



Center for
Rural Health

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Preliminary Data from a Northern Plains Indian Mental Health Project

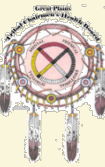
Jacqueline S. Gray, PhD,
(Choctaw/Cherokee)

February 28, 2011



Presented at the
1st Annual Behavioral Health Conference
Great Plains Tribal Chairs Health Board
Behavioral Health Center of Excellence

*Connecting resources and knowledge to strengthen
the health of people in rural communities.*



Center *for* Rural Health

- Established in 1980, at The University of North Dakota (UND) School of Medicine and Health Sciences in Grand Forks, ND
- One of the country's most experienced state rural health offices
- UND Center of Excellence in Research, Scholarship, and Creative Activity
- Focus on:
 - Education, Training, and Resource Awareness
 - Community Development and Technical Assistance
 - Native American Health
 - Rural Health Workforce
 - Rural Health Research
 - Rural Health Policy
 - Program Evaluation
- Web site: <http://ruralhealth.und.edu>

Background

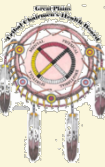
- Depression, anxiety, and substance abuse are among the major health problems of American Indians
- Clinical assessments for these disorders have not been validated with American Indians
- These disorders may have different symptoms in American Indians

Background

- There may be mediating factors
 - Historical trauma
 - Cultural identification
 - Quality of life
 - Socioeconomic status
 - Health status

Study Objectives

- Collect normative data on commonly used clinical mood disorder assessments
- Determine the validity of measures to detect specific mood disorders in Northern Plains Indians
- Determine the reliability of measures with Northern Plains Indians
- Assess differences between those using substances and those not
- Determine if spiritual, traditional, and cultural practices may provide a protective factor



Approval Process

- Great Plains Tribal Chairs Health Board (GPTCHB) – Resolution 11/06
- The University of North Dakota Institutional Review Board (UND IRB# 200704-294) 03/07, 05/07
- Aberdeen Area IHS Institutional Review Board (AAIRB#: 7-A-7AA) 08/06
- Resolution from each participating tribe
- Letter from each Service Unit CEO
- Completed: 07/08

Psychological Assessments

- Beck Anxiety Inventory (BAI)
- Beck Depression Inventory-II (BDI-II)
- Beck Hopelessness Scale (BHS)
- Center for Epidemiological Studies-Depression Scale (CES-D)
- Tri-Ethnic Center for Research-Depression Scale (TEDS)
- Symptom Checklist-90-Revised (SCL-90-R)

Other Measures

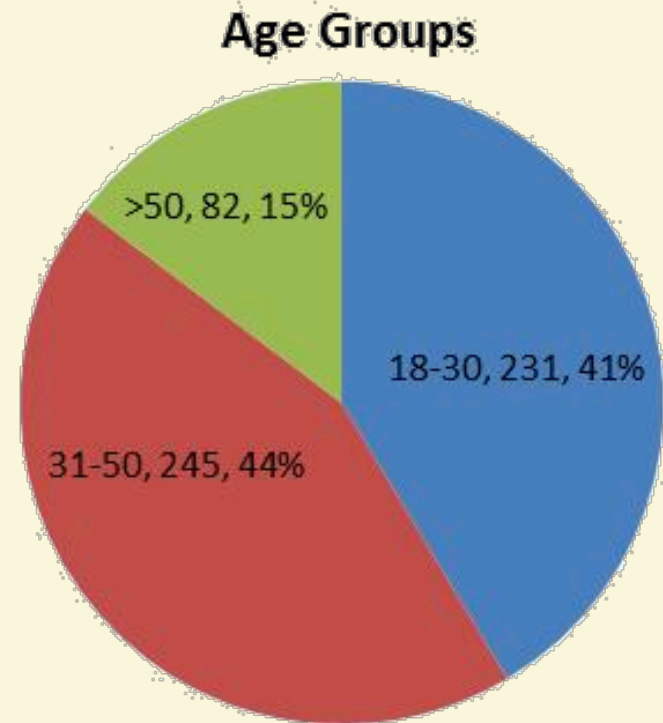
- Demographic/health history questions
- Clinical Diagnosis Code (DSM-IV)
- Northern Plains Bicultural Inventory-Revised (NPBI-R)
- Quality of Life Inventory (QOLI)
- Rumination scale
- Substance Use Subtle Screening Inventory-III (SASSI-3)
- Substance use questions

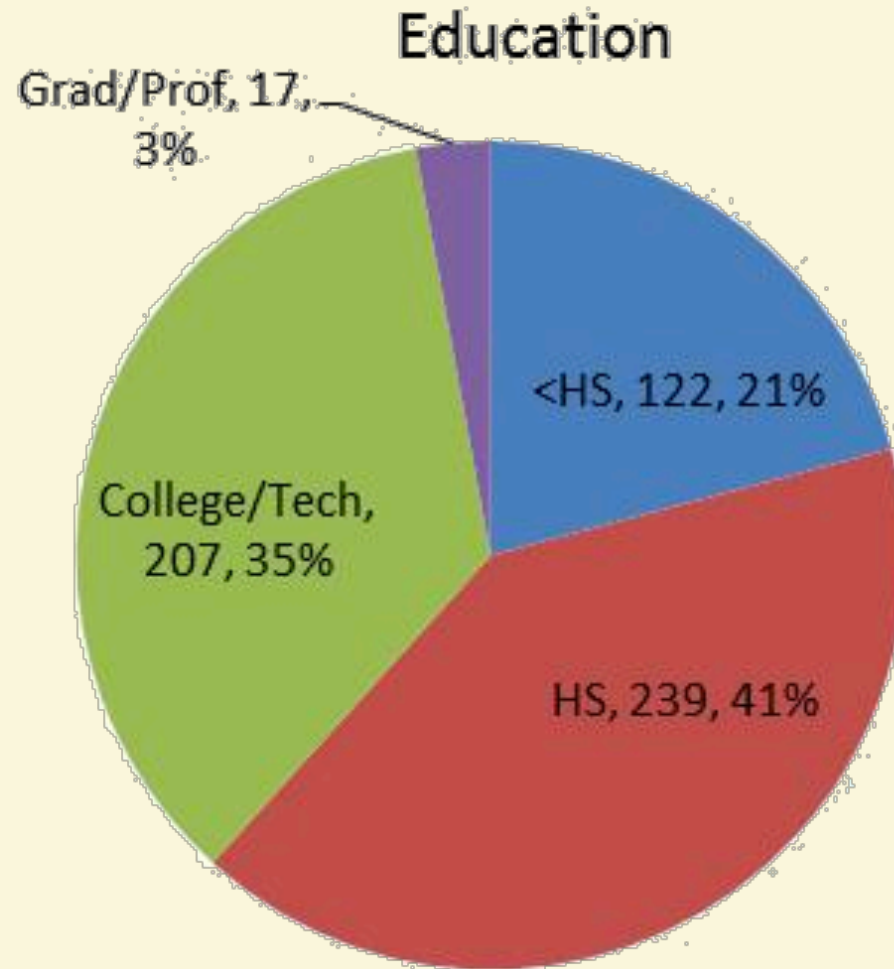
Research Design

	No MH DX N=100		Anxiety DX N=100		Depression DX N=100	
Male N=300 Actual N=233	No SA N=50	SA N=50	No SA N=50	SA N=50	No SA N=50	SA N=50
Female N=300 Actual N=360	No SA N=50	SA N=50	No SA N=50	SA N=50	No SA N=50	SA N=50

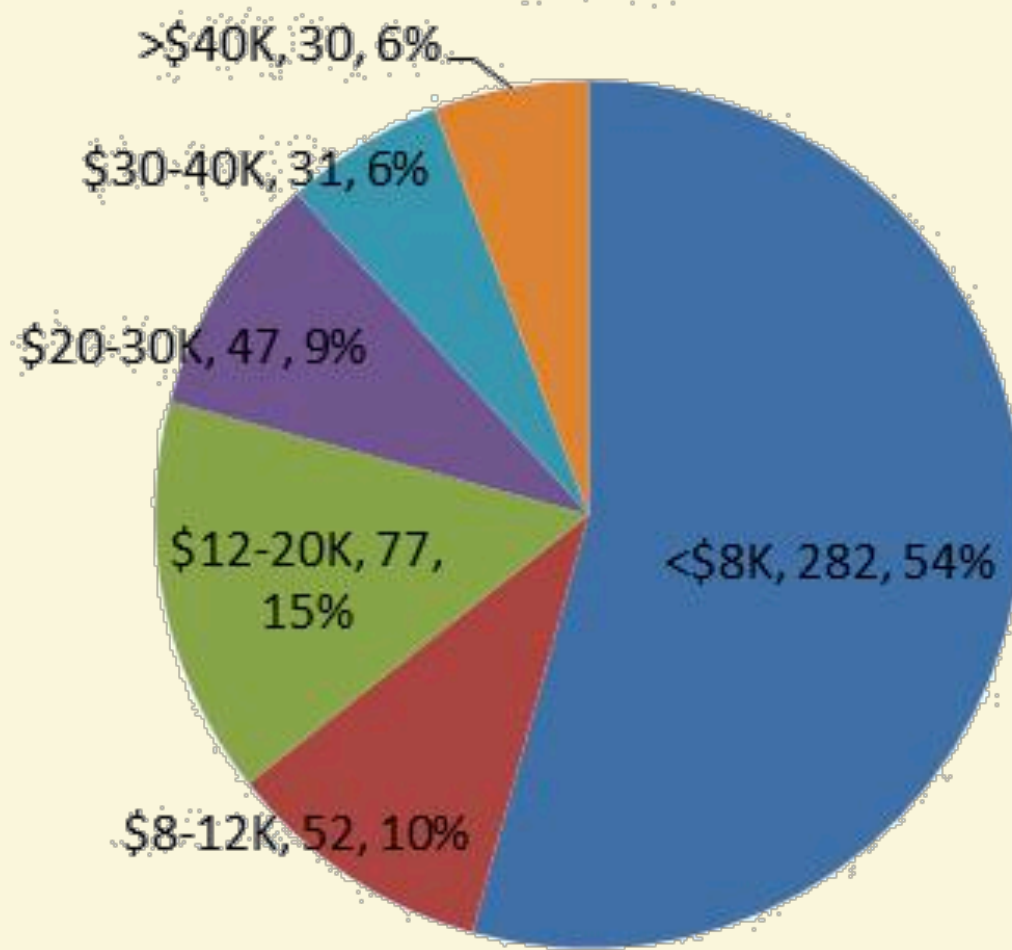
Demographics

- Total N=600
 - Male N=233
 - Female N=360
 - Missing N=7
- Age
 - Range 18-80
 - Mean 36.2 ± 12.7





Income



Mental Health Diagnosis

• Depression	N=149	25.1%
• Anxiety	N=134	22.6%
• Substance abuse	N=144	24.3%
• Other	N= 7	1.2%
• No diagnosis	N=323	54.5%
• Co-morbid (anx/dep)	N= 81	13.7%
• Co-morbid (anx & AOD)	N= 52	8.8%
• Co-morbid (dep & AOD)	N= 60	10.1%

Mental Health Diagnosis

Diagnosis	Male		Female		Total	
	N	%	N	%	N	%
Depression	40	17.2	109	30.3	149	24.8
Anxiety	38	16.3	96	26.7	134	22.3
Substance Abuse	72	30.9	72	20.0	144	24.0
Other	4	1.7	3	0.8	7	1.2
No Diagnosis	131	56.2	192	53.3	323	53.8
Comorbid (A&D)	18	7.7	63	14.8	81	13.5
Comorbid (A&SA)	18	7.7	34	9.4	52	8.7
Comorbid (D&SA)	23	9.9	37	10.3	60	10.0

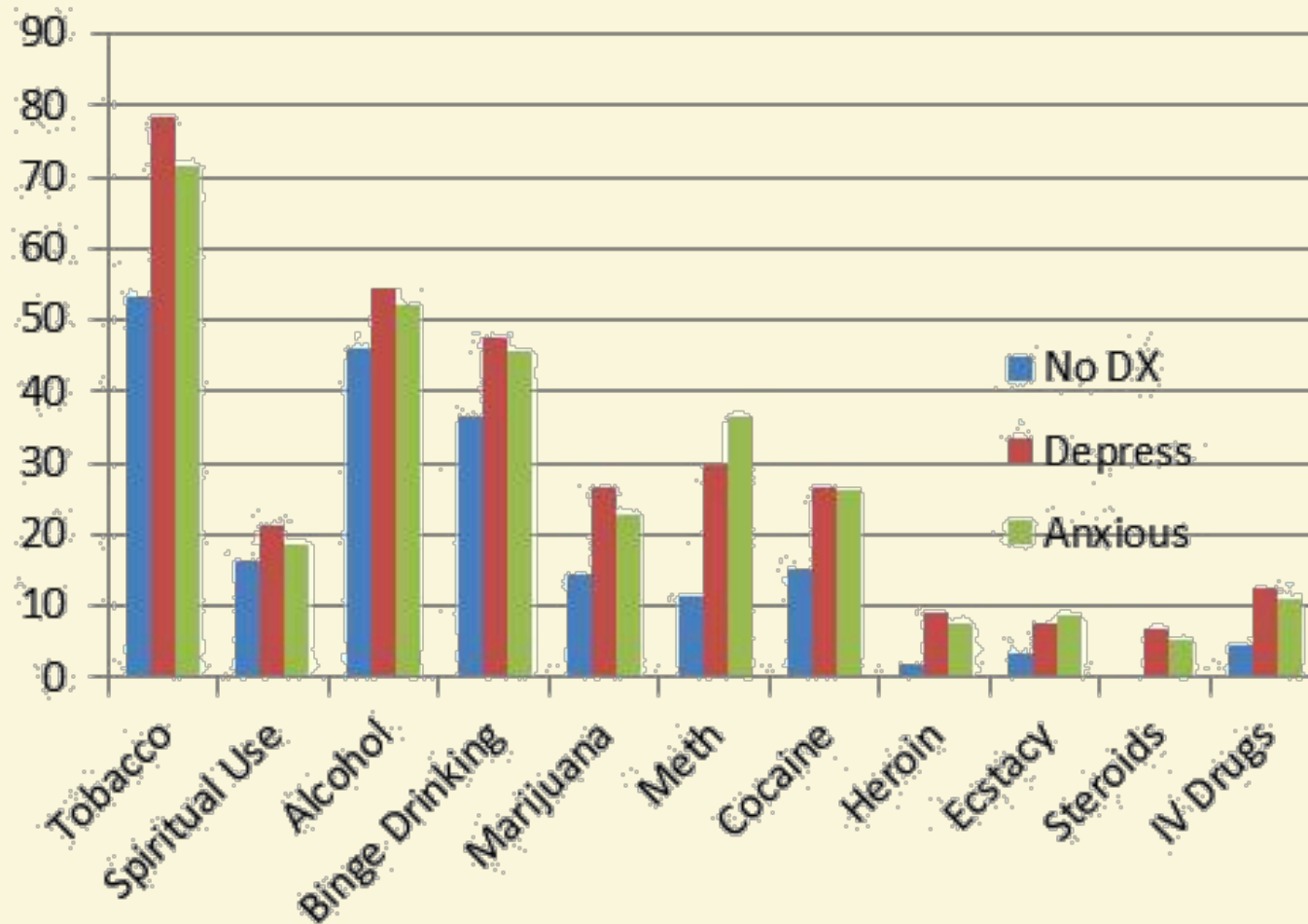
Substance Usage

Substance	Total (N= 600)		Male (N=233)		Female (N=360)	
	N	%	N	%	N	%
Tobacco (30 da)	386	65.3%	161	69.7%	224	62.7%
For spiritual purposes	121	20.6%	50	21.6%	71	20.1%
Alcohol (30 da)	306	52.0%	151	65.7%	154	43.4%
Binge (>4 drinks)	255	43.6%	130	56.8%	124	35.1%
Marijuana (30 da)	132	22.4%	73	31.6%	58	16.3%
Methamphetamine (Life)	122	20.8%	48	21.1%	73	20.6%
Cocaine (Life)	128	20.0%	55	23.8%	63	17.7%
Ecstasy (Life)	30	5.1%	15	6.6%	15	4.2%
Heroin (Life)	22	3.8%	10	4.4%	12	3.4%
Steroids (Life)	16	2.7%	8	3.5%	8	2.3%
Illegal IV drugs (Life)	43	7.4%	23	10.3%	19	5.4%
Peyote (30 da)	14	2.4%	9	3.9%	5	1.4%
For spiritual purposes	16	2.7%	8	3.5%	8	2.3%

Substance Use by Age Group

	18-30 years (N=176)		31-50 years (N=206)		>50 years (N=64)	
Substance Usage	N	%	N	%	N	%
Tobacco (30 da)	124	68.0%	131	63.9%	33	51.6%
For spiritual purposes	27	15.3%	41	20.1%	10	16.1%
Alcohol (30 da)	104	59.4%	115	55.8%	17	27.4%
Binge (>4 drinks)	87	49.4%	100	48.8%	13	21.7%
Marijuana (30 da)	50	29.4%	41	19.9%	6	9.7%
Methamphetamine (Life)	34	19.4%	49	23.7%	6	9.7%
Cocaine (Life)	42	23.9%	41	19.9%	5	8.1%
Ecstasy (life)	18	10.3%	4	2.9%	0	0.0%
Heroin (life)	4	2.3%	9	4.3%	0	0.0%
Steroids (Life)	1	0.6%	8	3.9%	1	1.6%
Illegal IV drugs (life)	12	6.9%	14	6.8%	2	3.3%
Peyote (30da)	1	0.6%	7	3.5%	0	0.0%
For spiritual purposes	2	1.1%	5	2.5%	1	1.6%

Substance Use by Diagnosis



Depression/Anxiety Assessments

	N	Mean	SD	Min	Max
BAI	592	9.8	11.3	0	63
SCL-Anx	588	3.5	5.4	0	27
BDI-II	589	11.5	11.4	0	56
BHS	586	5.2	4.5	0	20
CES-D	592	16.8	10.4	0	54
TEDS	590	11.2	3.9	7	21
SCL-Dep	589	11.6	11.0	0	49

Depression/Anxiety Assessments

	MALE (N=231)				FEMALE (N=357)			
	Min	Max	Mean	SD	Min	Max	Mean	SD
BAI	18	68	35.5	11.5	16	80	36.6	13.3
SCL-Anx	0	23	3.0	4.8	0	49	13.2	11.6
BDI-II	0	52	9.5	10.3	0	56	12.7	11.9
BHS	0	20	5.2	4.3	0	20	5.2	4.7
CES-D	0	53	14.9	10.0	0	54	18.1	10.5
TEDS	0	49	9.1	9.6	0	49	13.2	11.6
SCL-Dep	7	21	10.5	3.5	7	21	11.8	4.0

Depression/Anxiety Assessments

	18-30 Years (N=230)				31-50 Years (N=245)				>50 Years (N=81)			
	Min	Max	Mean	SD	Min	Max	Mean	SD	Min	Max	Mean	SD
BAI	0	63	8.9	10.8	0	58	10.6	11.8	0	45	9.9	11.4
SCL-Anx	0	24	3.3	5.2	0	27	4.0	5.8	0	24	3.1	4.8
BDI-II	0	52	11.0	11.4	0	56	11.9	11.7	0	43	11.7	11.8
BHS	0	20	5.2	4.2	0	20	5.2	4.9	0	19	5.5	4.9
CES-D	0	54	16.3	10.3	0	53	17.4	10.3	0	52	17.3	11.8
TEDS	0	44	11.1	10.4	0	49	12.1	11.5	0	49	12.9	11.8
SCL-Dep	7	21	10.8	3.9	7	21	11.7	3.9	7	21	11.4	3.8

Symptom Checklist Scales

	N	Mean	SD	Min	Max
Global Severity Index (GSI)	592	68.9	64.0	0	314
Somatization (G-SOM)	592	9.8	9.1	0	47
Obsessive-Compulsive (G-OCD)	591	9.1	8.5	0	40
Interpersonal Sensitivity (G-IPS)	589	6.9	7.1	0	34
Depression (G-DEP)	589	11.6	11.0	0	49
Anxiety (G-ANX)	588	3.5	5.4	0	27
Hostility (G-HOS)	588	4.6	5.0	0	24
Paranoia (G-PAR)	589	4.7	4.8	0	24
Psychoticism (G-PSY)	589	5.3	6.8	0	39



Symptom Checklist Scales



	MALE (N=231)				FEMALE (N=357)			
	Min	Max	Mean	SD	Min	Max	Mean	SD
SCL-GSI	0	291	61.5	59.4	0	314	73.6	66.5
SCL-Somatization	0	39	8.61	8.3	0	47	10.5	9.5
SCL-Obsessive Compulsive	0	40	8.5	8.1	0	40	9.5	8.7
SCL-Interpersonal Sensitivity	0	30	5.9	6.5	0	34	7.5	7.4
SCL-Depression	0	49	9.1	9.6	0	49	13.2	11.6
SCL-Anxiety	0	23	3.0	4.8	0	27	3.9	5.8
SCL-Hostility	0	24	4.5	5.0	0	22	4.6	5.0
SCL-Paranoia	0	22	4.5	4.5	0	24	4.8	4.9
SCL-Psychoticism	0	32	5.1	6.4	0	39	5.4	7.0

CR Symptom Checklist Scales



	18-30 Years (N=231)				31-50 Years (N=244)				>50 Years (N=78)			
	Min	Max	Mean	SD	Min	Max	Mean	SD	Min	Max	Mean	SD
SCL-GSI	0	285	65.3	59.8	0	314	73.1	67.6	0	269	68.7	65.2
SCL-Somatization	0	42	8.4	8.1	0	47	10.9	9.9	0	37	10.4	9.2
SCL-Obsessive Compulsive	0	40	9.1	8.2	0	39	9.3	8.6	0	40	8.9	9.0
SCL-Interpersonal Sensitivity	0	31	6.4	6.6	0	34	7.4	7.4	0	29	6.8	7.2
SCL-Depression	0	24	3.3	5.2	0	49	12.1	11.4	0	49	12.9	11.8
SCL-Anxiety	0	24	3.3	5.2	0	27	4.0	5.8	0	24	3.1	4.8
SCL-Hostility	0	20	5.1	5.0	0	24	4.5	5.1	0	18	3.3	4.0
SCL-Paranoia	0	20	4.6	4.5	0	24	4.7	4.8	0	21	4.9	5.2
SCL-Psychoticism	0	30	5.1	6.4	0	39	5.6	7.2	0	26	5.3	6.5

SASSI-III Scales

Scale	N	Mean	SD	Min	Max
Face Valid Alcohol	544	8.2	9.1	0	59
Face Valid Other Drug	537	5.3	9.1	0	42
Symptoms	559	5.0	3.3	0	11
Obvious Attributes	562	4.8	2.3	0	11
Subtle Attributes	562	3.1	1.4	0	7
Defensiveness	562	5.0	2.0	0	10
Supplemental Addiction Measure	562	7.1	2.2	1	13
Family Vs. Control	562	8.1	2.3	0	14
Correctional	562	5.8	3.1	0	14
Random Answering Pattern	561	1.0	1.1	0	5

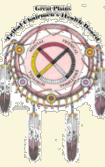
Other Scales

Assessment	N	Min	Max	Median	Mean	SD
Alcohol & Other Drugs	595	5	71		23.3	8.7
American Indian Cultural Identity	591	12	56	38	37.6	8.1
European American Cultural Identity	594	16	41	30	29.8	6.8
Rumination Scale	593	0	30		8.1	7.2
Mean Rumination	593	0	3		0.8	0.7

Research in Indian Country

An innovative program at the University of North Dakota is training students to conduct ethical research with native populations and nurturing the next generation of scientists — many of whom are Native American themselves.

From left to right, students Paula Carter, Sarita Eastman and Sierra Davis are members of the Native Health Research Team organized by Dr. Jacque Gray (in blue jacket) at the University of North Dakota in Grand Forks, N.D.



Training for American Indians

- The University of North Dakota
 - Doctoral Graduate Research Assistant
 - Angie Gillis, MHA Nation, New Town, ND (Clinical Psychology)
 - Julii Green, Cherokee/Blackfeet, San Diego, CA (Clinical Psychology)
 - Masters Graduate Research Assistants
 - Kyle Hill, Turtle Mountain Chippewa, Belcourt, ND (Clinical Psychology)
 - Erin Martin, Turtle Mountain Chippewa, Grand Forks, ND (Counseling Psychology)
 - McNair Scholar & SMHS Undergraduate Fellow
 - Sierra Abe, MHA Nation, Hazen, ND (Psychology/Political Science/Non-Profit)



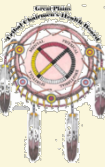
Summer Undergraduate Research Fellows 2009

- **Sierra Abe Davis (Mandan, Hidatsa, Arikara Nation)**
 - ✓ Psychology/Indian Studies/Non-Profit Leadership, Junior
 - ✓ McNair Scholar
 - ✓ Poster: An Evaluation of GoodHealth TV
- **Waynita Chaske (Spirit Lake Nation)**
 - ✓ Cankdeska Cikana Community College, Freshman
 - ✓ INMED Pathways
- **Rani Howard (Spirit Lake Nation)**
 - ✓ Cankdeska Cikana Community College, Freshman
 - ✓ INMED Pathways



Summer Undergraduate Research Fellows 2010

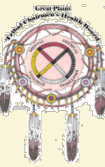
- Sarita Eastman (Sisseton-Wahpeton Oyate)
 - ✓ Psychology, Sophomore
 - ✓ Poster: Role of Spirituality in Mental Illness in Northern Plains Native Americans
- Melissa Wheeler (Diné)
 - ✓ Psychology, Junior
 - ✓ Poster: Incidence of Alcohol & Other Drug (AOD) Use by Northern Plains Indians vs. U.S. General Population
- Michael Mudgett (Spirit Lake Nation)
 - ✓ Psychology, Sophomore
 - ✓ Poster: The Relationship of Rumination to Anxiety, Depression, & Substance Use Among Northern Plains Indians
- Jason Champagne (Red Lake Band of Chippewa)
 - ✓ Community Nutrition, Senior
 - ✓ McNair Scholar
 - ✓ Poster: Pre- and Post-Colonial Diet Analysis of the Northern Plains Tribes



Current American Indian Students

➤ Undergraduate Research Assistants

- ✓ Sierra Abe, Mandan Hidatsa Arikara Nation, Hazen, ND, Senior (Psychology/Political Science/Non-Profit)
- ✓ Sarita Eastman, Sisseton-Wahpeton Oyate, Sisseton, SD, Junior (Psychology)
- ✓ Melissa Wheeler, Diné, Senior Round Rock, AZ (Psychology)
- ✓ Michael Mudgett, Spirit Lake Nation, Junior, Fort Totten, ND (Psychology)



Other Research Assistants

➤ Standing Rock Sioux Tribe

- ✓ Yvonne Hodgkiss, Sitting Bull College, Fort Yates, ND (Education, Research Assistant)
- ✓ Alvonnie Iron Thunder, University of Mary, Bismarck, ND (Social Work, Research Assistant)

➤ Pine Ridge

- ✓ Romaine Tobacco, Pine Ridge, SD (Nursing, Research Assistant)

➤ Faculty

- ✓ Kim Cowden, Assistant Professor in Communications in Indian Studies/Health Focus

Funded by

- National Institute of Drug Abuse



- Indian Health Service



- National Center for Research Resources



A Special “Thank you” to:

- Dr. Donald Sens, INBRE PI



- Dr. Marilyn G. Klug, biostatistician





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Contact us for more information!

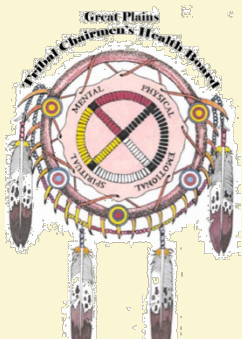
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*Connecting resources and knowledge to strengthen
the health of people in rural communities.*