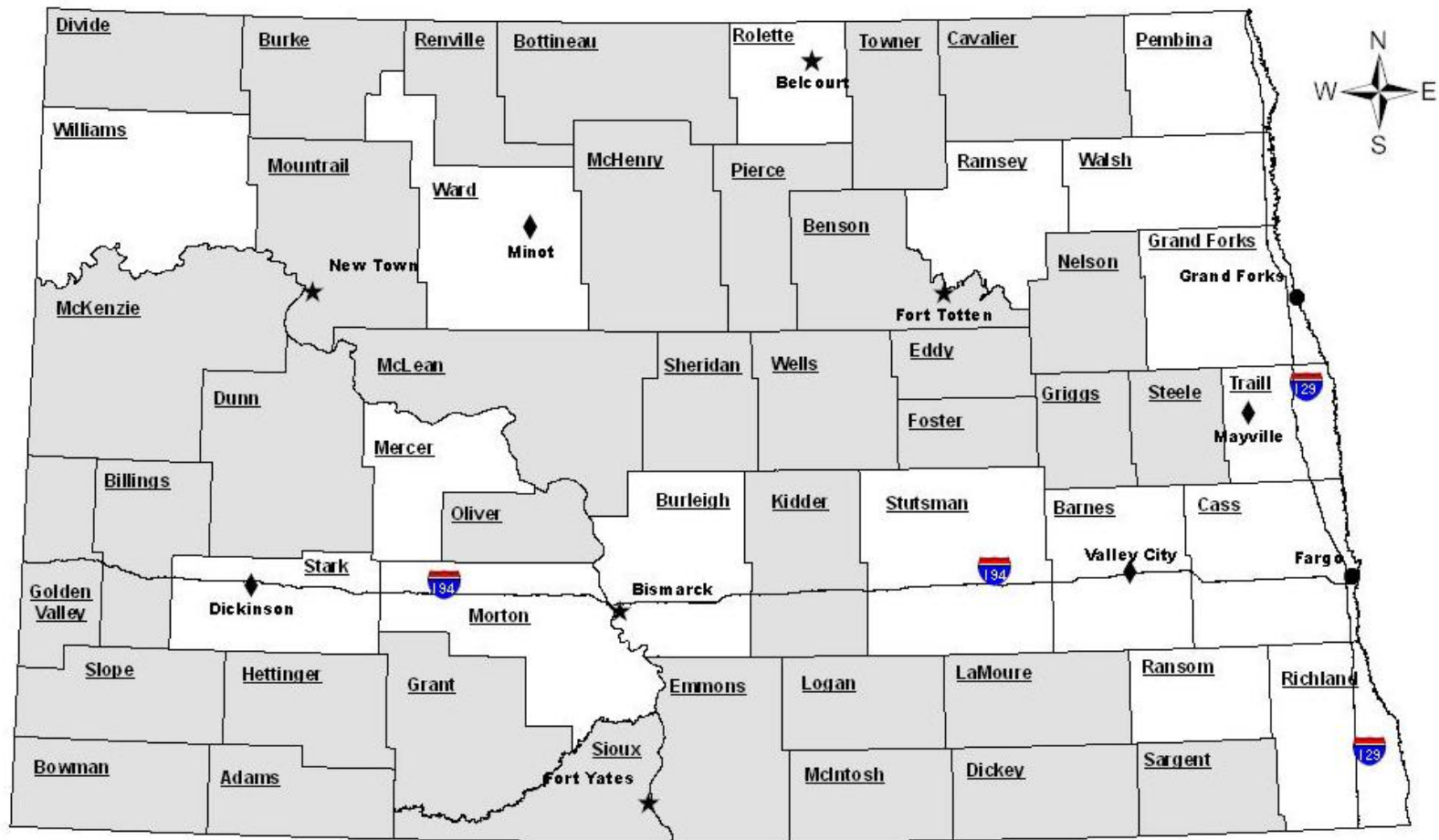
MAJOR GOAL OF ND INBRE

- ESTABLISH UNDERGRADUATE RESEARCH PROGRAMS AT THE STATE'S PRIMARY UNDERGRADUATE INSTITUTIONS AND TRIBAL COLLEGES
- TO PRIME THE STUDENT PIPELINE FOR THE FUTURE HEALTH RELATED WORK FORCE OF NORTH DAKOTA

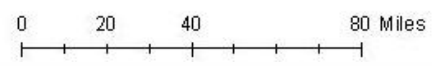
THE UNDERGRADUATE STUDENT PIPELINE

- GRADUATE SCHOOL IN HEALTH RELATED PROFESSIONS
 - BASIC AND CLINICAL RESEARCH, MEDICINE, NURSING, BEHAVIORAL, DENTAL, ALLIED HEALTH
- TECHNOLOGY WORKFORCE OF NORTH DAKOTA
 - BIOTECHNOLOGY, COMPUTER TECHNOLOGY, HOME LAND SECURITY

THE CHALLENGE



- ◆ Primarily Undergraduate Institutions
- ★ Tribal Colleges
- Research Intensive Institutions
- Frontier Counties



ARE WE SUCCEEDING?

- PRIOR TO INBRE
 - NO UNDERGRADUATE RESEARCH AT THE STATE'S PUIs
 - NO UNDERGRADUATE RESEARCH AT THE TCUs WITHIN NORTH DAKOTA
 - NO FACILITIES FOR RESEARCH AT THE PUIs OR TCUs
 - NO JOURNAL LIBRARY RESOURCES AT THE PUIs

MINOT STATE UNIVERSITY

- 5 NEW UNDERGRADUATE RESEARCH LABORATORIES (equipped by INBRE)
 - Dr. Chris Beachy - Salamander
 - Dr. Ursula Schittko - Honey Bees
 - Dr. Chris Keller - Plant Development
 - Dr. Mikail Bobylev - Organic Synthesis
 - Dr. Heide Super - Molecular Biology
 - Dr. Ryan Winburn – Metal Analysis
 - FBCC and TMCC

DICKINSON STATE

- Recent Renovation of a Research Laboratory Dedicated to Undergraduate Research
 - Cell Culture, PCR, Protein Analysis, Image Analysis Equipped by INBRE
- Investigator
 - Dr. Lynn Burgess – Connexin Gene Expression

VALLEY CITY STATE

- Two Laboratories For Undergraduate Research. Renovated and Equipped by INBRE.
- Investigators
 - Dr. Andre DeLorme - Aquatic Biology
 - Dr. Hilde van Gijssel - Developmental Biology
 - Dr. Jerzy Bilski - Effects of Fly Ash

MAYVILLE STATE

- Renovation of a Laboratory Dedicated to Undergraduate Research.
 - Renovated and Equipped by INBRE
- Investigators
 - Dr. Tom Gonnella - Enzyme Kinetics
 - Dr. Khwaja Hossain - Agriculture

TURTLE MOUNTAIN

- Establishment of a Genetics Laboratory for Undergraduate Research
- Establishment of an IRB to Support Human Subjects Research
- Investigator
 - Dr. Lyle Best - Pregnancy and Hypertension

CANKDESKA CIKANA

- Initiated Introduction to Research Course for NA Students.
 - Past Human Research Abuses
 - Current Procedures for Prevention
 - Participants fulfill IRB Training
 - Database and Survey Techniques
- Expansion to all NA communities in ND including Adult Continuing Education

STUDENTS AS PRODUCTS

- End of INBRE Year 04
 - 195 Undergraduate Students Directly Involved in INBRE-Sponsored Research
- End of Year 03
 - 64 Graduates of INBRE
 - 32 in Post Graduate Education
 - 13 Employed in Biotechnology or Health Field
 - 19 Are Being Located by Evaluation
- Peer Reviewed Publications in Year 04

A HALLMARK OF SUCCESS

Every Undergraduate in the State's PUI's or TCU's Desiring and Able to Participate in Undergraduate Research Have Been Afforded that Opportunity

THE NDSU PARTNER

- Dr. Donald Schwert - Program Coordinator
- Dr. Marinus Otte - Eco of Heavy Metals
- Donna Jacob - Metals and Plants
- Metal Mentors
- Core Facility for Metal Analysis
- Core Facility for Biomedical Training
- Research Office

WHERE WE ARE GOING

- PRESERVE CURRENT SUCCESS
- ENHANCE UNDERGRADUATE RESEARCH AT UND AND NDSU
- EXPAND INDIANS INTO MEDICINE K12 PROGRAM INTO BIOMEDICAL AND BEHAVIORAL RESEARCH
- COMMUNITY BASED PARTICIPATORY RESEARCH

INBRE GUARANTEE

We advance to future employers or programs that any student in ND showing significant participation in INBRE research will be competitive compared to any student on a national level.