Form Approved Through 09/30/2007

OMB No. 0925-0001

Department of Health and Human Services
Public Health Services

Grant Application

Do not exceed character length restrictions indicated.

LEAVE BLANK—FOR PHS USE ONLY.		
Type	Activity	Number
Review Group		Formerly
Council/Board (Month, Year)		Date Received

1. TITLE OF PROJECT *(Do not exceed 81 characters, including spaces and punctuation.)*
Alcoholism and Violence Among Native American Tribes

2. RESPONSE TO SPECIFIC REQUEST FOR APPLICATIONS OR PROGRAM ANNOUNCEMENT OR SOLICITATION ☐ NO ☒ YES
(If "Yes," state number and title)
Number: PA-00-004 Title: Mentored Patient-Oriented Research Career Development Award

3. PRINCIPAL INVESTIGATOR/PROGRAM DIRECTOR

New Investigator ☐ No ☒ Yes

3a. NAME (Last, first, middle)
Yuan, Nicole Patricia

3b. DEGREE(S)
PhD

3h. eRA Commons User Name

3c. POSITION TITLE
Director of Substance Abuse

3d. MAILING ADDRESS *(Street. city. state. zip code)*
P.O. Box 245163
Tucson, Arizona 85724

3e. DEPARTMENT, SERVICE, LABORATORY, OR EQUIVALENT
Health Promotion Sciences

3f. MAJOR SUBDIVISION
Mel and Enid Zuckerman College of Public Health

3g. TELEPHONE AND FAX *(Area code, number and extension)*
TEL: 520-626-9511 FAX: 520-626-9515

E-MAIL ADDRESS:
nyuan@email.arizona.edu

4. HUMAN SUBJECTS RESEARCH
No ☐ Yes ☒

4b. Human Subjects Assurance No.
00004218

4c. Clinical Trial ☒ No ☐ Yes

4d. NIH-defined Phase III Clinical Trial ☒ No ☐ Yes

5. VERTEBRATE ANIMALS ☒ No ☐ Yes

5a. If "Yes," IACUC approval Date

5b. Animal welfare assurance no.

4a. Research Exempt
No ☒ Yes ☐

If "Yes," Exemption No.

6. DATES OF PROPOSED PERIOD OF SUPPORT *(month, day, year—MM/DD/YY)*
From 04/01/06 Through 04/01/11

7. COSTS REQUESTED FOR INITIAL BUDGET PERIOD
7a. Direct Costs ($) [redacted] 7b. Total Costs ($)

8. COSTS REQUESTED FOR PROPOSED PERIOD OF SUPPORT
8a. Direct Costs ($) [redacted] 8b. Total Costs ($)

9. APPLICANT ORGANIZATION
Name Arizona Board of Regents, University of Arizona
Address
P.O. Box 3308
Tucson, Arizona 85722-3308

10. TYPE OF ORGANIZATION
Public: → ☐ Federal ☒ State ☐ Local
Private: → ☐ Private Nonprofit
For-profit: → ☐ General ☐ Small Business
☐ Woman-owned ☐ Socially and Economically Disadvantaged

11. ENTITY IDENTIFICATION NUMBER
86-6004791
DUNS NO. 80-634-5617 Cong. District 7th

12. ADMINISTRATIVE OFFICIAL TO BE NOTIFIED IF AWARD IS MADE
Name Janet Hornung
Title Director, Sponsored Projects Services
Address
P.O. Box 3308
Tucson, Arizona 85722-3308
Tel: 520-626-6000 FAX: 520-626-4137
E-Mail: sponsor@u.arizona.edu

13. OFFICIAL SIGNING FOR APPLICANT ORGANIZATION
Name Richard C. Powell
Title Vice President for Research
Address
P.O. Box 3308
Tucson, Arizona 85722-3308
Tel: 520-626-6000 FAX: 520-626-4137
E-Mail: sponsor@u.arizona.edu

14. PRINCIPAL INVESTIGATOR/PROGRAM DIRECTOR ASSURANCE: I certify that the statements herein are true, complete and accurate to the best of my knowledge. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. I agree to accept responsibility for the scientific conduct of the project and to provide the required progress reports if a grant is awarded as a result of this application.

SIGNATURE OF PI/PD NAMED IN 3a.
(In ink. "Per" signature not acceptable.)
Nicole P. Yuan

DATE
4-29-05

15. APPLICANT ORGANIZATION CERTIFICATION AND ACCEPTANCE: I certify that the statements herein are true, complete and accurate to the best of my knowledge, and accept the obligation to comply with Public Health Services terms and conditions if a grant is awarded as a result of this application. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties.

SIGNATURE OF OFFICIAL NAMED IN 13.
(In ink. "Per" signature not acceptable.)
Rachael Bondale acting for Richard C. Powell

DATE
5/3/05

DESCRIPTION: See instructions. State the application's broad, long-term objectives and specific aims, making reference to the health relatedness of the project (i.e., relevance to the **mission of the agency**). Describe concisely the research design and methods for achieving these goals. Describe the rationale and techniques you will use to pursue these goals.

In addition, in two or three sentences, describe in plain, lay language the relevance of this research to **public** health. If the application is funded, this description, as is, will become public information. Therefore, do not include proprietary/confidential information. **DO NOT EXCEED THE SPACE PROVIDED.**

PROJECT SUMMARY. This revised K23 application will allow Nicole P. Yuan, Ph.D. to develop skills and expertise in the study of alcoholism and violence among Native Americans and other vulnerable populations with emphasis on public health and community-based research methodologies. Dr. Yuan's career development plan includes: 1) completion of the requirements for an M.P.H. degree with a concentration in epidemiology; 2) training in alcohol, genetic, and Native American health epidemiology and research methods; 3) attendance at professional meetings; 4) completion of the research plan; 5) production of empirical papers and presentations; and 6) submission of an R01 grant application. Her mentors include Drs. Mary P. Koss, David Goldman, Kenneth Leonard, Bonnie M. Duran, Yvette Roubideaux, and Mary Z. Mays. Dr. Yuan's research plan consists of three phases: 1) secondary analyses of data from the Ten Tribes Study; 2) pilot study with the tribes; and 3) research collaboration to develop a follow-up study with full participation from the tribes. The Ten Tribes Study, a NIAAA-funded contract, was designed to determine prevalence rates of alcoholism and measure genetic and environmental vulnerability factors of alcoholism among seven Native American tribes. Preliminary analyses revealed high prevalence rates of lifetime alcohol disorders and physical and sexual victimization with significant inter-tribal variability. Dr. Yuan's project will include analyses that were not proposed in the original contract. The specific aims of her research plan are to: 1) to investigate the role of gene-environment interactions in the development of alcohol dependence; 2) determine the role of gene-environment interactions in the development of posttraumatic stress; 3) examine the impact of cultural factors on risks of alcohol dependence and victimization; 4) conduct a pilot study to examine cultural and community factors that contribute to alcohol disorders and interpersonal violence; and 5) establish collaborations to conduct a follow-up study on the relationship between alcohol use and intimate partner violence. RELEVANCE. The aim of the proposed research program is to improve the public health of Native Americans and their communities by reducing the prevalence and severity of outcomes associated with alcoholism and violence. Implications include better informed practice and policy of healthcare and other community-based systems serving reservations.

PERFORMANCE SITE(S) (organization, city, state)

Mel and Enid Zuckerman College of Public Health
University of Arizona
Tucson, Arizona

KEY PERSONNEL. See instructions. *Use continuation pages as needed* to provide the required information in the format shown below. Start with Principal Investigator. List all other key personnel in alphabetical order, last name first.

Name	eRA Commons User Name	Organization	Role on Project
Yuan, Nicole Patricia, PhD		University of Arizona	Principal Investigator
Koss, Mary P., PhD		University of Arizona	Primary Sponsor
Goldman, David, MD		NIH/NIAAA	Co-Sponsor
Leonard, Kenneth E., PhD		Res. Inst. Addict, Buffalo	Consultant
Duran, Bonnie M., DrPH		Univ. of New Mexico	Consultant
Roubideaux,Yvette,MD,MPH		University of Arizona	Consultant
Mays, Mary Z., PhD		University of Arizona	Consultant

OTHER SIGNIFICANT CONTRIBUTORS

Name	Organization	Role on Project
N/A		

Human Embryonic Stem Cells ☒ No ☐ Yes

If the proposed project involves human embryonic stem cells, list below the registration number of the specific cell line(s) from the following list: http://stemcells.nih.gov/registry/index.asp. *Use continuation pages as needed.*

If a specific line cannot be referenced at this time, include a statement that one from the Registry will be used.

Cell Line

Disclosure Permission Statement. Applicable to SBIR/STTR Only. See SBIR/STTR instructions. ☐ Yes ☒ No

CDA TOC Substitute Page Candidate (Last, first, middle): Yuan, Nicole Patricia

Use this substitute page for the Table of Contents of Research Career Development Awards. Type the name of the candidate at the top of each printed page and each continuation page.

RESEARCH CAREER DEVELOPMENT AWARD
TABLE OF CONTENTS
(Substitute Page)

Appendix (Five collated sets. No page numbering necessary.) ☒ Check if Appendix is included

Number of publications and manuscripts accepted for publication *(not to exceed 5)* 2

Appendix consists of five materials: 2 manuscripts, 2 informed consent forms, and an interview packet.

Note: Font and margin requirements must conform to limits provided in the Specific Instructions.

*Include these items only when applicable.

CITIZENSHIP

☒ U.S. citizen or noncitizen national ☐ Permanent resident of U.S. (If a permanent resident of the U.S., a notarized statement must be provided by the time of award.)

BUDGET FOR ENTIRE PROPOSED PROJECT PERIOD
DIRECT COSTS ONLY

BUDGET CATEGORY TOTALS	INITIAL BUDGET PERIOD (from Form Page 4)	ADDITIONAL YEARS OF SUPPORT REQUESTED 2nd	3rd	4th	5th
PERSONNEL: *Salary and fringe benefits. Applicant organization only.*	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
CONSULTANT COSTS					
EQUIPMENT					
SUPPLIES	10,218	11,544	6,755	6,319	6,319
TRAVEL	5,800	13,000	7,800	16,800	7,800
PATIENT CARE COSTS — INPATIENT					
PATIENT CARE COSTS — OUTPATIENT					
ALTERATIONS AND RENOVATIONS					
OTHER EXPENSES					
CONSORTIUM/ CONTRACTUAL COSTS — DIRECT					
SUBTOTAL DIRECT COSTS *(Sum = Item 8a, Face Page)*	[redacted]				
CONSORTIUM/ CONTRACTUAL COSTS — F&A					
TOTAL DIRECT COSTS	[redacted]				

TOTAL DIRECT COSTS FOR ENTIRE PROPOSED PROJECT PERIOD	$ [redacted]
SBIR/STTR Only Fee Requested	
SBIR/STTR Only: Total Fee Requested for Entire Proposed Project Period (Add Total Fee amount to "Total direct costs for entire proposed project period" above and Total F&A/indirect costs from Checklist Form Page, and enter these as "Costs Requested for Proposed Period of Support on Face Page, Item 8b.)	$

JUSTIFICATION. Follow the budget justification instructions exactly. Use continuation pages as needed.

Personnel

Nicole P. Yuan, Ph.D. – will serve as Principal Investigator for the award and will provide 75% FTE effort for all five years of the award period. Dr. Yuan will receive a 3% increase in salary per year due to a 3% cost of living increase. Her effort will be directed to various supervised training and research activities with the aim of developing skills and expertise in alcohol use, violence, and Native American health. The training activities will include the completion of the requirements for a Master in Public Health degree, additional coursework in alcohol, genetic, and Native American research methods, meetings with mentors, and attendance at professional meetings. Dr. Yuan's research activities will include the completion of a secondary analyses project, new data collection, research collaboration with tribes, production of empirically-based publications

and presentations, and development and submission of an R01 grant application.

Student, To Be Hired – will serve as Transcriptionist for the award and will provide 5% FTE effort during Year 3. The student will be responsible for transcribing audiotapes of qualitative interviews and creating Word documents for data coding and analysis.

Research Development Support

Support for tuition and fees related to obtaining a Master in Public Health degree with a concentration in epidemiology from the Mel and Enid Zuckerman College of Public Health is requested during the first, second, and third years of the award. The degree, involving coursework and an internship, will contribute to the development of Dr. Yuan's skills to conduct community-oriented research in the public health domain.

Support for tuition related to attending the Graduate Summer Institute programs at the Johns Hopkins Bloomberg School of Public Health is requested during the first and second years of the award. In Year 1, Dr. Yuan will complete courses in alcohol dependence and prevention research offered by the Graduate Summer Institute in Mental Health Research. In Year 2, Dr. Yuan will complete courses in genetic epidemiology and genetic research methods offered by the Graduate Summer Institute of Epidemiology and Biostatistics. The additional coursework will expand Dr. Yuan's abilities to conduct alcohol research and incorporate genetic data and hypotheses in gene-environment studies.

Support for books and photocopying charges is requested during all five years of the award. Books will be purchased to complete the requirements of graduate courses and independent study projects. Books will also be purchased to support the analyses and interpretation of findings and design of new studies, as proposed in the research plan. Reproduction charges will include photocopying resources required for courses and research activities.

Purchases of a computer and laser printer are requested during the first year of the award. The requested pieces of equipment are essential for the career and research plan activities. They will be used extensively to complete course assignments, analyze data, access Internet resources, communicate using email, transmit and receive documents, write manuscripts, and create presentations.

Support for computer services is requested during all five years of the award. Computer support offered by the Office of Information Technology, Mel and Enid Zuckerman College of Public Health includes help desk consultation and problem resolution, computer acquisition, hardware set-up, configuration, software installation, site licenses and updates, access accounts and security, virus protection, and file back up services.

Purchases of software programs, including Atlas.ti and Adobe Acrobat, are requested during the first year of the award. Purchase of an SPSS license is requested for each year of the award. The requested software programs and licenses are essential for analyzing quantitative and qualitative data, and sharing documents with other researchers.

Purchase of a cellular phone is requested during the first year of the award. The requested equipment is essential for conducting and receiving communications from researchers who work at the University of Arizona and other academic institutions in Maryland, New Mexico, and New York. In addition, the equipment is needed for communications with key members of the tribes of the Ten Tribes Study.

Purchase of local and long-distance cellular phone service is requested during all five years of the award. The requested service is necessary for conducting and receiving communications and developing collaborative relationships with mentors, tribal members, and other scientists that conduct research on alcohol, violence, and Native American health.

Purchases of office supplies are requested during all five years of the award. The budgeted supplies include USB drives, zip disks, blank cds, paper for printer, office paper, legal pads, envelopes, manila envelopes, file folders, hanging folders, labels, pens, pencils, highlighters, staplers, paper clips, binder clips, post-it notes, printer ink cartridges, desk organizers, light bulbs, and file cabinets.

Support for U.S. postage and FedEx services is requested during all five years of the award. The postage will be used to send manuscripts, and other research materials to mentors, collaborators, and tribes for review and feedback.

Support for conference registration fees for the annual Research Society on Alcoholism conference is requested during all five years of the award period. Attendance at the conferences will enhance learning of current alcohol research findings, expand network with other scientists, develop ideas for future projects, and present findings to a national audience. In addition, attendance at the RSA conferences will provide Dr. Yuan the opportunity to receive in-person mentoring from Dr. Kenneth Leonard.

Purchases of supplies for qualitative data collection, including a microcassette recorder, transcription systems, and microcassette tapes, is requested for the second year of the award period. These supplies are necessary for qualitative data collection with tribes from the Ten Tribes Study.

Support for monetary participant support is requested for the second year of the award. Individuals that participate in qualitative interviews will be compensated for their time. Participant support is an incentive for sharing views and experiences related to sensitive topics, including alcohol use, violence, and Native American culture.

Purchases of refreshments for the focus group interviews are requested for the second year of the award. Refreshments will include beverages and light snacks. Refreshments contribute to a group atmosphere that is inviting and open for discussion.

Support for travel expenses, including airfare, hotel, ground transportation/ rental car, and per diem, related to attending summer courses at the Johns Hopkins Bloomberg School of Public Health is requested during the first and second years of the award. The additional coursework in epidemiology and genetics will expand Dr. Yuan's abilities to interpret and incorporate genetic data and hypotheses in gene-environment studies. Travel and per diem rates in this application are consistent with those established by the University of Arizona travel guidelines.

Support for travel expenses, including airfare, hotel, ground transportation/ rental car, and per diem, related to attending the Mentorship and Educational Program in Mental Health Services Research at the University of New Mexico is requested during all five years of the award. Dr. Yuan will attend the 1-week program as a mentee during Years 1 and 2 and as a junior advisor during Years 3, 4, and 5. Participation in the program will advance Dr. Yuan's skills in conducting mental health services research and supervising early career investigators.

Support for travel expenses, including airfare, hotel, ground transportation/ rental car, and per diem, to attend conferences organized by the Research Society on Alcoholism (RSA) and Indian Health Services (IHS). Dr. Yuan will attend the annual RSA conferences during each year of the award and the IHS conferences on alternate years (Years 2 and 4). The requested travel funding is essential to learn about new research methods and findings, develop collaborative relationships, develop ideas for future research projects, and present findings.

Support for travel expenses, including airfare, hotel, ground transportation/ rental car, and per diem, for meetings with Dr. David Goldman (co-sponsor) and Dr. Kenneth Leonard (consultant) is requested during several years of the award period. Travel is necessary because these mentors live outside of Arizona. In addition, visits to the offices/labs of Drs. Goldman and Leonard at the National Institute of Alcohol Abuse and Alcoholism and Research Institute of Addictions, respectively, will expand knowledge of advancing areas of alcohol research at these institutions.

Support for travel expenses, including airfare, hotel, ground transportation/ rental car, and per diem, for meetings with the tribes of the Ten Tribes Study is requested during the second and fourth years of the award. These meetings are necessary for qualitative data collection, dissemination of empirical findings, and development of a collaboration with the tribes for future research projects.

Facilities and Administrative Costs

Indirect costs are requested at 8% of modified total direct costs, as stipulated in the Program Announcement (PA-00-004), during all five years of the award period. The base amount consists of the total personnel and operations costs.

BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME	POSITION TITLE
Nicole Patricia Yuan	Research Associate
eRA COMMONS USER NAME	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
Oberlin College, Oberlin, OH	B.A.	May 1995	Biopsychology
Bowling Green State U., Bowling Green, OH	M.A.	Dec. 1999	Clinical psychology
Bowling Green State U., Bowling Green, OH	Ph.D.	Aug. 2002	Clinical psychology

Research and/or Professional Experience

Employment

1995-1997 Research Assistant (full-time; supervisor: Bonnie L. Green, Ph.D.), Department of Psychiatry, Georgetown University

1997-1998 Graduate Research Assistant (part-time; supervisor: Stuart Keeley, Ph.D.), Department of Psychology, Bowling Green State University

1998-1999 Graduate Teaching Assistant (part-time; supervisors: Andrew Freeberg, Ph.D., Richard Anderson, Ph.D.), Department of Psychology, Bowling Green State University

2000 Graduate Research Assistant (part-time; supervisor: Catherine Stein, Ph.D.), Department of Psychology, Bowling Green State University

2002-Present Research Associate (part-time; supervisor: Mary P. Koss, Ph.D.), Health Promotion Sciences, Mel and Enid Zuckerman College of Medicine, University of Arizona

2004-Present Research Associate (full-time; supervisor: Myra Muramoto, M.D., M.P.H), Department of Family and Community Medicine, College of Medicine, University of Arizona

Honors

1999 Sigma Xi, The Scientific Research Society, Grant-in-Aid Research Award

2000 Donald Becker Leventhal Memorial Award, Bowling Green State University

2000-2001 University Dissertation Fellowship, Bowling Green State University

2001 American Psychological Association Dissertation Award

Professional Societies

Professional Memberships

1997-Present American Psychological Association

1998-Present Society for Community Research and Action

2001-2004 Sigma Xi, The Scientific Research Society

2001-Present The International Society for Traumatic Stress Studies

2002-Present Southern Arizona Psychological Association

2004-Present Society for Research on Nicotine and Tobacco

2005-Present Arizona Psychological Association

Reviewer

2003-Present American Journal of Public Health

2005-Present American Journal of Preventive Medicine

Service

2004-Present UA Alcohol, Other Drug, and Violence Prevention Advisory Committee
2005-Present EXPORT Substance Abuse Prevention, Treatment, and Recovery Conference Planning Committee

Publications (in chronological order)

Original Research

1. Goodman, L.A., Corcoran, C., Turner, K., Yuan, N., & Green, B. (1998). Assessing traumatic event exposure: General issues and preliminary findings for the Stressful Life Events Screening Questionnaire. Journal of Traumatic Stress, 11, 521-542.
2. Epstein, S.A., Gonzales, J.J., Weinfurt, K., Boekeloo, B., Yuan, N., & Chase, G. (2001). Are psychiatrists' characteristics related to how they care for depression in the medically ill?: Results from a national case-vignette study. Psychosomatics, 42, 482-489.
3. Koss, M.P., Bailey, J.A., Yuan, N.P., Herrera, V.M., & Lichter, E.L. (2003). Depression and PTSD in survivors of male violence: Research and training initiatives to facilitate recovery. Psychology of Women Quarterly, 27, 130-142.
4. Koss, M.P., Yuan, N.P., Dightman, D., Prince, R.J., Polacca, M., Sanderson, B., & Goldman, D. (2003) Adverse childhood exposures and alcohol dependence among seven Native American tribes. American Journal of Preventive Medicine, 25, 238-244.*
5. Yuan, N.P., Koss, M.P., Polacca, M., & Goldman, D. (in press). Risk factors for physical assault and rape among Native American tribes. Journal of Interpersonal Violence.*

Non-Experimental Articles

1. Herrera, V. M., Koss, M. P., Bailey, J., Yuan, N. P., & Lichter, E. L. (in press). Survivors of male violence: Research and training initiatives to facilitate recovery from depression and PTSD. In J. Worell & C. Goodheart (Eds.), Handbook of girls and women's psychological health. New York, NY: Oxford University Press.
2. Ingram, M., Yuan, N.P., & Koss, M.P. Male partner violence. (in press). In G. Fink (Ed.), Encyclopedia of Stress- 2nd edition.

*copies sent

BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME	POSITION TITLE
Mary Lyndon Pease Koss	
ERA COMMONS USER NAME	Professor

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
University of Michigan, Ann Arbor, MI	AB	1970	Psychology
University of Minnesota, Minneapolis, MN	PhD	1972	Clinical Psychology

A. Positions And Honors.

Positions and Employment

1973-1976	Assistant Professor, St. Olaf College, Northfield, MN
1976-1988	Assistant (tenured, 1980), Associate, and Professor, Kent State U., Kent, OH
1988-Present	Professor (tenured, 1989), University of Arizona, Mel and Enid Zuckerman Arizona College of Public Health, Division of Health Promotion Sciences
1988-Present	Professor (joint appointment), College of Medicine, Department of Family and Community Medicine
1988-Present	Professor (joint appointment), College of Medicine, Department of Psychiatry
1988-Present	Professor (joint appointment), College of Social and Behavioral Sciences, Department of Psychology

Honors and Awards (selected)

1989	Stephen Schafer Award for Outstanding Research Contributions to the Victim Assistance Field, National Organization for Victim Assistance (NOVA)
1990	Expert witness before the US Senate Judiciary Committee in support of the Violence Against Women Act
1991	Brother Peace Award, National Association of Men Against Sexism
1992	Distinguished Scholarly Contribution to Research on Acquaintance Rape, Safe Schools Coalition
1992	Expert witness before the US Senate Veteran's Affairs Committee in support of the Women Veteran's Health Care Act
1992-1996	Co-Chair, American Psychol. Assoc. Taskforce on Male Violence Against Women
1993-1995	National faculty, Women Veteran's Health programs
1994	"Rosie" Award, presented by Arizona Governor Rose Mofford for Distinguished Contributions to the Community of Tucson
1994	Congressional Briefing on Violence Against Women
1994	Distinguished Service Award from the Excellence in Print Awards for the book, No Safe Haven: Male Violence Against Women at Home, at Work, and in the Community

1997	Heritage Award recognizing a substantial and outstanding body of work, American Psychological Association, Division 35 (Psychology of Women)
1997-1999	National Institute of Mental Health Working Group on the Mental Health Consequences of Torture and Related Violence and Trauma to advise the South African Tribunal on Truth and Reconciliation
2000	American Psychological Association Distinguished Research in Public Policy
2002	Management Committee, Global Sexual Violence Initiative, Global Forum (affiliated with the World Health Organization)
2003	American Psychological Association Committee on Women in Psychology Leadership Award (Senior Career)
2004	Mel and Enid Zuckerman Arizona College of Public Health Research Prize
2004-09	Director, Sexual Violence Applied Research Forum for VAWnet.org, an Internet resource funded by the Centers for Disease Control and Prevention

B. Selected Peer-Reviewed Publications (in chronological order)
(Publications selected from 191 peer-reviewed publications)

1. Krakow, B., Artar, A., Warner, T.D., Melendrez, D., Johnston, L., Hollifield, M., Germain, A., & Koss, M. (2000). Sleep disorder, depression, and suicidality in female sexual assault survivors. *Crisis, 21*, 163-170.
2. Krakow, B., Germain, A., Tandberg, D., Koss, M., Schrader, R., Hollifield, M., Cheng, D., & Edmond, T. (2001). The relationship of sleep quality and posttraumatic stress to potential sleep disorders in sexual assault survivors with nightmares, insomnia, and PTSD. *Journal of Traumatic Stress, 14,* 647-665.
3. Krakow, B., Melendrez, D., Pedersen, B., Johnston, L., Hollifield, M., Germain, A., Koss, M.P., Warner, T.D., & Schrader, R. (2001). Complex insomnia: Insomnia and sleep-disorder breathing in a consecutive sample of crime victims with nightmares and PTSD. *Biological Psychiatry, 49,* 948-953.
4. Krakow, B., Hollifield, M., Johnston, I., Koss, M., Schrader, R., Warner, T.D., Tandberg, D., Lauriello, J., McBride, L., Cutchen, L., Cheng, D., Emmons, S., Germain, A., Melendres, D., Sandovall, D., & Prince, H. (2001). Imagery rehearsal therapy for chronic nightmares in sexual assault survivors with posttraumatic stress disorder: A randomized clinical trial. *Journal of the American Medical Association, 286 (5),* 537-545.
5. Koss, M.P. (2001). Evolutionary models of rape: Acknowledging the complexities. *Trauma, Violence, & Abuse*, *1*,182-191. (reprinted in Travis, C. (Ed.). *Evolutionary psychology: A critical analysis.* Cambridge, MA: MIT Press.
6. White, J.W., Smith, P.H., Koss, M.P., & Figueredo, A.J. (2001). Intimate partner aggression: What have we learned? *Psychological Bulletin, 126,* 690-696.
7. Boeschen, L., Koss, M.P., Figueredo, A.J., & Coan, J.A. (2001). Experiential avoidance and posttraumatic stress disorder: A cognitive mediational model of rape recovery. *Journal of Abuse and Maltreatment, 4,* 211-246.
8. White, J.W., Merrill, L., & Koss, M.P. (2001). Predictors of premilitary courtship violence in a Navy recruit sample. *Journal of Interpersonal Violence, 16,* 910-927
9. Koss, M.P., & Bachar, K.J. (2002). Rape. In D. Levinson (Ed). *The Encyclopedia of Crime & Punishment.* Great Barrington, MA: Berkshire Reference Works, Sage.
10. Koss, M.P., Figueredo, A.J., & Prince, R.J. (2002). A cognitive mediational model of rape recovery: Preliminary specification and testing in cross-sectional data, *Journal of Consulting and Clinical Psychology, 70*, 926-941.
11. Krakow, B., Schrader, R., Tandberg, D., Hollifield, M., Koss, M.P., Yau, C.L., & Cheng, D.T. (2002). Nightmare frequency in sexual assault survivors with PTSD. *Journal of Anxiety Disorders, 16*, 175-190.
12. Krakow, B., Melendrez, D., Johnston, L., Warner, T.D., Clark, J.O., Pacheco, M., Pedersen, B., Koss, M., Hollifield, M., & Schrader, R. (2002). Sleep-disordered breathing, psychiatric distress, and quality of life impairment in sexual assault survivors. *The Journal of Nervous and Mental Disease, 190*, 442-452.
13. Koss, M.P. Evolutionary models of why men rape: acknowledging the complexities (2003). In C. Travis (Ed.) *Evolution, gender, and rape* (pp. 191-206). Boston, MA: MIT Press.

20. Mio, J.S., Koss, M.P., Harway, M., O'Neil, J.M., Geffner, R., Murphy, B..C., & Ivey, D. (2003). Violence against women: A silent pandemic. In J.S. Mio & G.Y. Iwamasa (Eds.) *Culturally diverse mental health: The challenge of research and resistance* (pp. 269-288). New York: Brunner-Routledge.
21. Koss, M.P., Bachar, K.J., & Hopkins, C.Q. (2003) An innovative application of restorative justice to the adjudication of selected sexual offenses. In H. Kury & J. Obergfell-fuchs (Eds). *Crime prevention: New Approaches,* pp, 321-344. Mainz, Germany: Weisser Ring.
22. Koss, M.P., Bachar, K.J., & Hopkins, C.Q. (2003). Restorative justice for sexual violence: repairing victims, building community, and holding offenders accountable. In R. Prentky & A.W. Burgess (Eds.) *Understanding and managing sexual coercion. Annals of the New York Academy of Sciences, 989,* 384-396.
23. Koss, M.P., Bailey, J., Herrera, V., Yuan, N., & Lichter, E. (2003). Depression, PTSD, and health problems in survivors of male violence: Research and training initiatives to facilitate recovery. *Psychology of Women Quarterly,* 27, 130-142.
24. Koss, M.P., Yuan, N.P., Dightman, D., Prince, R.J., Polacca, M., Sanderson, B., & Goldman, D. (2003). Adverse childhood exposures and DSM-IV alcohol dependence among seven Native American tribes. *American Journal of Preventive Medicine, 25,* 238-244.
25. Hamby, S.L., & Koss, M.P. (2003). Shades of gray: Varieties of negative sexual experiences and how to ask about them. *Psychology of Women Quarterly, 27,* 243-255.
26. Hamby, S.L., & Koss, M.P. (2004). The epidemiological database: Prevalence, risk factors, and consequences of violence against women. In Liebschultz, J.M., Frayne, S.M., & Saxe, G.(Eds.) *Violence against women: A physician's guide to identification and management* (pp. 3-38). ACP-ASIM Press, Philadelphia, PA.
27. Walker, E.A., Newman, E., & Koss, M.P. (2004). Costs and health care utilization associated with traumatic experiences. In P. Schnurr & B. Green (Eds.) *Gender and trauma,* pp. 43-70. Washington, DC: APA Books.
28. Koss, M.P. & Cook, S.L. (2004). More data have accumulated supporting date and acquaintance rape as significant problems for women. In R.J. Gelles & D.R. Loseke (Eds.), *Current controversies on family violence* (pp. 104-119). Newbury Park, CA: Sage.
29. Koss, M. P., Bachar, K. J., Hopkins, C. Q., & Carlson, C. (2004). Justice responses to sexual assault: Lessons learned and new directions. In M. Eliason (Ed.) *Undoing harm: International perspectives on interventions for men who use violence against women* (pp. 37-60). Uppsala, Sweden: Uppsala Universitet.
30. Koss, M.P. (2004). Empirically-enhanced recollections of twenty-five years of rape research. *Journal of Interpersonal Violence, 19,* 1435-1463.
31. Mohler-Kuo, M., Dowdall, G.W., Koss, M.P., & Wechsler, H. (2004). Correlates of rape while intoxicated in a national sample of college women. *American Journal of Preventive Medicine, 65,* 37-53.
32. Hopkins, C. Q., Koss, M. P., & Bachar, K. J. (2004). Applying restorative justice to ongoing intimate violence: Problems and possibilities. *St. Louis University Public Law Review. 20,* 289-312.
33. Krakow, B., Santana, E., Melendrez, D., Johnston, L., Warner, T.D., Hollifield, M., Sisley, Koss, M., & Shafer, L. (2004). Nightmare, insomnia, and sleep-disordered breathing in fire evacuees seeking treatment for posttraumatic sleep disturbance. *Journal of Traumatic Stress, 17,* 257-268.
34. Koss, M.P., Bachar, K., Hopkins, C.Q., & Carlson, C. (2004). Expanding a Community's Justice Response to Sex Crimes through Advocacy, Prosecutorial, and Public Health Collaboration: Introducing the **RESTORE** Program. *Journal of Interpersonal Violence, 19,* 1435-1463.
35. Koss, M. P., & Figueredo, A.J. (2004). A cognitive mediational model of rape recovery: Cross-validation in longitudinal data. *Psychology of Women Quarterly, 28,* 273-286.
36. Bletzer, K.V., & Koss, M.P. (2004). After-rape among three populations in the southwest: A time of mourning, a time for recovery. *Violence Against Women.*
37. Bletzer, K. V., & Koss, M. P. (2004). Narrative constructions of sexual violence as told by female rape survivors in three populations of the Southwestern United States: Scripts of coercion, scripts of consent. *Medical Anthropology, 23,* 113-156.
38. Koss, M.P., Figueredo, A.J. (2004). Change in cognitive mediators of rape's impact on psychosocial health across two years of recovery. *Journal of Consulting and Clinical Psychology,* 78, 1063-1072).

39. Hopkins, C. Q., Koss, M. P., & Bachar, K. J. (in press). Incorporating feminist theory and insights into a restorative justice response to sex offenses. *Violence Against Women.*
40. Koss, M.P., Bachar, K.J., & Hopkins, C.Q. (in press). Disposition and treatment of juvenile sex offenders from the perspective of restorative justice. In H. Barbaree (Ed). *Handbook on the Treatment of Juvenile Sexual Offenders.*
41. Ingram, M., & Koss, M.P. (in press) Male partner violence. In *Encyclopedia of violence.*
42. Hererra, V., & Koss, M.P. (in press). The impact of sexual violence on girls and women's mental health. In J. Worell (Ed). *Handbook of Girls and Women's Mental Health.*
43. Krakow, B., Germain, A., Tandberg, D., Koss, M., Schrader, R., Hollifield, M., Cheng, D., & Edmond, T. (in press). The relationship of sleep quality and posttraumatic stress to potential sleep disorders in sexual assault survivors with nightmares, insomnia, and PTSD. *Journal of Traumatic Stress.*
44. Germain, A., Zadra, Warner, & Koss, M.P. (in press). Increased mastery elements associated with imagery rehearsal treatment for sexual assault survivors. *Dreaming.*
45. Testa, M., VanZile-Tamsen, C., Liningston, J.A., & Koss, M.P. (in press). Assessing women's experiences of sexual aggression using the Sexual Experiences Survey: Evidence for validity and implications for research. *Psychology of Women Quarterly.*

C. Research Support.

Ongoing Research Support

R49CCR921709-01 (9/30/02 - 9/29/05)
CDC
Sexual Violence Program for Perpetrators
The goal of the RESTORE Program (Responsibility and Equity for Sexual Transgressions Offering a Restorative Experience) is to implement and evaluate a perpetrator-focused sexual violence prevention program in collaboration with the Southern Arizona Center Against Sexual Assault, Pima County Attorney's Office, and the Mel and Enid Zuckerman Arizona College of Public Health.

Completed Research Support

N01-AA-1012 (10/1/95 - 7/31/03)
NIAAA
Alcoholism Prevalence and Gene/Environment Interactions in American Indian Tribes
The main goals of this study are to determine the prevalence of alcohol use and interpersonal violence among 10 American Indian tribes and to examine the causes and consequences of alcoholism including health problems.
Role: PI

75-3018 (9/30/96 - 6/1/04)
Arizona Department of Health Services
Rape and Sexual Assault Prevention Education Evaluation Project
The goals of this project are to develop technical capacity in sexual assault centers, collect statistical information, provide prevention evaluation resources, perform a process evaluation of Arizona Department of Heath Services Rape Prevention Education Program-funded prevention initiatives, and develop and maintain a website.
Role: PI

BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME	POSITION TITLE
David Goldman	Chief, Laboratory of Neurogenetics
eRA COMMONS USER NAME	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
Yale University	B.S.	1974	Biology
The University of Texas Medical Branch	M.D.	1978	Medicine

A. Positions and Honors.

Positions

1984-1987 Chief, Unit of Genetic Studies, LCS, NIAAA, Bethesda, MD
1988-1991 Chief, Section on Genetic Studies, LCS, NIAAA, Bethesda, MD
1987-Present Adjunct Professor, Dept. of Bio. Sciences, George Washington U.,Washington, D.C.
1991-Present Chief, Laboratory of Neurogenetics, NIAAA, Rockville, MD

Honors (Selected)

1984-Present Graduate instructor: "Human Genetics" Geo.Washington U.
1988-1994, Chairman, Human Research Review Cmtee, NIAAA
1993-Present NIAAA/Institutional Review Board, Member
1996-2000 Tenure and Promotions Committee, NIH
1998-Present NIAAA/Institutional Review Board, Chairman
1998-Present Member, Human Subjects Research Advisory Cmtee., NIH
2001-Present Member, Intramural Scientist Promotion & Tenure Committee, NIAAAA
2001-Present Member, Research Grant Committee, American Foundation for Suicide Prevention
2002 Spring 2002 Research Officer Group Promotion Board
2002 Member, IT Investment Review Board

Awards

1977 Medical School: Edward Randall Memorial Award for academic excellence
1978 Sandoz Award for research in pharmacology
1978 Kass Award for research
1991 PHS Commendation Medal
1996 Alpha Omega Alpha PHS Outstanding Service Medal
1996 Research for Recovery Award
2002 NIMH Director's Honor Award
2002 NIH Director's Award 2002; James Isaacson Research Award

B. Selected Peer-Reviewed Publications (1999-present; in chronological order)

1. Malhotra A, Goldman D: Benefits and pitfalls encountered in genetic studies of candidate genes, Biological Psychiatry 1999;45:544-550.
2. Enoch MA and Goldman D: Genetics of alcoholism and substance abuse. Psychiatric Clinics of North America 1999;22:2.
3. Enoch MA and Goldman D: Genetics of alcoholism. In Genetic influences on neural and behavioral functions, CRC Press, NY, 1999, p.147-157.

4. DePetrillo P, White K, Liu M, Hommer D, Goldman D: Effects of alcohol use and gender on the dynamics of short runs of EKG data estimated using Hurst exponent analysis. Alcohol, Clinical and Experimental Research 1999;23:745-750.
5. Lappalainen J, Long JC, Virkkunen M, Ozaki N, Goldman D, Linnoila M HTR2C Cys23Ser polymorphism in relation to CSF monoamine metabolite concentrations and DSM-III-R psychiatric diagnoses. Biol Psych 1999;46:821-826.
6. Enoch M-A, White KW, Harris CR, Robin RW, Ross J, Rohrbaugh JW, Goldman D: Association of low-voltage alpha EEEEG with a subtype of alcohol use disorders. Alcohol Clin Exper Res 1999;23:1312-1319.
7. Goldman D: Big mountain. Arch Genl Psych 1999;56:533.
8. Peterson RJ, Goldman D, Long JC: Nucleotide sequence diversity in non-coding regions of ALDH2 as revealed by restriction enzyme and SSCP analysis. Human Genetics 1999;104: 177-187,
9. Schuckit MA, Mazzanti C, Smith TL, Ahmed U, Radel M, Iwata N, Goldman D: Selective genotyping for the role of 5HT2A, 5HT2C, and GABA-6 receptors and the serotonin transporter in the level of response to alcohol. Biol Psych 1999;45:647-651.
10. Goldman D, Urbanek M, Guenther D, Robin RW, Long J: Association between a functional polymorphism at the DRD2 gene and the liability to substance abuse – Response. Neuropsychiatric Genetics 1999;88:446-447.
11. Enoch MA, Goldman D, Barnett R, Sher L, Mazzanti CM, Rosenthal NE: Association between seasonal affective disorder and the 5HT2A promoter polymorphism, -1438G/A. Molecular Psychiatry 1999;4:89-92.
12. Iwata N, Cowley DS, Radel M, Roy-Byrne PP, Goldman D: GABAA receptor a6 subunit gene polymorphisms and relationship to diazepam sensitivity. Am J Psychiatry 156: 1447-1449, 1999.
13. Peterson RJ, Goldman D, Long JC: Effects of worldwide population subdivision on ALDH2 linkage disequilibrium. Genome Research 1999;844-852.
14. Sher L, Goldman D, Ozaki N, Rosenthal NE: The role of genetic factors in the etiology of seasonal affective disorder and seasonality. J Affect Disord 1999;53(3):203-10.
15. Iwata N, Virkkunen, M, Goldman D: Identification of a naturally occurring Pro385-Ser385 substitution in the GABAA receptor •6 subunit gene in alcoholics and healthy volunteers. Mol Psych 2000;5(3):316-9.
16. Heinz A, Goldman D, Jones DW, Palmour R, Hommer D, Gorey JG, Lee, KS, Linnoila M, Weinberger DR Genotype influences in vivo dopamine transporter availability in human striatum Neuropsychopharm 2000;22:133-139.
17. Vanakoski J, Mazzanti C, Naukkarinen H, Virkkunen M, Goldman D: An abundant proneurotensin polymorphism, 479A>G, and a test of its association with alcohol dependence in a Finnish population. Alcohol Clin Exper Res 2000;24(6):762-5.
18. Heinz A, Jones DW, Mazzanti C, Goldman D, Ragan P, Hommer D, Linnoila M, Weinberger DW: Evidence of an effect of serotonin transporter genotype on protein expression in vivo and on alcohol neurotoxicity. Biol Psych 2000;47:643-649.
19. Evans J, Reeves B, Platt H, Liebenau A, Goldman D, Jefferson, K, Nutt, D: Impulsiveness, serotonin genes and repetition of deliberate self harm [DSH]. Psychol Med 2000;30(6):1327-34.
20. Cravchik A, Goldman D: Neurochemical Individuality: Genetic Diversity among Human Dopamine and Serotonin Receptors and Transporters, ArchGen Psych 2000;57(12):1105-14.
21. Koss MP, Goldman D: Genetic factors and alcoholism. Am J Pub Hlth 2000;90(11):1799.
22. Malhotra AK, Goldman D: The dopamine D(4) receptor gene and novelty seeking. Am J Psych 2000;157(11):1885-6.
23. Heinz A, Goldman D: Genotype effects on neurodegeneration and neuroadaptation in monoaminergic neurotransmitter systems. Neurochem Int 2000;37(5-6):425-32.
24. Enoch M-A, Harris CR, Goldman D: Does a reduced sensitivity to bitter taste increase the risk of becoming nicotine addicted? Addict Behav 2001;26(3):399-404.
25. Iwata N, Ozaki N, Inada T, Goldman D: An Association of a 5-HT5 Receptor Polymorphism, Pro15Ser, to Schizophrenia. Mol Psychiatry 2001;6(2):217-9.
26. Radel, M, Goldman D: Pharmacogenetics of alcohol response and alcoholism: The interplay of

genes and environmental factors in thresholds for alcoholism. Drug metabolism and Disposition 2001;29:489-494.
27. Vanakoski J, Naukkarinen H, Virkkunen M, Goldman D: No association of CCK and CCK(B) receptor polymorphisms with alcohol dependence. Psychiatry Res 2001;102(1):1-7.
28. Feng J, Craddock N, Jones IR, Cook EH Jr, Goldman D, Heston LL, Peltonen L, DeLisi LE, Sommer SS: Systematic screening for mutations in the glycine receptor a2 subunit gene (GLRA2) in patients with schizophrenia and other psychiatric diseases, Psychiatric Genetics, Brief Report 2001;11:45-48.
29. Saremi A, Hanson RL, Williams DE, Roumain J, Robin RW, Long JC, Goldman D, Knowler WC: Validity of the CAGE questionnaire in an American Indian Population. J of Studies on Alcohol 2001;62:294-300.
30. Egan MF, Goldberg TE, Kolachana BS, Mazzanti CM, Callicott JH, Goldman D, Weinberger DR: Effect of COMT Val108/158Met genotype on frontal lobe function and risk for schizophrenia. PNAS 2001;98:6917-6922.
31. Roy A, Rylander G, Asberg M, Mazzanti CM, Goldman D, Nielsen DA: Excess TPH I7 779C allele in surviving cotwins of suicide victims. Biological Psychiatry 2001;43:233-236.
32. Heinz A, Mann K, Weinberger DR, Goldman D. Serotonergic dysfunction, negative mood states, and response to alcohol. Alcohol Clin Exp Res 2001;25(4):487-95.
33. Reist C, Mazzanti C, Vu R, Tran D, Goldman D. Serotonin transporter promoter polymorphism is associated with attenuated prolactin response to fenfluramine. Am J Med Genet 2001; 105(4):363-8.
34. Enoch MA, Goldman D: The genetics of alcoholism and alcohol abuse. Curr Psychiatry Rep 2001;3(2):144-51.
35. Enoch MA, Greenberg BD, Murphy DL, Goldman: Sexually dimorphic relationship of a 5-HT2A promoter polymorphism with obsessive-compulsive disorder. Biol Psych 2001;49(4):385-8.
36. Enoch MA, White KV, Harris CR, Rohrbaugh JW, Goldman D: Alcohol use disorders and anxiety disorders: relation to the p300 event-related potential. Alcohol Clin Exp Res 2001;25(9):1293-300.
37. Enoch MA, Goldman D: Genetic influences. Chapter 26, p257-266. Seasonal Affective Disorder – practice and research. T. Partonen, A. Magnusson, editors, 2001.
38. Saremi A, Hanson RL, Williams DE, Roumain J, Robin RW, Long JC, Goldman D, Knowler WC: Validity of the CAGE questionnaire in an American Indian population. J Stud Alcohol 2001; 62(3):294-300.
39. Rotondo A, Mazzanti C, Dell'Osso L, Rucci P, Sullivan P, Bouanani S, Gonnelli C, Goldman D, Cassano GB: Catechol o-methyltransferase, serotonin transporter, and tryptophan hydroxylase gene polymorphisms in bipolar disorder patients with and without comorbid panic disorder. Am J Psychiatry 2002;159(1):3-4.
40. Egan M, Goldman D, Weinberger D: The human genome: mutations. Am J Psychiatry 2002;159(1):12.
41. Goldman D, Mazzanti CM, "From Phenotype to Gene and Back: A Critical Appraisal of Progress So Far." Chapter in Molecular Genetics and the Human Personality, published by American Psychiatric Publishing, Inc., 2002.
42. Harris CR, Albaugh B, Goldman D, Enoch M-A: Neurocognitive impairment due to chronic alcohol consumption in an American Indian community. Journal of Studies on Alcohol 64: 458-466, 2003.
43. Mulligan CJ, Robin RW, Osier MV, Sambuughin N, Goldfarb LG, Kittles RA, Hesselbrock D, Goldman D, Long, JC: Allelic variation at alcohol metabolism genes (ADH1B, ADH1C, ALDH2) and alcohol dependence in an American Indian population. Hum Genetics 113: 325-336, 2003.
44. Barr CS, Newman TK, Shannon C, Parker C, Dvoskin RL, Becker ML, Schwandt M, Champoux M, Lesch KP, Goldman D, Suomi SJ, Higley JD. Rearing condition and rh5-HTTLPR interact to influence limbic-hypothalamic-pituitary-adrenal axis response to stress in infant macaques. *Biol. Psychiatry* 55: 733-738, 2004.
45. Oota H, Pakstis AJ, Bonne-Tamir B, Goldman D, Grigorenko E, Kajuna SL, Karoma NJ, Kungulilo S, Lu RB, Odunsi K, Okonofua F, Zhukova OV, Kidd JR, Kidd KK The evolution and population genetics of the ALDH2 locus: random genetic drift, selection, and low levels of recombination. Ann Hum Genet 68(Pt 2):93-109, 2004.

46. Robin RW, Saremi, A., Albaugh, B., Hanson, RL., M.P.H., Williams, D., M.B., Ch.B., Goldman, D. Validity of the SMAST in Two American Indian Tribal Populations. Substance Use & Misuse 39(4):601-624, 2004.
47. Okada M, Northup JK, Ozaki N, Russell JT, Linnoila M, Goldman D. Modification of human 5-HT(2C) receptor function by Cys23Ser, an abundant, naturally occurring amino-acid substitution. Mol Psychiatry 9(1):55-64, 2004.

C. Research Support (selected)

1Z01AA000281-15 LNG (Fiscal Year 2003)
Alcoholism In American Indians
The purpose of the study is to assess genetic linkage to alcoholism and associated psychiatric disorders in a Southeastern Oklahoma Indian tribe with over 30,000 enrolled members living within tribal boundaries in Oklahoma.
Role: PI

1Z01AA000302-05 LNG (Fiscal Year 2003)
Relationship Of Candidate Genes And Alleles To Behavior
The purposed of the study is to identify functional polymorphisms in brain genes and examine their associations with alcoholism and other complex psychiatric diseases.
Role: PI

1Z01AA000019-12 LNG (Fiscal Year 2003)
NIAAA
ALDH2 and ADH2 functional variants and haplotypes
The goal of the project is to investigate the relationship of ADH and ALDH functional alleles to alcoholism and other substance abuse phenotypes.
Role: PI

1Z01AA000290-14 LNG (Fiscal Year 2003)
Molecular Genetic Studies Of Serotonin Function
The purpose of the project is to examine the role of functional variants in serotonin genes in predisposing individuals to psychopathologies and to alcoholism
Role: PI

1Z01AA000298-08 LNG (Fiscal Year 2003)
Mu Opioid Receptor Polymorphisms And Alcohol Dependence
The purpose of the project is to detect natural variation in the human mu opioid receptor locus, OPRM1, that might affect the function of this receptor or be associated with psychiatric phenotypes related to opioid function.
Role: PI

BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME	POSITION TITLE
Kenneth E. Leonard	Senior Research Scientist
eRA COMMONS USER NAME	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
Kent State University	B.A.	1976	Psychology
Kent State University	M.A.	1978	Psychology
Kent State University	Ph.D.	1981	Psychology

A. Positions and Honors.

Positions and Employment

1986-Present	Senior Research Scientist, Research Institute on Addictions, SUNY @ Buffalo
1997-Present	Director of the Division of Psychology in the Department of Psychiatry, SUNY @ Buffalo
1992-Present	Member, Editorial Board, Journal of Studies on Alcohol
1990-1994	Member, Initial Review Group, Clinical and Treatment Subcommittee (ALCP•1) NIAAA
1995-1997	Special Review Group on Health Services Research, NIAAA, Chair, 1995
1995-Present	Member, Editorial Advisory Board, Review of Aggression and Violent Behavior
1996-1998	Associate Editor, Journal of Abnormal Psychology
1999-Present	Consulting Editor, Journal of Abnormal Psychology
2000-Present	Consulting Editor, Psychological Bulletin
2001-Present	Member, Risk, Prevention, and Health Behavior (1) Study Section, Center for Scientific Review
2002	NIAAA Merit Award Recipient

B. Selected Peer-Reviewed Publications (in chronological order).

1. Senchak, M., & Leonard, K.E. (1994). Attributions for episodes of marital aggression: The effects of aggression severity and alcohol use. Journal of Family Violence, 9(4), 371-381.
2. Eiden, Das R., & Leonard, K.E. (1996). Paternal alcohol use and the mother-infant relationship. Development and Psychopathology 8, 307-323.
3. Leonard, K. E., & Senchak, M. (1996). The prospective prediction of marital aggression among newlywed couples. Journal of Abnormal Psychology, 105(3), 369-380.
4. Leonard, K.E., & Jacob, T. (1997). Sequential interactions among episodic and steady alcoholics and their wives. Psychology of Addictive Behaviors, 11(1), 18-25.
5. Quigley, B.M., & Leonard, K.E. (1997). Desistance of husband aggression in the early years of marriage. Violence and Victims, 11(4), 355-370.
6. Leonard, K.E. & Roberts, L.J. (1998). The effects of alcohol on the marital interactions of aggressive and nonaggressive husbands and their wives. Journal of Abnormal Psychology, 107(4), 602-615.
7. Roberts, L.J., & Leonard, K.E. (1998). An empirical typology of drinking partnerships and their relationship to marital functioning and drinking consequences. Journal of Marriage and the Family, 60(2), 515-526.
8. Eiden, R.D., Chavez, F., & Leonard, K. (1999). Parent Infant Interactions Among Families with Alcoholic Fathers. Development and Psychopathology, 11, 745-762.
9. Leonard, K. E., & Quigley, B. M. (1999). Drinking and marital aggression in newlyweds: An

event-based analysis of drinking and the occurrence of husband marital aggression. Journal of Studies on Alcohol, 60, 537-545.
10. Quigley, B. M., & Leonard, K. E. (1999). Husband alcohol expectancies, drinking, and marital conflict styles as predictors of severe marital violence among newlywed couples. Psychology of Addictive Behaviors, 13, 49-59.
11. Eiden, R.D, & Leonard, K.E. (2000). Parental alcoholism and attitudes about parenting during infancy. Journal of Substance Abuse, 11, 17-29.
12. Jacob, T., Haber R.H., Leonard, K.E., & Rushe, R. (2000). Home interactions of high and low antisocial male alcoholics and their families. Journal of Studies on Alcohol, 61(1), 72-80.
13. Sillars, A., Roberts, L.J., Leonard, K.E., & Dun, T. (2000). Cognition during marital conflict: The relationship between thought and talk. Journal of Studies on Alcohol, 61 72-80.
14. Quigley, B.M., & Leonard, K.E. (2000). Alcohol and the continuation of early marital aggression. Alcoholism: Clinical and Experimental Research, 24(7), 1003-1010.
15. Edwards, E.P., Leonard, K.E., & Eiden, R.D. (2001). Temperament and behavioral problems among infants in alcoholic families. Infant Mental Health Journal, 22(3), 374-392.
16. Eiden, R.D., Leonard, K.E., & Morrisey, S. (2001). Paternal alcoholism and toddler noncompliance. Alcoholism: Clinical and Experimental Research.
17. Jacob, T., & Leonard, K.E. & Haber, R.H. (2001). Family interactions of alcoholics as related to alcoholism type and drinking condition. Alcoholism: Clinical and Experimental Research, 25(6), 835-843.
18. Mudar, P., & Leonard, K.E. (2001). Discrepant substance use and marital functioning in newlywed couples. A brief report. Journal of Consulting and Clinical Psychology, 69(1), 130-134.
19. Testa, M., & Leonard, K.E. (2001). Impact of marital aggression on women's psychological and marital functioning in a newlywed sample. Journal of Family Violence, 16(2), 115-130.
20. Testa, M., & Leonard, K.E. (2001). The impact of husband physical aggression and alcohol use on marital functioning: Does alcohol "excuse" the violence? Violence and Victims, 16, 507-516.
21. Eiden, R.D., Edwards, E.P., & Leonard, K.E. (2002). Mother-infant and father-infant attachment among alcoholic fathers. Development and Psychopathology, 14, 253-278.
22. Leonard, K.E. (2002). Alcohol's role in domestic violence: A contributing cause or an excuse? Acta Psychiatrica Scandinavica, 106, (Suppl. 412), 9-14.
23. Leonard, K.E., & Mudar, P. (2003). Peer and partner drinking and the transition to marriage: A longitudinal examination of selection and influence processes. Psychology of Addictive Behaviors, 17, 115-125.
24. Schumacher, J. A., Fals-Stewart, W., & Leonard, K. E. (2003). Domestic violence treatment referrals for men seeking alcohol treatment. Journal of Substance Abuse Treatment, 24, 279-283.
25. Testa, M., Livingston, J.A., & Leonard, K.E. (2003) Women's Substance Use and Experiences of Intimate Partner Violence: A Longitudinal Investigation among a Community Sample. Addictive Behaviors, 28, 1649-1664.
26. Testa, M., Quigley, B.M., and Leonard, K.E. (2003). Does alcohol make a difference? Within-participants comparison of incidents of partner violence. Journal of Interpersonal Violence, 18, 735-743.
27. Kearns, J.N., & Leonard, K.E. (2004). The impact of changes in social network involvement on marital quality over the transition to marriage. Journal of Family Psychology, 18, 383-395.
28. Leonard, K.E., & Mudar, P. (2004). Husbands Influence on Wives' Drinking: Testing a Relationship Motivation Model in the Early Years of Marriage. Psychology of Addictive Behaviors.
29. Beach, S. R. H., Fincham, F. D., Nader, A., & Leonard, K.E. (In press). The Taxometrics of Marriage: Is Marital Discord Categorical? Journal of Family Psychology.
30. Edwards, E.P., Eiden, R.D., & Leonard, K.E. (In press). Behavior problems in 18 to 36 month old children of alcoholic fathers: Secure mother-infant attachment as a protective factor. Development and Psychopathology.
31. Fals-Stewart, W., Leonard, K. E., & Birchler, G. R. (In press). The Occurrence of Male-to-Female Intimate Partner Violence on Days of Men's Drinking: The Moderating Effects of Antisocial Personality Disorder. Journal of Consulting and Clinical Psychology.
32. Schumacher, J. A., & Leonard, K. E. (in press). Husbands' and wives' marital adjustment, verbal aggression, and physical aggression as longitudinal predictors of physical aggression in early marriage. Journal of Consulting and Clinical Psychology.

C. Research Support.

Ongoing Research Support

5-R01-AA10042-08 (Leonard) 01/01/95-03/31/05
NIAAA
Parenting and Infant Development in Alcoholic Families
Compare parenting and infant development in families with a father who is alcoholic to control families. Test maternal and infant temperament variables as mediators/moderators of infant development outcomes.
Role: PI

5-R01-AA12013-04 (Testa) 05/01/99-04/30/04
NIAAA
Alcohol, HIV Risk Behaviors & Sexual Victimization
This project is designed to examine the role of alcohol consumption, sexual activity and exposure to risky settings in the sexual victimization of young women.
Role: Co-PI

5R01-AA09922-08 (Leonard) 04/01/96-3/31/05
NIAAA
Alcohol and Early Marriage: Spouse and Peer Influence
This project is designed to examine the roles of individual differences, marital and peer influences on changes in drinking during the early year of marriage.
Role: PI

R21 AA14214-01A1 (Schumacher) 04/15/04-03/31/07
NIAAA
Partner Violence Intervention for Alcohol Clinic Clients
The goal of this Stage 1 treatment development grant is to develop and test a manual, based on the principles of Motivational Interviewing, intended to increase motivation to address issues of interpersonal violence in treatment-seeking male alcoholics.
Role: Consultant

Completed Research Support

5-R01-AA10617-05 (Leonard) 09/25/97-08/31/02 - completed
NIAAA
Alcohol and Bar Violence
This proposal focuses on the relationship between alcohol consumption and interpersonal aggression in a barroom setting. The research uses a conceptual framework derived from social information processing models and alcohol myopia theory, both of which suggest that alcohol limits information processing to salient cues that may impact on various aspects of aggressive behavior. The proposal plans to identify individual difference factors, social/physical context characteristics, and attributional approaches associated with barroom aggression.
Role: PI

BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME	POSITION TITLE
Bonnie Duran	Associate Professor
eRA COMMONS USER NAME	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
San Francisco State University	B.A.	1978	Health Science
University of California, Berkeley	M.P.H.	1989	Public Health Education
University of California, Berkeley,	Dr.PH	1997	Pub. Health Ed./Behav Sci

A. Positions and Honors

Positions and Employment

1991 Adjunct Faculty; Southwest Cultures Department, Fort Lewis College, Durango, CO. Course - Health Status and Issues in Communities of Color

1994 Adjunct Faculty; San Francisco State University, Masters Program -Community Health Education, San Francisco, CA. Course- Program Evaluation

1987-1995 Graduate Student Instructor, Graduate Research Assistant, University of California, Berkeley, School of Public Health

1995-Present Lecturer, Assistant Professor, Practicum Director; Associate Professor, Masters in Public Health Program, Department of Family and Community Medicine, University of New Mexico School of Medicine.

Other Academic and Research Administrative Positions

2001-Present Coordinator, Community Health Intervention Concentration, MPH Program

2004-Present Co-Director for Research, Center for Native American Health, UNMSOM

2003-Present Associate Director, Southwest Alcohol Research Group, Institute for Public Health, UNMSOM

Honors

1989-1991 Wellness Fellow, School of Public Health, University of California, Berkeley

1993-1995 AA Predoctoral Research Fellow, Prevention Research Center, Pacific Institute for Evaluation Research, Berkeley, CA

1997-1998, 2000-2001 University of New Mexico School of Medicine, Deans Award for Distinction, Outstanding Faculty Performance

B. Selected peer-reviewed publications (in chronological order)

1. Sleet, D., & Guillory, B. (1988). Participation for All in Health. *Hygie: The International Journal of Health Education, VII* (4), 11-14.
2. Guillory, B., Willie, E., & Duran, E. (1988). Analysis of a Community Organizing Case Study: Alkali Lake. *Journal of Rural Community Psychology, 9*(1), 27-35.
3. Duran, E., Guillory, B., & Villanueva, M. (1990). Third and Fourth World Concerns: Towards a Liberation Psychology. In G. Stricker, E. Davis-Russell, E. Bourg, E. Duran, W. R. Hammond, J. McHolland, K. Polite, & B. Vaughn (Eds.), *Towards Ethnic Diversification in Psychology Education and Training* (pp. 211-217). Washington, DC: American Psychological Association.

4. Duran, E., & Duran, B. (1995). *Native American Postcolonial Psychology*. New York: SUNY Press.
5. Duran, B. (1996). Indigenous versus Colonial Discourse: Alcohol and American Indian Identity. In E. Bird (Ed.), *Dressing in Feathers: The Construction of the Indian in American Popular Culture* (pp. 111-128). Boulder: Westview Press.
6. Duran, E., Duran, B., Yellow Horse, M., & Yellow Horse, S. (1998). Healing the American Indian Soul Wound. In Y. Danieli (Ed.), *International Handbook of Multigenerational Legacies of Trauma* (pp. 341-354). New York: Plenum Press.
7. Duran, E., Duran, B., Woodis, W., & Woodis, P. (1998). A Postcolonial Perspective on Domestic Violence in Indian Country. In R. Carrillo & J. Tello (Eds.), *Family Violence and Men of Color* (pp. 95-113). New York: Springer.
8. Duran, B., Duran, E., & Yellow Horse, B. H., Maria. (1998). Native Americans and the Trauma of History. In R. Thornton (Ed.), *Studying Native America: Problems and Prospects in Native American Studies*. Madison: University of Wisconsin Press.
9. Duran, B., & Duran, E. (1998). Assessing Needs, Planning and Implementation of Health Promotion, Disease Prevention among American Indian and Alaska Native Population Groups: Towards a Postcolonial Approach. In R. Kline & R. Huff (Eds.), *Promoting Health in Multicultural Populations*. Newbury: Sage Publications.
10. Duran, B., Bulterys, M., Iralu, J., Graham, C., Edwards, A., & Harrison, M. (2000). American Indians with HIV/AIDS: Health and social service needs, barriers to care and satisfaction with services among a western tribe. *Journal of American Indian and Alaska Native Mental Health Research*. 9(2) 22-36
11. Duran, B., & Duran, E. (2000). Applied Postcolonial Research and Clinical Strategies. In M. Battiste (Ed.), *Reclaiming Indigenous Voice and Vision* (pp. 86-100). Vancouver, Toronto: UBC Press.
12. Malcoe LH, Duran BM, Ficek EE (2002) Social stressors in relation to intimate partner violence against Native American women. Ann Epidemiology 2002; 12(7): 525.
13. Chavez, V., Duran, B., Avila, M. and Wallerstein, N. (2003). The Dance of Race and Privilege in Community Based Participatory Research. In: Minkler, M., Wallerstein, N., Eds. Community Based Participatory Research. San Francisco: Jossey Bass, In Press.
14. Wallerstein, N., Duran, B. (2003). The Conceptual, Historical and Practical Roots of Community Based Participatory Research and Related Participatory Traditions. In: Minkler, M., Wallerstein, N, Eds. Community Based Participatory Research. San Francisco: Jossey Bass.
15. Wallerstein, N., *Duran, B. M., Aguilar, J., Joe, L., Loretto, F., Toya, A., et al. (2003). Jemez Pueblo: built and social-cultural environments and health within a rural American Indian community in the Southwest. *Am J Public Health, 93*(9), 1517-1518.
16. Duran, B., Malcoe, L.H., Sanders, M., Waitzkin, H., Skipper, B., & Yager, J. (2004). Child maltreatment prevalence and mental disorders outcomes among American Indian women in primary care. *Child Abuse & Neglect, 28,* 131-145.
17. Duran, B., Sanders, M., Skipper, B., Waitzkin, H., Malcoe, L. H., Paine, S., et al. (2004). Prevalence and correlates of mental disorders among Native American women in primary care. *Am J Public Health, 94*(1), 71-77.
18. Duran, B., & Walters, K. (2004). HIV/AIDS prevention in "Indian Country": Current practice, indigenist etiology models, and postcolonial approaches to change. *AIDS Education and Prevention, 16*(3), 187-201.
19. Malcoe, L.H., Duran, B.M., Montgomery, J.M. (2004) Socioeconomic disparities in intimate partner violence against Native American women: a cross-sectional study. *BMC Medicine* 2:20.
20. Oetzel, J., & Duran, B. (2004). Intimate Partner Violence in American Indian and or Alaska Native Communities: A social ecological framework of determinants and interventions. *Journal of the Center for American Indian and Alaska Native Mental Health Research, 11*(4), 49-68.
21. Duran, B. (2004). Race, Racism and the Dharma. In H. G. Baldoquin (Ed.), *Dharma, Color, and Culture: New Voices in Western Buddhism* (pp. 135-140). Berkeley: Parallax Press.
22. Wallerstein, N., Duran, B., Minkler, M., & Foley, K. (2005). Developing and Maintaining Partnerships with Communities. In B. Isreal (Ed.), *Methods for conducting community-based participatory research for health*. San Francisco: Jossey Bass.

* Corresponding Author

23. Duran, B., Oetzel, J., Lucero, J., Jiang, Y., Novins, D., & Beals, J. (in press). Obstacles to care for rural American Indians seeking mental disorder or substance abuse treatment in three treatment sectors. *Journal of Consulting and Clinical Psychology.*
24. Oetzel, J., Duran, B., Lucero, J., Jiang, Y., Novins, D., & Beals, J. (Under Review). Rural Native Americans ' Perspectives of Obstacles in the Mental Health Treatment Process in Three Treatment Sectors. *Journal of Cultural Diversity and Ethnic Minority Psychology.*
25. Oetzel, J., *Duran, B., Lucero, J., Jiang, Y., (Under Review) Social support and social undermining as correlates for alcohol, drug, and mental disorders in American Indian women. Journal of Health Communication.

C. Research Support

HRSA/ Na'Nizhoozhi Center, Inc., Duran (Evaluator) 7/2002 – 7/2007
"Integrating HIV, Substance Abuse and Mental Health Services at the Navajo Nation"
The major goals of this project are to (a) increase access to mental health and substance abuse services among AI with HIV/AIDS and (b) to increase the awareness of HIV status among AI's at high risk for HIV. The target population is AI's on or near the Navajo Nation. It is to provide research technical assistance and evaluation services for a $1,000,000 grant to the Four Corners American Indian Circle of Services Collaborative through the Na'Nizhoozhi Center, Inc, the fiscal agent
Role: Project Evaluator

CDC U48/CCU610818-05 SIP24FR-02, Duran (Co-PI) 10/99-10/03
CDC, "Protective Social Factors in Tribes"
The major goals of this project are... A participatory research project aimed at developing measures of protective and social capital factors with two tribes in New Mexico.
Role: Co-PI

K01 MH02018-01A1, Duran (PI) 10/01-9/06
NIMH, "Pathways to Care for Native American Women"
This is a K0-1 grant that conducts secondary data analysis on Spero Manson's SUPERFPF data and 5 years of course work in quantitative research methods.

National Institute of General Medicine Science, Duran, (Co-PI) 10/01 - 9/05
Social Protective Factors of Tribes (IHS/NIH Initiative--Native American Research Centers for Health)
The major goal of this project is to extend the Centers for Disease Control grant to continue the study of meanings of social capital, community capacity and social cohesion for American Indian Populations.

* Corresponding Author

BIOGRAPHICAL SKETCH

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NAME	POSITION TITLE
Yvette Denise Roubideaux,	Assistant Professor
eRA COMMONS USER NAME	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
Harvard University	B.A.	1985	Biology
Harvard Medical School	M.D.	1989	Medicine
Harvard School of Public Health	M.P.H.	1997	Public Management & Community Health

A. Positions and Honors.

Positions and Employment

1989 – 92 Resident, Primary Care Internal Medicine Residency Program, Brigham and Women's Hospital, Boston MA
1989 – 92 Clinical Fellow, Harvard Medical School, Boston MA
1992 – 93 Medical Officer, San Carlos Indian Hospital, Indian Health Service, San Carlos AZ
1993 – 95 Clinical Director, San Carlos Indian Hospital, Indian Health Service, San Carlos AZ
1995 – 96 Medical Officer, Hu Hu Kam Memorial Hospital, Gila River Health Care Corporation, Sacaton AZ
1996 – 97 Fellow, Commonwealth Fund/Harvard University Fellowship in Minority Health Policy, Minority Faculty Development Program, Harvard Medical School, Boston MA
1996 – 97 Research Fellow, Department of Social Medicine, Harvard Medical School, Boston MA
1997 – 98 Fellow, Indian Health Fellowship, Native American Center of Excellence, University of Washington School of Medicine, Seattle WA
1997 – 98 Senior Fellow, Department of Medicine, University of Washington School of Medicine, Seattle WA
1998 – 1999 Clinical Assistant Professor, Public Health, Arizona Prevention Center, College of Medicine, University of Arizona, Tucson AZ
1998 - 2000 Deputy Director, Center for Native American Health, Arizona Prevention Center, College of Medicine, University of Arizona, Tucson AZ
1999 - Clinical Assistant Professor, Medicine, Department of Medicine, College of Medicine, University of Arizona, Tucson AZ
2000 - Assistant Professor, Public Health, Mel and Enid Zuckerman Arizona College of Public Health, University of Arizona, Tucson AZ
2001 - Director, Training Program, Inter Tribal Council of Arizona/University of Arizona American Indian Research Center for Health
2001 - Director, University of Arizona/Inter Tribal Council of Arizona Indians Into Medicine Program, University of Arizona
2004 - Co-Director, Coordinating Center, Special Diabetes Program for Indians Competitive Grant Program Diabetes Prevention and CVD Risk Reduction Demonstration Projects

Other Experience and Professional Membership

1989 - Member, Association of American Indian Physicians
1999 - Chair, Awakening the Spirit Team, American Diabetes Association
1992 - Member, American College of Physicians
1996 - Member, American Public Health Association
1998 - Member, American Diabetes Association
1999-2000 President, Association of American Indian Physicians
2004-2005 Co-Chair, Native Research Network, Inc.

Federal Government Public Advisory Committees

1997 -	Steering Committee, Operations Committee, National Diabetes Education Program, NIDDK/NIH
1997 -	American Indian Workgroup (Chair), National Diabetes Education Program, NIDDK/NIH, CDC
2000 - 2004	Indian Health Service Tribal Leaders Diabetes Committee Technical Workgroup
2000 - 2003	DHHS Secretary's Advisory Committee on Minority Health
2002 - 2003	AHRQ Healthcare Quality and Effectiveness Research Study Section member

Honors and Awards

1983 – 89	Indian Health Service Scholarship Program Award
1992 – 96	Outstanding Performance Awards, Indian Health Service
1993	Exceptional Performance Award, Phoenix Area Council of Service Unit Directors, Indian Health Service
1997	Dr. Fang-Ching Sun Memorial Award (for outstanding graduating student with a commitment to promote the health and well-being of the underserved, Harvard School of Public Health)
1999	Certificate of Appreciation, Chair of American Indian Workgroup, National Diabetes Education Program, NIH/CDC
1999	Certificate of Appreciation, Chair of the Community Interventions Workgroup, National Diabetes Education Program, NIH/CDC
1999	1999 Pfeiffer Spring Quarter Visiting Professor, Stanford University School of Medicine
2000	Award of Merit, National Diabetes Education Program, NIH/CDC
2001	Outstanding American Indian Faculty Award 2001-2002, University of Arizona
2003 – 2004	Featured in National Library of Medicine Exhibit "Changing the Face of Medicine: A Celebration of America's Women Physicians
2004	"Indian Physician of the Year" Award, Association of American Indian Physicians

A. Selected Peer Review Publications

1. **Roubideaux Y**, Moore K, Avery C, Muneta B, Knight M, Buchwald D. Developing Diabetes Education Materials: Recommendations of Tribal Leaders, Indian Health Professionals, and American Indian Community Members. The Diabetes Educator 26:290-294, 2000

2. Hodge F, Weinmann S, **Roubideaux Y**. Recruitment of American Indians and Alaska Natives into Clinical Trials. Annals of Epidemiology Monograph: Participation of Women and Minorities in Clinical Cancer Research, (10) (8) (2000)

3. **Roubideaux Y**. Perspectives on American Indian Health. Am J Public Health 92:1401-1403, 2002

4. Dixon M, **Roubideaux Y**. Promises to Keep: Public Health Policy for American Indians and Alaska Natives in the 21st Century. American Public Health Association, 2001.

5. **Roubideaux Y**, Buchwald D, Beals J, et al. Measuring the Quality of Diabetes Care for Older American Indians and Alaska Natives. Am J Public Health 2004;94:60-65.

6. Zuckerman Z, Haley JM, **Roubideaux Y**, Lillie-Blanton M. Health Service Access, Use and Insurance Coverage Among American Indians/Alaska Natives and Whites: What Role Does the Indian Health Service Play? Am J Public Health 2004; 94:53-59.

7. Moss MP, **Roubideaux Y**, Jacobsen C, Buchwald D, Manson S. Functional Disability and Associated Factors Among Older Zuni Indians. J Cross Cult Gerontol 2004;19:1-12.

8. Rhoades, DA, **Roubideaux Y**, Buchwald D. Diabetes Care Among Older, Urban American Indians and Alaska Natives." Ethnicity & Disease, Autumn 2004;14(4):574-579.

9. Roubideaux Y. A Review of the Quality of Healthcare for American Indians and Alaska Natives. The Commonwealth Fund, September 2004.

B. Research Support

Ongoing Research Support

AHRQ 1 P01 HS1-854-03 Manson (PI) 9/30/00-9/29/05
Sponsor: AHRQ/DHHS
Understanding and Reducing Native Elder Health Disparities
The major goal of this project is to understand and reduce Native Elder health disparities, through research on Elder health issues. Dr. Roubideaux is the Research Project 1 Leader and a Co-Investigator. UCHSC Subcontract No. FY01.001.008 with Arizona Board of Regents, University of Arizona. RP1Title: Measuring the Quality of Care in Indian Health Diabetes Education Programs. The major goal of this project is to determine if the quality of diabetes care varies as a function of the level of diabetes education program activities.
Role: Research Project 1 Leader, Co-Investigator

P60 MD00507-01 Manson (PI) 9/30/03-9/29/08
Sponsor: NCMHD/NIH
American Indian and Alaska Native Health Disparities: Project EXPORT Center
The major goal of this project is to establish a center to conduct research and training to facilitate AIAN health disparities research. UCHSC Subcontract with Arizona Board of Regents, University of Arizona. RP2 Title: Measuring the Quality of Care for AIAN children and young adults with diabetes. The major goal of this project is to assess the quality of diabetes care for young adults and children with diabetes and to determine if implementation of programs focused on these groups results in better diabetes care.
Role: Research Project 2 Leader, Co-Investigator

HHS1242200400049C Manson (PI) 9/30/04 – 9/29/08
Sponsor: IHS (HHS-CGP RFP0406VZ)
SDPI Competitive Grant Program Coordinating Center
The major goal of this project is to coordinate the activities and conduct the evaluation of the SDPI Competitive Grant Program, which is a demonstration project on diabetes prevention and CVD risk reduction in 66 American Indian and Alaska Native communities.
Role: Co-Director, Coordinating Center; Resource Core Director, Dissemination Core Director

NIA P30 AG15292 Manson (PI) 9/30/97 - 06/30/07
Sponsor: NIA/NIH
The Native Elder Research Center
The major goals of the Native Elder Research Center include developing a Native Investigator career development program for American Indian and Alaska Natives.
Role: Core Faculty, Native Investigator Program

Sponsor: IHS/NIH Lewis (PI) 9/02/01 - 8/31/05
American Indian Research Center for Health
The major goal of this project is to increase the number of American Indians and Alaska Natives who participate in and conduct research.
Role: Training Program Director

Completed Research Support

NIA P30 AG15292 Manson (PI) 10/01/97 - 06/30/02
Sponsor: NIA/NIH
The Native Elder Research Center
The major goals of the Native Elder Research Center include developing a Native Investigator career development program for American Indian and Alaska Natives. Pilot study funded entitled: "Using Diabetes Education Program Criteria to Measure the Quality of Indian Health Diabetes Programs."
Role: Principal Investigator Pilot Study

CDC 99IPA6030 Roubideaux (PI) 11/17/98-11/16/02
Sponsor: DDT/CDC
Title: Intergovernmental Personnel Agreement
Intergovernmental Personnel Agreement, Centers for Disease Control and Prevention. The major goal of this project is to assist the Division of Diabetes Translation in its national Native American projects, including the National Diabetes Education Program, and to conduct statistical analyses of diabetes-related data.
Role: Consultant/Medical Epidemiologist

Contract: IHS National Diabetes Program Roubideaux (PI) 7/1/02-6/30/03
Evaluation of the Special Diabetes Program for Indians
The major goal of this project is to evaluate the Special Diabetes Program for Indians.
Role: Co-Investigator

Contract: The Henry J. Kaiser Family Foundation Roubideaux (PI) 1/1/00-1/31/05
The Kaiser Native American Health Policy Fellowship Program
The major goal of this project is to mentor fellows on writing policy papers and to participate in ongoing research and projects on AIAN health
Role: Consultant

Contract: The Commonwealth Fund Roubideaux (PI) 1/1/03-3/31/04
Measuring the Quality of Healthcare for American Indians and Alaska Natives
The major goal of this project is to conduct a review of the quality of care for AIANs and to coordinate a conference to set an agenda for future research in this area
Role: Principal Investigator

Contract: IHS National Diabetes Program Roubideaux (PI) 7/1/03-12/31/04
Evaluation of the Special Diabetes Program for Indians
The major goal of this project is to assist in the evaluation the Special Diabetes Program for Indians and to help develop and evaluate a new competitive grant program.
Role: Co-Investigator

Contract: Office of Minority Health/DHHS, AAIP Roubideaux (PI) 1/1/03-12/31/04
Evaluation of the NDEP American Indian Youth Move It Pilot Program
The major goal of this project is to evaluate pilot activities and interventions developed by BIA schools that used the NDEP American Indian Youth Campaign materials
Role: Consultant

BIOGRAPHICAL SKETCH

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Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME	POSITION TITLE
Mays, Mary Z.	Research Associate Professor
eRA COMMONS USER NAME	
Maysmz	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
Trinity University, San Antonio, TX	B.A.	1973	Psychology
University of Oklahoma, Norman, OK	M.S.	1975	Exp. Psychology
University of Oklahoma, Norman, OK	Ph.D.	1977	Exp. Psychology

A. Positions and Honors

Positions and Employment

1977 - 1979 Assistant Professor, Department of Psychology, University of Maryland, European Division
1980 - 1990 Adjunct teaching positions for undergraduate and graduate courses in psychology, research methods, and statistics
1979 - 1982 Chief, Analysis Branch, Academy of Health Sciences, San Antonio, TX
1982 - 1986 Principal Investigator, Medical Research Institute of Chemical Defense, Edgewood, MD
1986 - 1990 Associate Professor, Dept. of Behavioral Sciences, Air Force Academy, Colorado Springs, CO
1988 - 1990 Director, Research and Laboratories, Dept. of Behavioral Sciences, Air Force Academy, Colorado Springs, CO
1990 - 1993 Director, Human Performance and Neuroscience Division, Research Institute of Environmental Medicine, Natick, MA
1991 - 1992 Planner, Office of the Assistant Secretary of the Army for Research, Development, and Acquisition, Pentagon, Washington, DC
1993 - 1995 Planner, Science and Technology Programs, Army Medical Research and Materiel Command, Frederick, MD
1995 - 1997 Analyst, Center for Healthcare Education and Studies [Computer Data Systems, Inc.], San Antonio, TX
1995 - 2001 Director, Eagle Creek Research Services, San Antonio, TX
1996 - 2001 Associate Professor of Statistics, University of Texas Houston Health Sciences Center, Graduate Program in Nursing Anesthesia, Academy of Health Sciences, San Antonio, TX
2001 - 2003 Biostatistician, Office of Research, College of Medicine, University of Arizona, Tucson, AZ
2002 - Research Associate Professor, Department of Family and Community Medicine, College of Medicine, University of Arizona, Tucson, AZ

Other Experience and Professional Memberships (representative selection)

1974 - 1998 American Psychological Association
1998 - American Statistical Association
1998 - 2005 Member, National Institutes of Health, Study Section - Behavioral Medicine, Interventions and Outcomes (formerly Risk, Prevention and Health Behavior 3)
2003 - 2005 Chair, Data and Safety Monitoring Board, National Heart, Lung, and Blood Institute, Consortium for Translation of Psychosocial Depression Theories to Intervention & Dissemination (COPES)
2004 - American Public Health Association

Honors (representative selection)

1973 Bachelor of Arts, cum laude, Trinity University
1982 Medical Service Corps Junior Officer of the Year
1990 W. P. Clements Award for Outstanding Educator, U. S. Air Force Academy
1997 Science and Technology Leadership Award, Computer Data Systems, Inc.

B. Selected peer-reviewed publications (in chronological order).

1. Seybert JA, Mays MZ, Littlejohn RL, Mellgren RL, Haddad NF. Differential runway performance using goalbox placements and running trials as discriminative stimuli. Quarterly Journal of Experimental Psychology, 30:121-132, 1978.
2. Jobe JB, Mays MZ, Mellgren RL Reinstatement of retrieval cues, intertrial interval, and resistance to extinction. Bulletin of the Psychonomic Society, 19:163-164, 1982.
3. Mellgren RL, Mays MZ, Haddad NF. Discrimination and generalization by rats of temporal stimuli lasting for minutes. Learning and Motivation, 14:75-91, 1983.
4. Mays MZ, McDonough JH, Modrow HE, Murrow ML, Alvarez R, McCreesh DA. Performance on a one-way avoidance conditioning task following nerve agent intoxication. Chemical Defense Bioscience Review, 5:247-258, 1985.
5. McDonough JH, Jaax NK, Crowley RA, Mays MZ, Modrow HE. Atropine and diazepam therapy protects against soman-induced neural and cardiac pathology. Fundamental and Applied Toxicology, 13:256-276, 1989.
6. Romano JA, Terry MR, Murrow ML, Mays MZ. Protection from lethality and behavioral incapacitation resulting from intoxication by soman and treatment with atropine sulfate and 2-pam chloride in the guinea pig. Drug and Chemical Toxicology, 14:21-44, 1991.
7. Mays MZ. Cognitive performance deficits in a sustained multi-stressor environment. Nutritional and immunological assessment of Ranger students with increased caloric intake. RL Shippee, et al. U. S. Army Research Institute of Environmental Medicine, pp. 7-1 to 7-17, 1994.
8. Mays MZ. Impact of underconsumption on cognitive performance. Not Eating Enough: Overcoming Underconsumption of Military Operational Rations. BM Marriott, (Ed.) Washington DC: National Academy Press, pp. 285-302, 1995.
9. Lieberman HR, Mays MZ, Shukitt-Hale B, Chinn KS, Tharion WJ. Effects of sleeping in a chemical protective mask on sleep quality and cognitive performance. Aviation, Space, and Environmental Medicine. 67(9):841-848, 1996.
10. Mays MZ. Application of performance assessment technology to military nutrition research. Emerging Technologies for Nutrition Research. S J Carlson-Newberry R B Costello, (Eds.) Washington DC: National Academy Press, pp. 519-532, 1997.
11. Byers VL, Mays MZ, Mark DD. Provider satisfaction in Army primary care clinics. Military Medicine. 164(2):132-135, 1999.
12. Abbott C, Byers V, Mays M, Lester V, Sims B, Porritt R. Medic Training 2000. U.S. Army Medical Department Center and School, # HR00-001B, 2000.
13. Mark, DD, Byers, VL, Mays, MZ. Primary care outcomes and provider practice styles. Military Medicine. 166(10):875-880, 2001.
14. Johnson PD, Goldberg SJ, Mays MZ, Dawson, BV. Threshold of trichloroethylene contamination in maternal drinking waters affecting fetal heart development in the rat. Environmental Health Perspectives 111(3): 289-292, 2003.
15. Young-McCaughan S, Mays MZ, Arzola SM, Yoder LH, Dramiga SA, Leclerc KM, Caton Jr. JR, Sheffler RL, Nowlin MU. Change in exercise tolerance, activity and sleep patterns, and quality of life in patients with cancer participating in a structured exercise program. Oncology Nursing Forum 30(3):441-454, 2003.
16. He DS, Bosnos B, Mays M, Marcus F. Assessment of myocardial lesion size during in vitro radiofrequency catheter ablation. IEEE Transactions in Biomedical Engineering 50(6):768-776, 2003.
17. Keim SM, Mays MZ, Grant D. Interactions between emergency medicine programs and the pharmaceutical industry. Academic Emergency Medicine 11(1):19-26, 2004

C. Research Support

Ongoing Research Support

1R01CA09395701 Muramoto (PI) 7/1/02 - 6/31/06
NIH/NCI
Community-based Training Models for Tobacco Cessation
The purpose of this project is to conduct a controlled randomized trial of tobacco cessation training models.
Role: Biostatistician

6UD1SP09428022 Gray (PI) 9/29/01 - 4/30/05
SAMHSA/CSAP/CIPI
Effectiveness of a Culturally Focused Skills Enhancement Approach to Reduce Alcohol Use in Native American Women
The purpose of this project is to develop and evaluate the effectiveness of a culturally-based cognitive behavioral intervention on alcohol use among women of the Pascua Yacqui tribe.
Role: Biostatistician

1UD1SP10629 Gray (PI) 9/30/03 - 9/29/06
SAMHSA/CSAP/CIPI
Capacity Expansion of Inhalant Use Prevention Infrastructure and Interventions in an Urban American Indian Community
The purpose of this project is to evaluate the long-term effectiveness of a multi-dimensional program of substance abuse prevention in a Pascua Yaqui village.
Role: Biostatistician

1H79SP10596 Gray (PI) 9/30/03 - 9/29/08
SAMHSA/CSAP/CIPI
Integrated Substance Abuse and HIV Prevention Services for Adolescent and Young Adult Native Women
The purpose of this project is to develop and evaluate the effectiveness of an integrated program of substance abuse and HIV prevention in men and women of the Pascua Yaqui tribe.
Role: Biostatistician

5K30HL0451903 Sherrill (PI) 9/30/00 - 8/31/05
NIH/NHLBI
Arizona Clinical Research Training Program
The purpose of this project is to provide formal training for clinicians transitioning to patient-oriented research careers.
Role: Co-Director; Teaching Faculty

1D12HP0015801 Bassford (PI) 9/1/02 - 8/31/05
DHHS/HRSA
Academic Administrative Units in Primary Care
The purpose of this project is to build infrastructure that supports research mentoring for medical faculty.
Role: Biostatistician

FCM 062004 Weiss (PI) 6/1/04 – 12/31/05
Pfizer
Health Literacy: The Newest Vital Sign
The purpose of this project is to create a short, scenario-based health literacy test with excellent criterion validity.
Role: Biostatistician

Ongoing Research Support (continued)

5D34HP020770500 Garcia (PI) 9/1/99 – 8/31/06
DHHS/HRSA
Centers of Excellence - Hispanic
The purpose of this project is to support research mentoring for Hispanic faculty.
Role: Biostatistician

0401066A Duncan (PI) 7/1/04 – 6/30/07
ADCRC
Acupuncture as Complementary Therapy for Cerebral Palsy
The purpose of this randomized controlled trial, which is a collaboration between the Beijing Children's Hospital and the University of Arizona Health Sciences Center, is to determine the effect of intensive acupuncture and physicial therapy in remediating spasticity in children with cerebral palsy.
Role: Biostatistician

Completed Research Support (representative selection)

6U79SP09982012 Gray (PI) 9/29/02 - 9/28/04
SAMHSA/CSAP/CIPI
Inhalant Use Prevention Infrastructure Development in an Urban American Indian Community
The purpose of this project is to develop and evaluate the effectiveness of a multi-dimensional program of substance abuse prevention in a Pascua Yacqui village.
Role: Biostatistician

1T02MC0004601 Muramoto (PI) 6/1/02 - 5/31/05
DHHS/HRSA
Substance Abuse Distance Learning to Enhance Maternal and Child Health Services
The purpose of this project is to significantly upgrade the leadership capacity of the Maternal and Child Health workforce by providing up-to-date information on how to plan, implement, and evaluate substance abuse interventions.
Role: Biostatistician

Young-McCaughan (PI) 6/30/01 - 6/29/04
DOD
Long-term Exercise Intervention for Patients with Cancer
The purpose of this project is to define the long-term effects of exercise on the physical and psychological outcomes of patients with cancer.
Role: Biostatistician

Rice (PI) 9/21/99 - 3/01/02
DOD
Medical Surveillance of Musculoskeletal Injuries
The purpose of this project is to build a surveillance system to track the incidence and prevalence of injuries, to identify factors increasing the risk of injury, and to identify targets for intervention to prevent injury.
Role: Co-investigator

Gilcreast (PI) 6/30/97 - 6/29/01
DOD
Preventing Heel Ulcers in High Risk Inpatients
This project was a randomized clinical trial of three devices designed to prevent heel ulcers among inpatients high risk.
Role: Biostatistician

OTHER SUPPORT

KOSS, MARY P. (SPONSOR)
None.

GOLDMAN, DAVID (CO-SPONSOR)
None.

LEONARD, KENNETH (CONSULTANT)
None.

DURAN, BONNIE (CONSULTANT)
None.

ROUBIDEAUX, YVETTE (CONSULTANT)
None.

MAYS, MARY (CONSULTANT)
None.

RESOURCES

FACILITIES: Specify the facilities to be used for the conduct of the proposed research. Indicate the performance sites and describe capacities, pertinent capabilities, relative proximity, and extent of availability to the project. Under "Other," identify support services such as machine shop, electronics shop, and specify the extent to which they will be available to the project. Use continuation pages if necessary.

Laboratory:

Clinical:

Animal:

Computer:

Purchases of a computer and printer are included in the proposed budget. These items will be used specifically to achieve the aims of the career development and research plans.

Office:

Dr. Yuan will have an office in the Roy P. Drachman Hall, the future home of the Mel and Enid Zuckerman College of Public Health. The building is expected to open in late 2005 or early 2006.

Other:

Dr. Yuan will have access to the services offered by the College's Business and Financial Office and the Dean's Office. She will also have access to the University's libraries and other resources on campus.

MAJOR EQUIPMENT: List the most important equipment items already available for this project, noting the location and pertinent capabilities of each.

Fully-furnished office
Fax
Copier
Basic office equipment including calculators, storage cabinets, filing cabinets, bookshelves, window croverings, etc.

INTRODUCTION TO REVISED K23 APPLICATION

This application is the first revision of a K23 research career development award application (1 K23 AA014606-01). I thank the reviewers for their careful reading of my previous application. I believe that my revised application is much stronger as a result of their feedback. My career goals remain the same; however, a number of significant changes have been made to the career plan, list of mentors, and research project to address the feedback and reflect the research training that I have received since the first submission in 2003. I currently have a better understanding of the skills and knowledge that I must acquire to launch an independent research program in alcohol problems, violence, and minority mental health. My responses to each of the reviewer's concerns are summarized in this introduction. *In the body of the application, paragraphs with significant changes are italicized.*

RESPONSES TO REVIEWER 1

1. "...her publication record to date seems somewhat limited..."

I have improved my publication record since the first submission, including two published empirical papers based on the Ten Tribes Study dataset. I am second author on the first publication and first author on the second publication that has been accepted with revision by the Journal of Interpersonal violence (copies are attached). I am first author on a third paper on psychiatric comorbidity that has been submitted for publication. In addition, I have written two book chapters on male partner violence. My updated biosketch provides specific details.

2. "...lack of any specific coursework on alcohol issues..."

I have corrected this oversight and included three formal training activities on alcohol issues in Section C of The Candidate. They include summer courses at Johns Hopkins Bloomberg School of Public Health and an independent study on alcohol measurement and research methods with Dr. Leonard (consultant).

RESPONSES TO REVIEWER 2

3. "...publication record is modest..."

See response 1 above.

4. "...plan for obtaining guidance on manuscripts and grant application is not well-delineated...."

My mentors revised their statements of commitment to provide more detailed information about providing guidance in manuscript and grant writing. This activity will be one of the main priorities of the in-person and telephone meetings. In addition, email communications will be used to send drafts and obtain feedback from mentors.

5. "It is not clear...the manuscripts planned for each year..."

I have revised the timeline to indicate the submission of a review paper on alcohol use and marital violence during Year 2 and empirical papers based on findings from Research Aims 1-3, respectively, in subsequent years.

6. "...not clear which research results will be available in year 4..."

In the revised timeline I have provided clarification of the analyses that will be performed and data collected prior to the submission of an R01 application in Year 3. By Year 3, gene-environment interaction and qualitative analyses from the Ten Tribes data set will be completed and findings from the pilot study will be available. The results from three previous manuscripts based on the Ten Tribes Study dataset will also support the development of a new grant application.

7. "...whether bi-annual meetings will be sufficient..."

To address this concern, my out-of-state mentors agreed to increase the frequency of in-person meetings. This revision is documented in the mentors' statements and timeline of career development activities. I have planned in-person meetings with my out-of-state mentors at least once a year at their respective places of

employment and/or annual professional meetings. I will meet with my local mentors on a more a frequent basis, as often as bi-weekly.

8. "...analysis of the direction of effects from alcohol misuse to trauma...not well-supported..."

I agree with this concern and have deleted this aim from Section A of the Research Plan. The Ten Tribes dataset does not include longitudinal data and thus, is not suitable for directional analysis of the relationship between alcohol misuse and trauma. Two new research aims have been added to Section A to collect pilot data and design a follow-up investigation with participating tribes of the Ten Tribes Study. One of the key objectives of these activities is to address the limitations in the existing cross-sectional dataset.

9. "...the analyses and models proposed appear to be relatively simplistic..."

I proposed the gene-environment models because the results will facilitate an accumulation of knowledge and be consistent with the analytic approach used by Caspi and colleagues (published in Science in 2002). They used similar models to examine the gene-environment interaction of MAOA expression and childhood maltreatment on the development of antisocial behavior.

10. "...unclear an exemption has been applied for..."

I corrected this oversight and have included more detailed information about human subjects research in Section E of the Research Plan. The revised Section E of my application makes it clear that a Project Approval Form for Exemption 4 for the secondary analyses project will be submitted to the IRB at the University of Arizona following the submission of this application. Because this revision proposes collection of new data, a second submission to IRB also will be necessary. I will obtain human subjects approval for the pilot study prior to study initiation. Section E includes a description of the Protection of Human Subjects for the pilot study.

11. "...candidate will need to rent her space using funds from this award..."

This is no longer applicable. I will have an office in the future permanent home of the College of Public Health. We are expected to move into the new building (Roy P. Drachman Hall) between December 2005 and January 2006. I will not be required to pay rent or maintenance fees for this new office.

RESPONSES TO REVIEWER 3

12. "...does not have a strong publication record..."

See response 1 above and attached biosketch.

13. "...additional training in alcohol use measures..."

See response 2 above.

14. "...more specificity is needed about the tutorials to be undertaken with various advisors..."

In Section C of The Candidate and the mentors' statements, there is an expanded discussion of specific tutorials that will be completed with each advisor. I have provided more detail about how I will benefit from each researcher's area of expertise and included some new activities, such as independent study projects with Drs. Leonard and Roubideaux and collaboration on a review paper with Dr. Leonard. These changes address the reviewers' concerns as well as accurately reflect my improved understanding of my current training needs.

15. "...no training or experience in developing a research project independently..."

Although there was some disagreement among reviewers about the value of a research plan consisting of secondary analyses, I revised Section A of the Research Plan to include aims that propose new data collection and research collaboration to design a follow-up study with the participating tribes of the Ten Tribes Study (Aims 4 and 5). I plan to apply newly gained skills in qualitative research methods and community-based participatory research approaches to accomplish these aims. In addition, I will disseminate the findings of the secondary analyses phase of the Research Plan to help foster the research collaboration and identify areas for future investigation.

16. "...not demonstrated an understanding of alcohol problems to the data..."

Given that alcohol dependence is associated with various negative outcomes, the primary focus of the secondary analyses is to examine factors associated with alcohol dependence. The Ten Tribes Study included the administration of the Alcohol Use Disorders and Associated Disabilities Interview Schedule and thus, the dataset consists of several variables related to alcohol consumption and experiences. As indicated in The Candidate section, I will receive training on alcohol measurement and research methods during the initial years of the grant period. I will apply the knowledge to expand on the proposed secondary analyses. Similar to the research by Caspi and colleagues (2002), I will test gene-environment interactions on additional alcohol outcome measures that may be linked with anxiety-related phenotypes.

17. "...additional letters from advisors appear to be boilerplate..."

As mentioned in responses 4 and 14, the advisors have revised their letters and included individualized mentoring plans. I believe that improvements in the letters reflect, in part, the fact that I have had the opportunity to work with many of my advisors during the past two years. I have also replaced two advisors with researchers who are familiar with my past work, are a better match for the goals presented in this application, and are able to provide mentoring locally (i.e., work at the University of Arizona). Specifically, Yvette Roubideaux, M.D., M.P.H., will replace Norma Gray as a mentor on conducting research with Native Americans. Mary Mays, Ph.D., will replace John Fluke as a mentor on research methodology and biostatistics. Biosketches and statements from Drs. Roubideaux and Mays are included in this application.

1. THE CANDIDATE

"I urge you to remember my parting words - be ashamed to die until you have won a victory for humanity." These words by Horace Mann, which inspired my desire to reduce the stigma of mental illness as a clinical psychologist, now contribute to my aspirations of pursuing a research career to promote the public health of marginalized and underserved populations. My specific interest is to pursue a research career on the causes, consequences, and responses to alcoholism and violence among Native American and other vulnerable communities. High prevalence rates of alcoholism and victimization among Native Americans are well-documented, but strategies to effectively reduce the impact of these problems on physical and mental conditions have yet to be established. This is due, in part, to the lack of research on the relationship between alcohol abuse and violence among this high-risk population. The Mentored Patient-Oriented Research Career Development award would provide me with the necessary training to develop a research career in this area with an emphasis on genetic, environmental, and cultural risk and protective factors. I want to broaden my research training so I am able to collaborate with multidisciplinary teams to address public health problems on three levels: the individual, the community, and society.

1A. CANDIDATE'S BACKGROUND

Undergraduate Training

I completed a Bachelor of Arts degree in Biopsychology at Oberlin College in 1995. My degree combined coursework in the biological and social sciences. My involvement in the Asian-American student organization led to an increased awareness of the political and social issues relevant to minority populations in the United States.

Pre-Graduate Work Related Experience

After graduating from college, I worked as a full-time research assistant at Georgetown University Medical Center for two years. I worked on several federally-funded research projects that influenced my interests in interpersonal trauma, women's health, and public mental health. The study that had the greatest impact on my career goals was an NIMH-funded multi-university trauma study led by Bonnie Green, Ph.D. I conducted over 50 face-to-face Structured Clinical Interviews for DSM-III with college women who had experienced one or more traumatic experiences. Many women reported histories of both alcohol abuse and violence victimization. In addition, I was responsible for recruitment for an intervention study for survivors of breast cancer, a community mental health study with minority women, and clinical drug trials for PTSD and bipolar depression. From these experiences, I was a witness to the long-lasting negative impact of trauma on mental and physical health and the associations of trauma with alcohol problems. I realized that research

plays a vital role in improving the health of these individuals by obtaining knowledge that contributes to the development of prevention and intervention programs.

Graduate Training

In 1997, I began the doctoral degree program in Clinical Psychology at Bowling Green State University (BGSU). My graduate work included advanced training in psychopathology, psychological assessment, theory and techniques of psychotherapy, ethics, research methods, and statistics. At BGSU, I pursued my interests in alcohol problems and relationships with separate research projects. My Master's thesis was a longitudinal study on patterns of alcohol consumption and alcohol expectancies during the first semester of college (advisor: Harold Rosenberg, Ph.D.). Using repeated measures ANOVAS, I found that drinking patterns were relatively unstable, whereas expectancies were relatively stable during the first semester of college. My dissertation thesis investigated the day-to-day course of non-distressed romantic relationships (advisor: Dara Musher-Eizenman, Ph.D.). Using time series and dynamic factor models, I found gender differences in patterns of within-person variability in relationship satisfaction, mood, and interaction behaviors.

From 2001 to 2002, I completed a clinical psychology internship at the Louisiana State University School of Medicine in New Orleans, Louisiana. My primary rotations were in adult and adolescent inpatient psychiatry in two state hospitals. I also provided a range of outpatient services, including psychotherapy to children and families referred by the Violence Intervention Program (director: Joy Osfosky, Ph.D.). The internship broadened my clinical skills to help individuals from diverse socioeconomic and cultural backgrounds, many of whom had been victims of violence.

Post-Doctoral Training

Mel and Enid Zuckerman College of Public Health, University of Arizona. Upon completing my psychology internship, I sought postdoctoral research training to be further mentored towards an independent research career focusing on alcohol problems, violence, and minority mental health. Since July 2002, I have held a part-time position as a postdoctoral research scientist at the Mel and Enid Zuckerman College of Public Health. Under the direction of Mary Koss, Ph.D., my responsibilities include analysis, interpretation, and dissemination of findings from the psychosocial portion of the Ten Tribes Study data set. The Ten Tribes Study was a NIAAA-funded contract to design a study and collect data on prevalence rates and genetic and environmental risk factors of alcohol problems and violence among Native American tribes. With additional supervision from David Goldman, M.D. at NIAAA, *I have co-authored three manuscripts based on my analysis of the alcohol and violence data. I am second author on a paper on childhood risk factors and alcohol dependence published by the American Journal of Preventive Medicine in 2003. I am first author on two empirical papers: (1) a paper on adult physical assault and rape that has been accepted for publication with revision by the Journal of Interpersonal Violence; and (2) a paper on alcohol dependence and psychiatric comorbidity that has been submitted for publication. I have also written additional data reports as requested by specific tribes to support the development of health services. To date, working on the Ten Tribes Study has not only advanced my understanding of alcohol problems and violence among Native Americans, but sensitized me to the unique competencies and research practices that must be developed to work with sovereign tribal nations.*

Under the guidance of Dr. Koss, I have had additional opportunities to develop my skills in writing in the area of interpersonal violence. *I am a co-author on a published manuscript and book chapter on depression and PTSD in survivors of male violence. In addition, I recently co-wrote a book chapter on male partner violence for the upcoming second edition of the Encyclopedia of Stress.*

CODAC Behavioral Health Services, Inc. From October 2002 to January 2004, I worked part-time as a behavioral health clinician at CODAC Behavioral Health Services, Inc. to fulfill the post-doctoral training requirements for psychology licensure in Arizona (supervisor: Marla Perry, Ph.D.). I provided a range of outpatient services, including intake evaluations and individual and group psychotherapy to adults who receive state assistance. As a result, I enhanced my clinical skills working with low-income populations with diverse mental health problems, including individuals with co-occurring disorders. *Upon completing the required 1500 post-doctoral clinical hours for licensure, I ended my position at CODAC. I passed the national psychology board exam and received a psychology license from the Arizona Board of Psychologist Examiners in December 2004.*

College of Medicine, University of Arizona. When the funds from the NIAAA contract were expended and I completed the clinical requirements for licensure, I accepted a research associate position in the Department of Family and Community Medicine, University of Medicine. In addition, I obtained a small supplemental contract at .20 FTE to continue my research position in the College of Public Health. Under the mentorship of Myra Muramoto, M.D., M.P.H., I have expanded my knowledge of addictions to include tobacco use. I have also developed skills in several important research methodologies relevant to public health research, including community collaborations, clinical trials designs, and qualitative methods. My primary responsibilities include development of a tobacco cessation training curriculum, design of quantitative and qualitative evaluation instruments, data management, and production of manuscripts and conference presentations for Project Reach. Project Reach (PI: Dr. Muramoto) is a NCI-funded community-based randomized controlled trial comparing in-person and Web-based trainings for brief tobacco cessation intervention. My work on Project Reach has given me the opportunity to experience the challenges of collaborating with community partners and recruiting and implementing a longitudinal investigation with a large community sample. I have also increased my skills to work with a multidisciplinary team of researchers, computer programmers, system analysts, and health educators.

In the Department of Family and Community Medicine, I have kept up to date on some of the current alcohol literature in my role as an instructor for the Substance Abuse Distance Learning Course on adolescents. I wrote the curriculum for the module on prevalence and risk factors for tobacco and alcohol abuse among adolescents.

1B. CAREER GOALS AND OBJECTIVES: SCIENTIFIC BIOGRAPHY

Professional Goal

My professional goal is to develop a research career focused on the causes, consequences, and responses to alcoholism and violence among Native American and other vulnerable populations. In particular, I want contribute to the research on genetic, environmental, and cultural risk and protective factors, producing findings that lead to the development of prevention and intervention strategies tailored for different tribes.

Career Theme

The main themes of my scientific history and my current career development plan include biological and psychological influences of behavior, substance use disorders, interpersonal trauma, minority mental health, and longitudinal design and analysis.

Rationale for Seeking a Career Development Award

Initially, my training focused primarily on psychological assessment and treatment of college students, many of whom experienced childhood and/or adulthood trauma. Later, while working as a clinician in New Orleans and Tucson, my attention was drawn to high prevalence rates of alcoholism, other psychiatric disorders, and interpersonal violence among low-income and minority populations. The postdoctoral research position at the College of Public Health provided a unique opportunity to integrate my research interests and expand my knowledge of alcohol problems and violence with an emphasis on Native American mental health. This position also introduced training on genetic vulnerabilities of psychiatric disorders, which permitted me to reconnect to my undergraduate training in biology. The accumulation of those experiences shifted my interests from working at the individual level to conducting community-based research, leading to program development and policy change. As a result, I submitted the first K23 application in February 2003.

I am submitting a revised application because my interests in research work focusing on alcohol problems in vulnerable populations remain strong and because I believe that the opportunities to support and maintain my research career at the University of Arizona have grown significantly since my last application. Since 2003, I have learned more about the problems of violence and psychiatric comorbidity among Native Americans as a result of conducting secondary analyses, writing papers, and interacting with tribes of the Ten Tribes Study. I have a deeper appreciation for the need for collaborative research investigations to support community-based programming as a result of my communications with tribal Health Directors. And, I have obtained hands-on experiences in recruitment and implementation of a large community-based clinical trials investigation as a post-doctoral research scientist in the College of Medicine. Although I have learned a great deal, the sum of these experiences has highlighted for me the need for continued professional development and competencies

that I need to sustain an independent research program in community-based participatory alcohol and violence studies with Native American tribes. On the basis of my training needs, I have developed this revised application. Of note, there are various terms used to describe the aboriginal people of the United States. In this application, I primarily use the term "Native American" because that is the preferred term by tribes of the Ten Tribes Study.

Short-Term Professional Goals

My short-term professional goals include the following:

1. Develop in-depth knowledge of the literature on alcoholism, psychiatric and genetic epidemiology, violence, and minority mental health.
2. Build additional skills in quantitative and qualitative research methodologies, assessment, multivariate statistics, and ethics.
3. Advance knowledge of Native American history, culture and mental health issues with emphasis on tribal differences.
4. *Strengthen existing relationships with Native American tribes to support future research collaborations.*
5. Expand experiences in writing empirical and review papers for peer-reviewed journals and conducting presentations at national conferences.
6. Strengthen grant writing skills and be successful in obtaining federal funding for an independent research proposal.
7. Serve the mission of the Mel and Enid Zuckerman College of Public Health by collaborating with multidisciplinary research teams to design and implement research projects, leading to alcohol and violence prevention and intervention programs serving Native American communities in Arizona.

Long-Term Professional Goals

My long-term professional goal is to contribute to the growing body of knowledge on the roles of genetic, environmental, and cultural vulnerabilities in the development of alcoholism and other psychiatric disorders, including trauma-related stress reactions, among minority populations. To meet this goal, I will:

1. Advance knowledge of Native American health issues and broaden expertise of cultural diversity to include other minority and vulnerable populations, including US/Mexico border communities.
2. Develop assessment tools and advanced research methods to obtain information on alcohol use and violence from culturally-diverse populations.
3. *Contribute to the existing literature on the role of gene-environment interactions in human behavior and outline clinical and scientific applications of this knowledge with emphasis on minority populations.*
4. Conceive, design, and implement longitudinal studies to examine the role of genetic, environmental, and cultural factors in the development of alcohol and violence problems among Native American and other minority populations.
5. Work with national multidisciplinary research teams to conduct large-scale community-based participatory research studies on the association of alcohol and violence.

1C. CAREER DEVELOPMENT/TRAINNG ACTIVITIES DURING AWARD PERIOD

Project Goals Which Will Promote Career Development

The overall goal of this K23 award is to promote the development of a research career in alcohol, violence, and Native American health that is multidisciplinary in nature. The main objectives to achieve this goal include:

1. Completion of the requirements for a Master of Public Health degree with a concentration in epidemiology from the Mel and Enid Zuckerman College of Public Health, University of Arizona.
2. *Obtain training in alcohol research by completing courses at the Graduate Summer Institute in Mental Health Research, Johns Hopkins School of Public Health and an independent study with Dr. Leonard.*
3. Receive training in genetics research by completing courses at the Graduate Summer Institute of Epidemiology and Biostatistics, Johns Hopkins School of Public Health.

4. Obtain additional training in Native American health and research methods by participating in a 1-week Mentorship and Educational Program in Mental Health Services Research at the University of New Mexico *during each year of the grant and completing an independent study with Dr. Roubideaux.*
5. Obtain mentoring from sponsors and consultants with face-to-face and telephone meetings and email communications.
6. Attend professional meetings each year of the grant to present findings, learn new research methods, and hold meetings with mentors.
7. Complete secondary analyses with data from the Ten Tribes Study.
8. *Conduct qualitative pilot study with a Native American tribe.*
9. Write and submit empirical manuscripts based on the Ten Tribes Study dataset to peer-reviewed journals.
10. *Write and submit a review paper with Dr. Leonard on alcohol problems and intimate partner violence with emphasis on cultural factors.*
11. *Reestablish collaborations with tribes of Ten Tribes Study to disseminate empirical findings and design a follow-up study on alcohol problems and interpersonal violence as indicated in the research plan.*
12. Write, submit, and revise a R01 grant application *to conduct a follow-up study with tribes from the Ten Tribes Study.*

Career Development Plan

My career development plan will augment the formal mentoring by sponsors and consultants of this award: Drs. Mary P. Koss, David Goldman, Kenneth Leonard, Bonnie Duran, *Yvette Roubideaux*, and *Mary Mays*. This plan is comprised of structured activities and the proposed research project, both of which are designed to increase the likelihood that I will meet my short-term career goals and develop the foundation for accomplishment of my long-term goals.

This development plan includes faculty members at the University of Arizona and other research institutions who will provide expertise, education, and support to strengthen my research potential in my main areas of interest. Table 1 provides the individuals who are essential to my career development plan and their areas of expertise.

Table 1. Dr. Yuan's Career Development Plan with Sponsor, Co-Sponsor, and Consultants

NAME	INSTITUTION	EXPERTISE
Primary Sponsor		
Mary P. Koss, PhD	University of Arizona	Interpersonal violence
Co-Sponsor		
David Goldman, MD	National Institute of Alcohol Abuse and Alcoholism and George Washington University	Neurogenetics, alcoholism
Consultants		
Kenneth Leonard, PhD	Research Institute on Addictions, University at Buffalo	Alcohol use and interpersonal aggression
Bonnie Duran, DrPH	University of New Mexico Health Sciences Center	Mental health epidemiology, Native American mental health
Yvette Roubideaux, MD, MPH	*University of Arizona*	*American Indian health policy, diabetes prevention*
Mary Mays, PhD	*University of Arizona*	*Basic and applied behavioral and biomedical research, biostatistics*

Specific Training Activities

I have identified two objectives that are essential for pursing a research career that promotes the public mental health needs of underserved populations. First, I need to develop a foundation of knowledge of current

findings in several areas: epidemiology and genetics of psychiatric disorders, alcohol issues, interpersonal violence, and Native American history, culture, and health. Second, I must enhance my skills in conducting research in these areas, including the use of alcohol research methods and community-based participatory research approaches. Table 2 presents the structured activities that are essential to my development as an independent researcher.

Table 2 Dr. Yuan's K23 Award Training Activities

ACTIVITY	PERCENT TIME	YEAR	RELEVANCE TO CAREER & RESEARCH PLANS
Master in Public Health Degree			
Required Core Courses			
Basic Principles of Epidemiology	3%	1	Develop basic skills in study design and analysis.
Sociocultural and Behavioral Aspects of Public Health	3%	1	Advance knowledge of the impact of the social context on health outcomes.
Biostatistics	3%	1	Strengthen quantitative and analytic skills required for clinical research.
Public Health Administration and Policy	3%	2	Obtain knowledge of organizational theory and management within health care systems for later use in developing program services for minority populations.
Environmental and Occupational Health	3%	3	Develop knowledge of living/working conditions that impact human health for use in research with border, rural, and minority communities.
Required Courses for Concentration in Epidemiology			
Epidemiologic Methods	3%	1	Build knowledge of research methods in epidemiology.
Biostatistics for Research	3%	2	Expand skills in data analysis in biomedical research.
Epidemiology Seminar	3%	2	Advance knowledge of current epidemiologic findings and research methods.
Chronic Disease Epidemiology	3%	3	Expand knowledge of epidemiology to other health issues.
Infectious Disease Epidemiology	3%	3	Broaden knowledge of epidemiology to infectious diseases.
Public Health Internship	40%	3	Internship will provide opportunity to build skills in developing collaborative community-based research projects with minority populations in Arizona.
Elective Courses for M.P.H. Degree			
Bioethics, Regulations, and Repercussions of Research	3%	1	Develop ethical protocols for future research projects with human subjects.

American Indian Health Policy	*3%*	*1*	*Learn current issues in health policy affecting American Indians and Alaska Natives, including legal, economic, and public health challenges faced by Indian communities*
Professional Ethics and Skills	*3%*	*1*	*Enhance skills related to design, implementation, and ethical issues of anthropological data*
Medical Anthropology	*3%*	*2*	*Develop knowledge of health culture and the subjective experience of health and illness as influenced by cultural variables.*
Grantmanship for a Winning Proposal	*3%*	*2*	*Strengthen skills needed for proposal development and revision/resubmission of proposals.*
Summer Coursework and Independent Study Courses			
Epidemiology of Drug and Alcohol Dependence, Johns Hopkins Bloomberg School of Public Health (JHBSPH)	*1%,*	*1*	*Obtain knowledge of the epidemiology of alcohol dependence and its relevance to public health.*
Prevention Research in Mental Health, JHBSPH	*1%*	*1*	*Develop an understanding of the basic principles and methods that guide research on prevention of alcohol, disorders.*
Introduction to Behavioral and Psychiatric Genetics, JHBSPH	*1%*	*2*	*Obtain overview of research methods and their application to the study of behavioral and psychiatric genetics.*
Genetic Epidemiology in Populations, JHBSPH	*1%*	*2*	*Learn research designs and methods for genetic epidemiology studies of unrelated individuals.*
Gene Expression Data Analysis, JHBSPH	*1%*	*2*	*Expand skills in incorporating genetic data and hypotheses in gene-environment studies.*
Independent Study with Dr. Leonard	*1%*	*1*	*Enhance understanding of alcohol definitions, assessment, metabolic, physiological, and cognitive effects of acute and chronic alcohol use, and alcohol problems within the context of close relationships.*
Independent Study with Dr. Roubideaux	*1%*	*1*	*Supplement material covered in American Indian Health Policy course with additional readings and discussion on critical issues related to conducting research with American Indians.*
Additional Trainings and Professional Meetings			
Mentorship and Educational Program (MEP) in Mental Health Services Research at University of New Mexico	1%	1-5	*During Years 1 and 2, attend MEP as a mentee to learn about current research findings and methods used to study health disparities. During Years 3-5, attend MEP as a junior mentor and develop mentoring skills.*

Annual meetings for the Research Society on Alcoholism and the Annual Indian Health Service Research Conferences	2%	1-5	Provide opportunities to learn about new research findings and methodologies, develop collaborative relationships, develop ideas for future research endeavors, and present study findings.

There is a logical progression to the proposed activities. During the initial years, I will primarily focus on formal coursework and the secondary analyses project. Later, I will apply newly acquired skills to reestablish the research collaborations with the tribes of the Ten Tribes Study and conduct a pilot study. In subsequent years, I will dedicate a substantial amount of time on writing empirical papers and grant proposals with the aim of publishing findings and securing R01 funding for a follow-up investigation with the tribes from the Ten Tribes study by the end of the grant period. A detailed timeline is provided in Table 3.

Table 3. Dr. Yuan's Career Development Plan Timeline

RELATED ACTIVITIES	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Coursework for M.P.H. degree at University of Arizona					
Public health internship on alcohol problems among Native Americans					
Summer courses at Johns Hopkins Bloomberg School of Public Health					
Independent study on alcohol issues with Dr. Leonard					
Independent study on conducting research with Native Americans with Dr. Roubideaux.					
Mentorship and Educational Program in Mental Health Services Research and in-person meetings with Dr. Duran at the U. New Mexico					
Bi-weekly in-person meetings and telephone and email consultations with Dr. Koss at UA					
Bi-weekly in-person meetings and telephone and email consultations with Dr. Mays at UA					
Quarterly in-person meetings and telephone and email consultations with Dr. Roubideaux at UA					
In-person meetings with Dr. Goldman at NIAAA Laboratory of Neurogenetics					
In-person meetings with Dr. Leonard at RIA					
Quarterly telephone meetings with long-distance mentors (Drs. Goldman, Leonard, and Duran) and email communication as needed					
Weekly Grand Rounds meetings at College of Public Health					

Annual meetings for the Research Society on Alcoholism (RSA) and the Indian Health Service Research Conferences. In-person meetings with Dr. Leonard at RSA meetings					
Secondary analysis of data from the Ten Tribes Study (Research Aims 1, 2, and 3)					
Pilot study with tribes of the Ten Tribes Study (Research Aim 4)					
Dissemination of findings and research collaboration with tribes to conduct follow-up study on alcohol problems, violence, and cultural factors (Research Aim 5)					
Review paper for publication on alcohol use and intimate partner violence with Dr. Leonard.					
Empirical manuscripts for publication on findings from the secondary analyses. *Planned papers are: 1) gene-environment interactions and alcoholism; 2) gene-environment interactions and posttraumatic stress symptoms; and 3) tribal differences in alcohol use and violence.*					
Submission and funding for an R01 application *to support follow-up study with tribes of the Ten Tribes Study* (Research Aim 5)					

1D. TRAINING IN THE RESPONSIBLE CONDUCT OF RESEARCH

In 2003, I met the training requirements to conduct social/behavioral science research involving human subjects at the University of Arizona. In addition, my work with the Ten Tribes Study has familiarized me with the steps that must be taken to observe the University of Arizona and the Intertribal Council of Arizona agreement on responsible research with tribal nations. This policy is binding for all Arizona based researchers, whether or not the participating tribes are inside or outside the state. I will acquire further training in the responsible conduct of research during each year of the award period. Table 4 presents the structured activities in this area. The activities have been identified with percentage of time of involvement by year and relevance to proposed career and research plans.

Table 4. Dr. Yuan's Training Activities in the Responsible Conduct of Research

ACTIVITY	PERCENT TIME	YEAR	RELEVANCE TO CAREER & RESEARCH PLANS
Course of Bioethics, Regulations, and Repercussions of Research	3%	1	Learn responsible conduct promulgated by the NIH, FDA, and Office for Human Research Protections. Develop ethical protocols for secondary analyses and new data collection with human subjects.

Tutorials from Drs. Koss, Duran, and Roubideaux on responsible conduct of research with Native Americans	1%	1-5	Learn how to conduct research with Native American communities including developing Memorandum of Agreement, informed consent forms and protocols, and procedures for data management and data sharing.
Tutorials from Drs. Goldman, Leonard, and Mays on responsible conduct of research related to genetics and alcohol studies	1%	1-5	Develop an understanding of the ethical procedures and implications of human genetics research.
Additional trainings in responsible conduct of research offered by the Human Subjects Protection Program at the University of Arizona	1%	1	Obtain further knowledge of the rights of human subjects involved in research and related policies mandated by the University of Arizona.
Submission of secondary analyses project for review and approval by the Human Subjects Committee (the IRB) at the UA	1%	1	Obtain IRB approval prior to initiating the project.
Submission of pilot study for review and approval by the IRB at the UA	1%	2	Obtain IRB approval prior to initiating data collection.

2. STATEMENT BY SPONSOR, CO-SPONSOR, AND CONSULTANTS

Sponsor's Statement
Sponsor: MARY P. KOSS, Ph.D.

I have more than 30 years of experience as an empirical researcher specializing in interpersonal violence. During that time I have been an active teacher, mentor, grant writer, and publisher of empirical articles. A significant portion of my published papers has addressed etiology of violence and predictors of the impact of violence on victims. In addition, I was the Principal Investigator of the Ten Tribes Study. Initially, I will mentor Dr. Yuan, in collaboration with Dr. Goldman, in conceptualizing, analyzing, and reporting gene x environment interaction studies. Later in the grant period, I will contribute to Dr. Yuan's efforts to reestablish the collaboration with the tribes of the Ten Tribes Study to collect pilot data and design a follow-up study on alcohol use and interpersonal aggression. In particular, I will provide guidance in developing relationships with tribal leaders, creating Memorandum of Understanding, obtaining passage of agreement by the tribal councils, and constructing consent forms for participating tribes that honor the mandates of Native American Nations and Confederations, the University of Arizona, and the National Institute on Alcohol Abuse and Alcoholism, as well as comply with all applicable federal regulations and state policies on the conduct of research with human subjects. The Intertribal Council of Arizona has a pact with all of the Universities in Arizona that establish standards for research with American Indians. These policies are binding on all researchers in the State and are supervised by a special section of the Office of the Vice President for Research and Development. I will also work with Dr. Yuan on all the publications both from a conceptual and editorial perspective. Dr. Goldman will play a more primary role in those studies directed at alcoholism as an outcome and I will be more active in those directed at understanding variability in response to violence. Another way that I believe I can enhance Dr. Yuan's career is to utilize my national network and local connections that flow from my role as a senior faculty member in the Mel and Enid Zuckerman College of Public Health. I can connect Dr. Yuan with research opportunities and scholars that will allow her to realize the goals she sets forward in this proposal.

In recent years, I mentored Edward Walker, MD, and Barry Krakow, MD, in physician research career development awards. In addition, I have hosted many professors on sabbatical leave. I am pleased with the outcomes of the mentoring. Dr. Walker achieved the goals of his award empirically and followed through with publications. He continues to be an active researcher, was promoted and tenured, and in addition was selected as the Associate Department Head of Psychiatry and Behavioral Sciences at the University of

Washington. Dr. Krakow achieved the empirical aims of his proposal, was promoted to Associate Professor, and has published almost 20 papers including a lead article in JAMA from his career development award. He has also subsequently obtained additional grant funds to continue his work and build a research center to house his program.

I have been supervising Dr. Yuan since July 2002 and encouraged her to submit a K-award proposal in February, 2003. I am very impressed with her abilities and drive. She is a pleasure to supervise because time invested pays dividends in work produced. My office is next door to Dr. Yuan's office, thus facilitating both informal and formal interactions. I propose to continue working with her on both research and career development issues. The Ten Tribes Study was funded from 1995-2002 and Dr. Yuan has obtained a small contract with NIAAA to continue analysis and dissemination of the data at .20 FTE. She and I have worked closely together during that period and I have provided office space and equipment for her.

In early 2006, the College of Public Health is moving to a new building that includes offices for both Dr. Yuan and myself. I am currently mentoring Dr. Yuan to achieve Assistant Professor status. She has the support of both the Division of Health Promotion Sciences (Director, Iman Hakim, MD, MPH) and the Dean of the College of Public Health (G. Marie Swanson, PhD, MPH) in this endeavor. The last remaining step to moving Dr. Yuan onto the faculty is achieving enough extramural funding to pay .51% of her salary. That is the standard arrangement we all work under in the College of Public Health. Dr. Yuan also has agreement from the Dean and Division Director to limit her job responsibilities to those that are within the letter and spirit of the K-award, but she would be offered the opportunity to teach periodically so that she will be able to progress through tenure and promotion. Most importantly, the University of Arizona is the newest accredited school in the U.S. For this reason, we have a large number of positions that need to be filled. Dr. Yuan has a real chance of obtaining not just appointment as Assistant Professor, but also the opportunity to move into a tenure line appointment eventually. Therefore, funds invested in her training have a high chance of paying off in terms of expanding the skilled workforce in alcohol research and insuring that they are in settings where they have the resources to continue to pursue their agenda.

Dr. Yuan has access to the resources of a Research I university including computer services, accounting services, assistance in grant preparation, library facilities and on-line literature indexes, access to statistical software, and to an interdisciplinary scholarly community. Dr. Yuan would not be required to teach unless she desired such an assignment for additional compensation. If she were offered teaching, it would not exceed one course, which is a .25 FTE teaching load in our college. I would not anticipate that she would request teaching until after the completion of the MPH degree as she has a full training agenda set out in this proposal that will require her full time commitment for the initial years. I believe that it is very feasible for her to complete the MPH degree because she will receive credit for certain courses that she has already completed in her training as a PhD behavioral scientist. The credit hours freed by not having to take basic courses can be used for electives relevant to her development as a researcher including advanced statistics, epidemiology, alcohol, and American Indian health and policy. Furthermore, it is likely that she will be able to use grant related publications as class projects, and one of her training experiences to fulfill her MPH internship requirement. These factors both increase the relevance of the degree to Dr. Yuan's career goals, but they also render the training much more relevant to the aims of the K-award. I believe that having the MPH degree opens many doors to interdisciplinary research opportunities. I prefer career development plans that will have a "deliverable product," which a degree in a medical field certainly will be. Dr. Yuan has an exemplary academic record, works very hard, and is excellent at multi-tasking. I have no hesitation whatsoever in stating that she will be able to complete this training agenda.

Co-Sponsor's Statement

Co-Sponsor: DAVID GOLDMAN, M.D.

I currently hold the positions of Chief of the Laboratory of Neurogenetics, National Institute on Alcohol Abuse and Alcoholism, NIH, as well as Adjunct Professor in the Department of Biological Science at George Washington University. I received my M.D. from the University of Texas Medical Branch, Galveston, TX in 1978 and completed my resident training in psychiatry in 1979. I completed a research fellowship at NIAAA, Laboratory of General and Comparative Biochemistry, Bethesda, MD. I have been funded by the NIAAA intramural program. My annual budget is approximately $3 million. I have originated or been a key investigator on several of the most promising candidate gene findings in behavior, including findings on the serotonin transporter and anxiety, the serotonin 1B receptor and

antisocial alcoholism, and, most recently, linkage of the COMT gene to cognitive executive function, anxiety, and brain intermediate phenotypes for anxiety. I have published over 200 manuscripts in peer-reviewed journals. Currently, I am on the editorial boards for the *Journal of Studies on Alcohol, Alcohol & Alcoholism, Molecular Psychiatry, Genes, Brain, and Behavior, Psychiatric Genetics, Society of Biological Psychiatry,* and *Alcoholism: Clinical & Experimental Research.*

Since 1998, I have been appointed as Chairman of NIAAA/Institutional Review Board. I have received multiple honors for my research contributions. In 2002, I was a recipient of the NIMH Director's Honor Award for genetic factors that may alter susceptibility to schizophrenia and the NIH Director's Award 2002: James Issacson Research Award, International Society for Biological Research on Alcoholism. My current research focuses on the relationship of genetic variation to behavioral variation, with a focus on the addictions and the G x E interactions.

I have an extensive history of fostering and mentoring researchers since 1980. This includes 8 to 10 graduate students, 30 to 40 postdoctoral fellows, and more than 50 post-baccalaureate students. I have taught a graduate course in Human Genetics at The George Washington University since 1985, and have served on the committees for many students. I am an Adjunct Professor at GW. My approach to mentoring involves encouraging independence, critical thinking and activity through an expectation of responsibility, opportunity for presentations, and writing by the student, and critical advice. All trainees used examples, environment, and materials.

During the award period, I will provide mentoring that will help facilitate Dr. Yuan's accomplishment of her career development and research objectives. The focus of my mentoring will be on genetic variation in human behaviors with emphasis on addictive disorders and gene-environment interactions. Dr. Yuan has proposed to complete coursework on behavioral and psychiatric genetics, genetic epidemiology, and gene expression data analysis offered by the Graduate Summer Institute of Epidemiology and Biostatistics at Johns Hopkins Bloomberg School of Public Health. I will supplement these formal training activities with selected readings and discussions focused on how to apply the newly obtained knowledge to her secondary analyses project and future investigations.

Dr. Yuan will visit the Laboratory of Neurogenetics, NIAAA in Bethesda, MD, during Years 2, 3, and 4. These visits will allow for a thorough review of progress on career and research plans, further training in genetic methodology and current research trends, review of publications and professional presentations, and development of future research projects. The meetings will also provide Dr. Yuan the opportunity to collaborate with our statistical staff and other researchers in our lab in order to conduct the gene-environment analyses with the data from the Ten Tribes Study. Towards the end of her grant, these visits will serve an opportunity to inform our lab of her findings and obtain feedback for future investigations with tribes from our study and others. Dependent on Dr. Yuan's needs, I would be delighted to offer additional support to extend the length of her visits to our lab or increase their number during the award period. My contact with Dr. Yuan will also include quarterly telephone meetings and more meetings if Dr. Yuan requests them. I will also be available for email communication as often as needed. We have collaborated successfully over a long-distance during the past couple of years. Thus, I am confident of my ability to engage in long-distance mentoring during the grant period.

The resources I can make available to support Dr. Yuan's career development are extensive. First, Dr. Yuan will have full access to the Ten Tribes dataset and the resources and materials used in the study. The dataset includes a wide range of alcohol, genetic, and psychosocial variables. Other supports include computational and database infrastructure here, IT and statistical staff with whom she may consult and interact.

This statement is written in strongest support of Nicole Yuan's revised K23 application. This award provides a wonderful opportunity to support an outstanding young investigator who is in an excellent position to exploit an existing large, detailed, and informative dataset being studied by Dr. Koss's social behavioral group at Arizona and by my genetics group at the National Institutes of Health (NIH). Two years after Dr. Yuan's first submission, this continues to be the type of cross-disciplinary training experience that is needed to develop future leaders in science capable of understanding the interaction of inherited and experientially influenced aspects of behavior. Having had the opportunity to work with Dr. Yuan in analyzing and publishing findings based on the psychosocial variables since 2002, I have found her to be an extraordinarily accurate, organized, and energetic collaborator.

Consultants' Statements
Consultants: Kenneth Leonard, Ph.D., Bonnie Duran, Dr.P.H., Yvettte Roubideaux, M.D., M.P.H, and Mary Z. Mays, Ph.D.

Consultant: KENNETH LEONARD, Ph.D.

My research interests and expertise are very congruent with this application. As a Senior Research Scientist at RIA and in previous positions, I have conducted epidemiological, clinical, and behavioral observation research concerning alcohol and aggression, with a specific emphasis on alcohol and marital aggression. This research has spanned nearly 20 years, during which time I have been Principal Investigator on 2 NIAAA-funded projects specifically focused on alcohol and marital aggression, and a co-investigator on a NIJ funded study of substance abuse and criminal and domestic violence among parolees. I have also been involved in research focused on broader issues that are relevant to the understanding of alcohol and marital violence. I was Principal Investigator on a research project supported by NIAAA that addressed the issue of alcohol and bar room violence, including both male to male violence as well as relationship violence. In addition, I am Principal Investigator on two currently funded NIAAA studies that examine alcohol's role in marital/family processes, including marital aggression. One project focuses on the changes in substance use over the first two years of marriage and the inter-relationship between drinking and the marital context. The second study focuses on the impact of paternal alcoholism on both maternal and paternal interactions with children from infancy through kindergarten.

In the 19 years that I have been at RIA, I have been integrally involved with the training of undergraduates, graduate students, and postdoctoral fellows. I have served as mentor for four research scientists, Dr. Marilyn Senchak, who received an NIAAA grant to study the interpersonal functioning of children of alcoholics, Dr. Linda Roberts, who received a Scientist Development Award (SDA) to develop naturalistic studies of alcohol and marital intimacy processes, Dr. Rina Eiden who received a Scientist Development Award from NIDA to study maternal substance use, parenting, and infant development, and recently received an R01 to study this issue and Dr. Brian Quigley, who is conducting research on alcohol and aggression using an experimental social cognition framework. I have served as a co-mentor for two researchers, Dr. Ken Connors at the University of Rochester, and Dr. Greg Stuart at Brown University. In this capacity, I provided both of these researchers with consultations regarding study design, participant recruitment, and assessment of alcohol-related constructs. I provided both with recommended readings with regarding the acute effects of alcohol and the relationship between acute and chronic alcohol use on one hand and violent behavior on the other. So, in addition to considerable mentoring experience, I also have experience with distance mentoring

My main contribution to Dr. Yuan's career development plan is providing direct mentoring on alcohol research methods and alcohol-related problems in the context of close interpersonal relationships. During the early years of Dr. Yuan's grant, I will supervise an independent study on these areas. Specifically, the independent study will focus on alcohol definitions and assessment, metabolic, physiological, and cognitive effects of acute and chronic alcohol use, and alcohol problems in intimate relationships. I will identify specific readings and conduct monthly phone meetings and email consultations with Dr. Yuan to discuss the application of this knowledge to her research projects. While the fundamental aspects of the independent study will be conducted in approximately 12 months, Dr. Yuan will also complete a review paper focused on alcohol and intimate partner violence with emphasis on cultural factors. I will assist her as she writes this review paper, and provide her further guidance on readings that are relevant to alcohol and intimate partner violence.

During the subsequent years of Dr. Yuan's grant, I will provide assistance on her analyses on the Ten Tribes Study dataset, specifically related to the measurement of alcohol use and marital violence, and provide feedback on manuscripts based on the findings. In addition, I will provide mentoring as she prepares grant applications to conduct follow-up assessments on alcohol use and alcohol-related problems with the tribes. During the course of the 5-year grant period, my mentoring will include quarterly 1-hour telephone meetings and email communications as needed. I will also schedule face-to-face meetings with Dr. Yuan at the annual Research Society on Alcoholism meetings, which I attend every June, and which she plans to attend as part of her career development. These meetings will allow for a more thorough review of progress on career and research goals, discussions related to the independent study, and review of analyses and manuscripts. In addition, I will schedule annual face-to-face meetings with Dr. Yuan at the Research Institute on Addictions during Years 2, 3, and 4. The main focus of the meetings at RIA will be the development of ideas and

methodologies for Dr. Yuan's future research projects on alcohol use and intimate partner violence. I will also be available for phone calls and emails on an as needed basis.

I will provide Dr. Yuan with a reading list of critical publications pertinent to her independent study on alcohol research methods and alcohol-related aggression. Other than that, my time and experience are the primary resources that I will provide.

Consultant: BONNIE DURAN, Dr.P.H.

I currently hold the positions of Assistant Professor, Coordinator of the MPH Community Interventions Concentration, and Co-Director for Research for the Center for Native American Health and for the Southwest Alcohol Research Group at the University of New Mexico School of Medicine. I received my Dr.P.H. from the University of California, Berkeley, CA in 1997. In the more recent past, I have been funded by the New Mexico State Department of Health, The Robert Wood Johnson Foundation, Indian Health Service, the National Institute of Alcoholism and Alcohol Abuse, The National Institute of Mental Health, The Health Resources and Services Administration, The Navajo Nation, and the University of New Mexico Health Sciences Center. I have been the Principal Investigator of 2 NIMH research projects. I am currently in the last year of an NIMH K01 award. In that research, I am performing secondary analysis on the largest Native American mental health dataset ever collected: the UCHSC National Center for AI/AN Mental Health Research SUPERPFP study dataset. I have the privilege of mentoring with Drs. Howard Waitzkin, Joel Yager, Spero Manson, Jan Beals, Phillip May, William Miller, and Nina Wallerstein. I have authored 13 manuscripts in peer-reviewed journals and 7 book chapters. Currently, I am on the editorial boards for Critical Public Health, Health Promotion Practice and am under APHA consideration for the editorial board of the American Journal of Public Health. My current research interests include mental health and substance abuse epidemiology and prevention among Native American and other communities of color and translating theory into intervention practice.

I have a strong commitment to mentoring researchers, especially faculty and students of color. In addition to mentoring 5 doctoral students and several MPH students, I have worked closely Drs. Waitzkin and Yager to increase institutions capacity for rigorous mental health research and training. Since 1998, our mental health "team" has been awarded 3 NIMH training grants: Minority Research Infrastructure Support Program grant and two Mentorship Education Program grants. I have developed several important skills in mentoring other researchers. I recognize the importance of accessibility and value regular communication through the use of email and telephone as well as in-person meetings. I welcome questions and discussions on various levels, from those that are detail-oriented to those that are more abstract. Although I provide students with support and access to relevant information and resources, I challenge them to work autonomously, building their own skills to critique research and find new ways to approach important questions.

I will provide Dr. Yuan direct mentoring on mental health epidemiology and health promotion for Native American communities. In the initial years of her grant, my involvement will include being her mentor when she attends the annual Mentorship and Educational Program (MEP) in Mental Health Services Research at the University of New Mexico. Funded by NIMH, MEP focuses on minority mental health issues in primary care settings. In Years 1 and 2, Dr. Yuan will attend MEP as a mentee. In Years 3-5, she will attend and participate in the program as a junior mentor. Thus, her training will include obtaining skills to be a mentor to other research scientists. We will use Dr. Yuan's annual visits to UNM for a number of other purposes as well. During the week-long visits, I will review progress on her career and research goals and identify readings on Native American health and culture to support her secondary analyses project. Later in the grant period, I will use these visits to review her manuscripts based on empirical findings and provide feedback with emphasis on understanding the data in a cultural context. Our annual face-to-face meetings at UNM will not only provide her with training in mental health services research and facilitate my mentoring of her work and career development, but will also provide her with the valuable opportunity to learn from other faculty who conduct research with Native Americans and other rural and minority communities. This interaction will ultimately broaden her network of Native American researchers.

My work with Dr. Yuan will also include an emphasis on training her to conduct community-based participatory research with diverse racial and ethnic groups and other vulnerable populations. During the periods of the grant when Dr. Yuan is disseminating findings to the tribes and developing future research projects with Native Americans, I will provide guidance on approaches to building alliances and involving the community partners in all phases of the research process. I will review her grant writing and provide feedback

accordingly. In addition to her visits to UNM, I plan to be available to Dr. Yuan for regular telephone meetings and email communications. The specific frequency of these contacts will vary according to different phases of her research and career plan, but at minimum will consist of quarterly telephone meetings and monthly email consultations.

Consultant: YVETTE ROUBIDEAUX, M.D., M.P.H.

I am an Assistant Professor in the Zuckerman College of Public Health and College of Medicine at The University of Arizona and my work focuses on teaching, research and program development in the areas of diabetes in American Indians and Indian health policy. I received my MD degree from Harvard Medical School and my MPH from Harvard School of Public Health. My post doctoral research and policy training includes the Commonwealth Fund/Harvard University Fellowship in Minority Health Policy and the Native Investigator Program at the University of Colorado Health Sciences Center. The focus of my research is measuring the quality of diabetes care for American Indians and Alaska Natives, and evaluation of Indian health diabetes programs. I am the principle investigator on several Indian health research projects, Research Project Leader on two Center grant research projects, and am the Co-Director of the Coordinating Center for a large, multi-site Diabetes and CVD Prevention Demonstration Project in collaboration with the Indian Health Service, that includes an extensive multilevel evaluation. I have published 8 papers in peer-reviewed journals and am the co-editor of the May 2005 special edition of the American Journal of Public Health on American Indian health policy. I co-edited the book *Promises to Keep: Public Health Policy in American Indians and Alaska Natives in the 21st Century* that was published by the American Public Health Association and the first book on American Indian health policy. My teaching includes courses at The University of Arizona on American Indian Health Policy, and I guest lecture frequently at the national level. I also have several leadership positions in Indian health, mainly involving diabetes education efforts. I am the chair of the National Diabetes Education Program American Indian Workgroup and the Chair of the American Diabetes Association Awakening the Spirit Team. I am involved in a number of research training activities, including as faculty in the Native Elder Research Center Native Investigator Program, the Director of the ITCA/UA American Indian Research Center for Health Training Program, and the Director of the UA/ITCA Indians Into Medicine (INMED) Program.

I have a strong history of fostering and mentoring researchers through my activities with a number of programs and organizations. As faculty in the University of Colorado Native Elder Research Center Native Investigator Program, I have mentored 12 American Indian/Alaska Native junior faculty MD or PhDs in a rigorous post doctoral research training program, including mentoring them on research methods, and the development of a pilot study, secondary data analysis, and writing of K Awards or R01 applications. As the Director of the ITC/UA American Indian Research Center for Health, I have mentored many students during career development and mentoring activities, and supervise graduate students conducting pilot studies. I founded and coordinate an annual competitive research poster session and workshop at the Association of American Indian Physicians Annual Conference. I am currently the Co-Chair of the Native Research Network, Inc., a national organization and network of native researchers, and participate in mentoring activities of this network. I also serve as an advisor for MPH student internships, and have served on graduate student graduate thesis committees.

I will provide Dr. Yuan direct mentoring on American Indian health policy and approaches to conducting research in Indian country. During the first years of the grant, my main contribution will consist of teaching Dr. Yuan about current issues in health policy affecting American Indians and Alaska Natives through my 3-credit graduate course offered by the College of Public Health. The course will provide Dr. Yuan with a foundation of knowledge on legal, economic, and public health issues specific to Indian communities. To further develop her skills in conducting research with American Indians, Dr. Yuan will also conduct an independent study under my supervision. For the independent study, she will read the book that I co-edited on public health policy, *Promises to Keep: Public Health Policy for American Indians and Alaska Natives in the 21st Century* (American Public Health Association, 2001). I will recommend additional selected readings written by experts in the area and foster the application of the newly gained knowledge to her current and future research projects.

During the later years of the grant, I will share expertise and provide guidance as Dr. Yuan increases her interactions with the tribes of the Ten Tribes Study. I will support her efforts to develop the relationships essary to disseminate empirical findings, collect new data, and propose future research projects with the tribes. In particular, I will make recommendations on qualitative data collection methods with Indians, emphasizing the use of collaborative approaches. Given that Dr. Yuan was not involved in the data collection

of the original project, I expect that she will rely on mentoring from me, Dr. Koss, and other consultants, including Dr. Duran. I will also review her empirical manuscripts and provide feedback on grant applications to fund a follow-up study with the tribes.

Given my current role as Co-Director of the SDPI Competitive Grant Program Coordinating Center, I travel frequently. However, I am committed to scheduling in-person meetings with Dr. Yuan on a quarterly basis, holding telephone meetings on a monthly or bimonthly basis, and being available for email consultations as often as needed. If there are times that Dr. Yuan requires additional assistance, such as during the data collection phase, I will be available for more frequent in-person meetings (i.e., monthly). It is important to note that my travel schedule reflects, in part, my expertise in prevention and risk reduction in American Indian and Alaska Native communities across the nation. During the 5-year period, my expertise will contribute to Dr. Yuan's professional growth and the development of a network of resources that will be valuable as she pursues a career in public health problems among American Indians and other minority groups. I am providing my services without charge for this project.

Lastly, I would like to highlight that the Ten Tribes Study is a very important study that has gathered critical data in need of further analysis. This study is essential to help further understand the findings and to help disseminate findings that may have an important role in improving the healthcare of American Indians and Alaska Natives.

Consultant: MARY Z. MAYS, Ph.D.

It gives me great pleasure to contribute to Dr. Yuan's application for a career development award. She and I have been collaborating for over a year on a randomized controlled trial examining the role of lay health advisors in making brief interventions for tobacco cessation that is funded by the National Cancer Institute. Our different responsibilities on the project intersect in two arenas. As a result, we have met two to three times a month in research team meetings and have collaborated on a manuscript that was recently submitted for publication in Educational and Psychological Measurement. Dr. Yuan is extraordinarily bright, articulate, and insightful. I look forward to being a part of the team that will facilitate her growth as an independent investigator.

I am a Research Associate Professor at the University of Arizona Health Sciences Center. My primary appointment is in the Department of Family and Community Medicine, College of Medicine. I have a joint appointment in the Graduate Epidemiology Program in the Mel and Enid Zuckerman College of Public Health. I am an experimental psychologist and research methodologist with 20 years experience on federally funded research and research training grants. I have over 50 publications in peer-reviewed journals, government monographs, and technical reports, which reflect the diversity of my research interests and my careers in the federal government and academia. As a biostatistician with broad experience in both the basic sciences and applied clinical research, I will be advising Dr. Yuan in research design, data collection, and statistical analysis activities.

My current research interests include chronic illness and substance abuse in socially and economically impoverished populations. Most recently, I have collaborated on large-scale projects, including longitudinal investigations, conducted by multi-disciplinary teams of investigators. My experience with federally funded research includes not only an active research career, but also a focus on research management. Some examples of my service work include being a consultant to the Food and Nutrition Board of the Institute of Medicine, National Academy of Sciences and a contributor to several of the Academy's books on the intersection of nutritional neuroscience and human performance. I have served on National Institutes of Health study sections continuously since 1998 and I am currently a member of the study section for behavioral medicine intervention research. During the University of Arizona Health Sciences Center's leadership transition, I served on the task force for research strategic planning and on the task force for strategic planning of biostatistical consulting services. The breadth of experience inside and outside our institution should enable me to make a meaningful contribution Dr. Yuan's professional development as she begins to seek the internal and external resources to support the development of her own independent laboratory and research team.

Over the last 30 years I have mentored countless undergraduate, graduate, and postgraduate students. Graduate students I have mentored are working in academia, industry, and government laboratories. I am on Board of Directors of the Arizona Clinical Research Training Program, funded by the National Institutes of Health's K30 mechanism. It generated a professional certificate program and two Master's degree programs in clinical research. I am responsible for the year-round research methods seminar and the graduate course in

grant writing. As a mentor in this program and the instructor of the grant writing course, I have worked closely with scholars writing F31, F32, K08, K23, R43, R21, R01 and other grant applications. To date, over 70% of the scholars have received funding as independent investigators from foundation, commercial, or federal sponsors of patient-oriented research. Dr. Yuan and I will work closely together as she analyzes data for the project she proposes in this application and as she uses the results of those analyses to design a future project and write a grant application to support it.

My range of experiences should prove beneficial to assisting Dr. Yuan as she conducts a secondary analysis of social, behavioral, and genetic factors underlying alcohol abuse. I will mentor her in several areas essential to her career development plan, including (a) graduate coursework in biostatistics and clinical trials design; (b) approaches to recruiting members of American Indian tribes for long-term follow-up; (c) methods for managing and archiving data for longitudinal data sets; and (d) ways to combine general linear and hierarchical statistical modeling techniques to identify risk and protective factors, proxy factors, mediators and moderators.

Dr. Yuan and I have agreed to meet regularly for several different aspects of her career development. We will meet, either alone or together with her other mentors, for one hour every other week for the length of her career award. We will meet an additional two hours every other week during times when she is focusing on statistical analysis of data, preparing presentations or publications, or writing grant applications. We will routinely attend the Mel and Enid Zuckerman College of Public Health Grand Rounds seminars together. And, she will be taking the course in grant writing (Epidemiology 652) that I teach. These structured experiences will insure that she and I interact many times each month and that I am readily available to her to discuss any aspect of her research or career development.

3. ENVIRONMENT AND INSTITUTIONAL COMMITMENT TO CANDIDATE

3A. DESCRIPTION OF INSTITUTIONAL ENVIRONMENT

The University of Arizona

The University of Arizona is a public land grant college, located in Tucson, Arizona. Tucson is the second largest city in the state with a metropolitan population of over 800,000. The University of Arizona has a 362-acre campus and 174 buildings. It is currently composed of 25 schools and colleges with more than 37,000 students enrolled in undergraduate and graduate degree programs. The University is among America's top research institutions. For 2000-2001, the National Science Foundation ranked The University of Arizona 23rd among all universities and 14th among the nation's public universities for research and development expenditures. It is one of about 60 institutions recognized by membership in the Association of American Universities. The University maintains a highly collaborative research environment, with many opportunities for intellectual interactions among faculty, students, and Southwest Arizona communities. Opportunities include seminars and symposiums on new research methods and advancing areas of research. Due to the outstanding resources and intellectual opportunities available, the research environment of the University of Arizona is ideally suited for the pursuit of Dr. Yuan's career development goals and proposed research plan.

The Arizona Health Sciences Center

The Arizona Health Sciences Center (AHSC) is a 48-acre complex immediately north of the University of Arizona main campus. It includes the Colleges of Medicine, Nursing, Pharmacy and Public Health, and the UA School of Health Professions. There are over 2,000 undergraduate and 500 graduate students. The AHSC also consists of the University Medical Center and Outpatient Clinics as well as the University Physicians, Incorporated. Each year, $85 million in research grants and gifts result in state-of-the-art treatment for patients and advanced information and resources for faculty, staff, and students. There are eight Arizona Board of Regents designated Centers of Excellence in the AHSC. As indicated on the Resources Page, Dr. Yuan will have full access to the resources provided by the Arizona Health Sciences Library (AHSL). The resources include more than 2,000 catalogued volumes, electronic collections, electronic databases, and computing, learning resources, and instructional development centers. In addition, the AHSL hosts the Arizona Health Information Network and the University's Community of Science membership and has a reference librarian that provides support to researchers studying health disparities among Hispanic and Native American populations.

and Enid Zuckerman College of Public Health

The Mel and Enid Zuckerman College of Public Health (MEZCOPH) is currently the only college of public health in the eight state western mountain region. *In 2003, MEZCOPH received accreditation by the*

Council on Education for Public Health. By January 2006, the College will move to a newly-constructed primary facility, the Roy P. Drachman Hall, on the University of Arizona campus site. MEZCOPH utilizes a multitude of field and work sites throughout Arizona, the Southwest, and abroad. Due to the location in the Southwest, border communities in the U.S. and Mexico are a focus of special attention. Research productivity is the central mission of MEZCOPH with 76% of its total resources provided by grants and contracts. The major sources of funding include: National Institute of Health, Centers of Disease Control and Prevention, Health Resource Service Administration, other federal agencies and Arizona Department of Health Services. The College has a well-established track record for health disparities research with a focus on Hispanic/border health and American Indian health. Ongoing research programs with Southwestern tribes focus on substance abuse and diabetes prevention and control. Key faculty at MEZCOPH who are relevant to Dr. Yuan's career development plan include Robin Harris, Ph.D. (epidemiology, biostatistics), Mark Veazie, Dr. P.H. (community health), Jenny Chong, Ph.D. (substance abuse), Norma Gray, Ph.D. (prevention among Native Americans), and Yvette Roubideaux, M.D., M.P.H. (Native American health and policy). Dr. Roubideaux is appointed to the U.S. Department of Health and Human Service Advisory Committee on Minority Health. *Given her areas of expertise, Dr. Roubideaux has been added as a consultant on this revised application.*

3B. INSTITUTIONAL COMMITMENT TO CANDIDATE'S RESEARCH CAREER DEVELOPMENT

Introduction

The Arizona Board of Regents, the University of Arizona Mel and Enid Zuckerman College of Public Health (MEZCOPH) is currently the only college of public health in the eight state western mountain region. Given that the College is 45 miles from the border with Mexico and that the State of Arizona contains 21 federally recognized Native American reservations, the mission of MEZCOPH is the reduction of health disparities in Arizona and the Southwest. The MEZCOPH is committed to the development, retention, and advancement of researchers that pursue this aim, including Dr. Yuan. Active research programs include a diverse range of community collaborations. These collaborations are focused on the following topics: cancer, diabetes, cardiovascular disease, sexual abuse, tobacco and substance abuse, environmental and occupational health, Native American health, Hispanic and border health, access to healthcare, family and child health, nutrition, and physical activity. Several of these programs are supported by federal grants. These programs provide an important resource base for University researchers. As members of the Mel and Enid Zuckerman College of Public Health, Drs. Koss, Roubideaux, and Yuan have access to these resources.

Agreement

In support of this Research Career Development Award application, the Mel and Enid Zuckerman College of Public Health agrees to:

A. Allow Dr. Yuan to devote a minimum of 75% effort to research and career development activities as outlined in the award application. Dr. Yuan will not have any teaching and administrative responsibilities given that these are not included in her academic appointment at the MEZCOPH.

A.1. Academic Appointment

Dr. Yuan will hold the title and appointment of Research Director of Substance Abuse, Mel and Enid Zuckerman College of Public Health. Dr. Yuan is subject to the duties and responsibilities as detailed in the Arizona Board of Regents Policy Manual 6-201, et seq., and is entitled to all the rights and privileges set forth therein. This appointment is 75% FTE and is currently covered by funds not contingent upon receipt of this award.

A.2. Educational Commitment

Under the aegis of this award, Dr. Yuan will not be involved in educational programs or service activities under the training grant, but she might undertake such activities with additional compensation not to exceed 25% FTE at the University of Arizona.

Provide Dr. Yuan with appropriate office space and access to equipment and resources, as outlined in this award application.

C. Allow Dr. Koss (Professor of Public Health, Sponsor for Dr. Yuan) and Dr. Roubideaux (Assistant Professor of Public Health, Consultant for Dr. Yuan) to devote appropriate time necessary to support Dr. Yuan's career development and research plans, as outlined in this application.

G. Marie Swanson, Ph.D., M.PH.
Dean, Mel and Enid Zuckerman College of Public Health

5-2-05
Date

Rachael Bonnell acting for Richard C. Powell
Richard C. Powell, Ph.D.
Vice President for Research

5/3/05
Date

Proposal Title: The Role of Genetics and the Environment on Alcoholism and Violence among Native Americans

4. RESEARCH PLAN

4.A SPECIFIC AIMS

4.A.1 Introduction

High rates of alcoholism have been documented in select Native American populations. Most studies report rates of approximately 80% in men and 50% in women.[1-3] In addition, Native Americans are victims of sexual and physical nonfatal violence at higher rates than all other races.[4] Whereas the relationship between alcohol use and interpersonal violence has been examined in the general population, few studies have conducted these analyses with this high-risk population.

The current research project will consist of secondary analyses of the Ten Tribes Study dataset, followed by new data collection among the participating tribes. The Ten Tribes Study was a collaboration of Native American Nations and Confederations, the University of Arizona, and the National Institute on Alcohol Abuse and Alcoholism (NIAAA). It was designed to determine prevalence rates of alcoholism and investigate genetic and environmental vulnerability factors among Native American tribes. From 1998 to 2001, face-to-face structured interviews were conducted with 1,660 individuals from seven Native American tribes. Each participant allowed 40ml of venous blood to be extracted. Both interviews and blood draws were conducted on reservation sites. The structured interview was designed to collect information on DSM-IV diagnoses and other health-related issues. Preliminary analyses revealed high prevalence rates of lifetime alcohol disorders and physical and sexual victimization with significant inter-tribal variability. These results underscore the need to examine the relationship between alcoholism and violence in this sample. The secondary analyses proposed in this project were not a part of the original NIAAA-funded contract.

4.A.2 Hypothesis

The hypothesis to be tested in this research is that genetic and environmental factors, separately and in combination, increase the risks of alcohol disorders, violence victimization, and posttraumatic stress symptoms among Native Americans. The proposed study with tribes of the Ten Tribes Study will contribute to our understanding of the complexity of risk factors for alcoholism and violence victimization among Native Americans by accomplishing the following aims.

4.A.3 Specific Aims

The specific aims of this study are:

Aim 1: Investigate the role of gene-environment interactions in the development of alcohol dependence.
Aim 2: Determine the impact of gene-environment interactions in the development of posttraumatic stress.
Aim 3: Examine the impact of cultural factors on risks of alcohol dependence and victimization.
Aim 4: *Conduct a pilot study to further examine factors that contribute to alcohol disorders and interpersonal violence with emphasis on cultural and community factors.*
Aim 5: *Undertake the steps necessary to establish the research collaborations with the tribes to conduct a follow-up study on the relationship between alcohol use and intimate partner violence.*

These aims will be achieved by conducting a three-phase project. The three phases are:
Phase I: Secondary analyses of the genetic and psychosocial data from the Ten Tribes Study.
Phase II: *Qualitative pilot study to identify methods for dissemination of the genetics findings and inform the development of a follow-up investigation with tribes of the Ten Tribes Study.*
Phase III: *Dissemination of the findings from the secondary analyses project to participating tribes and establishment of a new research collaboration to support the design and implementation of a follow-up study on alcohol use and intimate partner violence.*

4.B Background and Significance

4.B.1 Alcoholism and Native Americans

Alcoholism is a long-standing public health problem among Native Americans due to prevalence rates of 30-84%, heavy drinking patterns, and severity of alcohol-related consequences.[5] In 1994-1996, the age-adjusted alcohol-related death rate among Native Americans and Alaska Natives was over 7 times the rate for the United States population in general.[6] Given these consequences, alcoholism not only affects individuals, but also families and tribal communities.

Alcoholism is a heterogeneous and etiologically complex disease that is shaped by both genetic and environmental influences. The following is a brief review of what is known about the association between alcohol use and genetic and environmental factors.

Genetic factors. Heritability of alcoholism in the general population has been estimated at approximately 40-60%.[7] A large multigenerational family study found that the heritability of alcoholism in Native Americans is probably equivalent to other populations, even when lifetime prevalence of alcoholism is very high.[8] Therefore, research on genetic factors in alcohol abuse must include analysis of environmental contexts.[9]

Genetic vulnerabilities for alcoholism include gene polymorphisms that are linked with anxiety and stress responses. Researchers suggest that genetic susceptibilities with anxiety-related phenotypes might also increase risk of alcoholism and other psychiatric disorders due to similarities in particular traits. For instance, one phenotype of anxiety disorders, low-voltage alpha resting electroencephalogram trait, is also associated with alcoholism.[10] Two gene polymorphisms, currently under investigation, are the promoter region of the serotonin transporter gene (5-HTTLPR) and catechol-O-methyltransferase gene (COMT). Studies have documented associations between HTTLPR and anxiety disorders.[11] There is also evidence of an association between the lower-expressing s allele of HTTLPR and anxiety-related personality traits.[12,13] The results from a recent meta-analysis showed a strong association between 5-HTTLPR and neuroticism.[14] The association with anxiety traits has been replicated in Asian populations, including the Japanese population.[15,16]

The findings on COMT have been less conclusive. Whereas some studies documented little evidence of an association between COMT and anxiety disorders,[17,18] other research found an inherited difference in catecholamine metabolism in the development of anxiety in two independent samples of women, including a sample of Plains American Indians.[19] Recent support includes evidence of an association between COMT and increased sensitivity to pain and stress.[20] The lack of consistent findings might reflect sample differences in allele frequencies or group differences in COMT activity. Women have been shown to have lower COMT activity than men and thus, experience greater genetic vulnerability with altered COMT activity.[19]

Given the potential variability in responses to genetic vulnerabilities, the expression of gene risks must be considered within the context of environmental factors. The modification of gene susceptibilities to alcoholism might rely on exposures to specific negative environments. To date, few studies have investigated the impact of gene-environment interactions in alcoholism risk. A leading study in a similar area documented evidence that a functional polymorphism in the MAOA gene moderates the impact of early childhood maltreatment on the development of antisocial behaviors among males.[21] This study is the basis for the proposed gene-environment analyses in this research project.

Environmental factors. Of interest to the present proposal, environmental factors of alcoholism include exposures to different types of interpersonal violence. The relationship between alcoholism and violence victimization among Native Americans has received little empirical attention. Among existing studies, the results are inconclusive. In a sample of Navajo Indians, childhood physical abuse, but not sexual abuse, was associated with alcohol dependence.[22] Other research showed a significant relationship between child sexual abuse and several psychiatric disorders for women, but not men.[23] The lack of consistent findings might reflect the use of different sampling strategies and assessment tools for psychiatric diagnoses and traumatic events across the two studies.

A link between childhood sexual abuse and alcoholism has been well-documented in the general population.[24-26] The Adverse Childhood Experiences Study supported this relationship in a sample of 9,508 adults.[27] However, smaller studies have found little evidence of an increased risk of alcoholism among victims of childhood abuse[28] or an association for women, but not men.[29] Taken together, these findings suggest that ldhood physical, sexual, and emotional abuse are often, but not uniformly, predictors of alcohol disorders in later life.[30]

There is substantial evidence of a relationship between adulthood assault and substance abuse among women.[31,32] In support of findings from cross-sectional studies, a national longitudinal study documented that a new assault significantly increased the odds of subsequent alcohol and substance abuse in a sample of 3,006 women.[33] Little is known, however, whether this association exists among Native American women. The one study with Native Americans found that women who reported a history of domestic violence reported more alcohol problems than women without an abuse history.[34]

4.B.2 Victimization and PTSD among Native Americans

Violence victimization is an equally alarming public health problem among Native Americans. There is substantial evidence that Native Americans are victims of sexual and physical nonfatal violence at higher rates than all other races.[35] For instance, a recent survey indicated that Native Americans experienced violent victimization, including simple assault, aggravated assault, and rape/sexual assault at higher rates than all other races from 1992-2002.[4] The rate of violent victimization among Native American women was more than double compared to all women. High rates of violence exposure are also consistent within specific Native American tribes.[36]

Native American victims are often assaulted by intimate partners. In a review of female homicides in New Mexico, researchers found that domestic violence accounted for almost one-half of the deaths.[37] In a study with Apache reservation Indians, researchers found that the majority of women and men reported being victims of physical assault in their current relationships.[38] The high rates are a particular concern given the rural settings of many Native American reservations.

Factors contributing to victimization. Alcohol use and history of victimization may increase vulnerabilities to assault in adulthood. Research on the association between alcohol use and subsequent sexual assault has been inconsistent. A few studies provided evidence of such a relationship.[39,40] The researchers suggested that alcohol consumption might be associated with increased risky sexual behaviors, increasing the risk for subsequent violence victimization.[41] However, a 2-year longitudinal national study found that use of drugs, but not alcohol abuse, increased the risks of a new assault.[33] Given the more sophisticated methods of this later study, the findings are more substantial. Research in this area has yet to be conducted with Native Americans.

Childhood abuse has also been implicated as a predictor of adulthood assaults in the general population.[42,43] The phenomenon in which a victim of assault has increased odds of future assaults is referred to as revictimization. The one existing study with Native Americans showed that a history of physical abuse was significant predictor of being a victim of domestic violence among Navajo Indians.[22]

Posttraumatic Stress Disorder.

The risk factor literature includes vulnerabilities to victimization-related outcomes. One outcome is posttraumatic stress symptoms. There is relatively little empirical data on traumatic stress among Native Americans. Two studies with non-veteran samples showed an association between posttraumatic stress disorder (PTSD) and violence victimization.[36,38] In one sample, the prevalence rate of lifetime PTSD was 21.9%,[36] a higher rate than the rates of 1-9% indicated in the general population.[44] Among a sample of individuals who had experienced at least one traumatic event, about 25% had a lifetime diagnosis of PTSD. This ratio is similar to those documented in other trauma studies.[45,46]

Factors contributing to posttraumatic stress symptomatology. There is a solid body of literature on factors associated with increased risk of psychological distress, including substance use, history of victimization, and genetic susceptibilities. Research has shown high rates of comorbidity between PTSD and other psychiatric disorders, including substance abuse.[47] Similar comorbidity rates have been documented among Native Americans. Researchers found that among individuals diagnosed with lifetime PTSD, 83.3% were diagnosed with at least one additional lifetime psychiatric disorder in a Native American tribe.[36]

Revictimization increases the risk of psychological distress. Researchers found that women who have experienced repeated sexual victimization are more likely to have a lifetime diagnosis of PTSD than other women.[48] Other studies have indicated no association[49] or an association with trauma-related symptoms, but not PTSD symptoms.[50] Both of these studies were limited by small sample sizes. To date, only one study has been conducted with Native Americans. The results showed a significant relationship between number of traumatic events and PTSD for men, but not women. Men who reported more than 10 traumatic events were more than 6 times more likely to develop PTSD than those who reported fewer exposures.[36] These findings

might reflect the method used to assess trauma. Ten types of traumas were assessed, including non-interpersonal traumatic events, such as combat and accidents.

There is limited research on genetic vulnerabilities of PTSD. One study on heritability, using sample of twins, documented support for a relationship between genetics and posttraumatic stress symptoms. However, environmental and individual factors might also play a crucial role in increased risks for victimization and subsequent PTSD.[51] At present, it remains unknown whether gene polymorphisms that increase risks of anxiety and alcoholism (e.g., HTTLPR, COMT) are also associated with increased risks of PTSD.

4.B.3 Heterogeneity of Native American tribes

Unique to research with Native Americans is the lack of generalizability of findings from one tribe to another. Native Americans comprise of over 557 federally recognized tribes residing in more than 35 states. In addition to geographical diversity, tribes also differ in history, cultural practices and beliefs, language, and other community characteristics. The inherent diversity across tribes most likely contributes to differences in rates of alcohol problems and violence. Based on data from Indian Health Service, some tribes report the same or higher prevalence rates of alcohol use, whereas others report lower rates that those for the general population.[52] Analyses of the Ten Tribes Study dataset resulted in consistent findings.[53] Similarly, tribal variability in rates of adulthood physical assault and rape were also documented in the sample.[54]

Researchers have identified potential tribal and cultural risk factors for alcohol abuse, including tribal integration, language, degree of ancestry,[5] as well as demographic and lifestyle characteristics.[55] Tribes with high traditional integration, such that individuals are expected to follow formal mandates, report lower rates of alcoholism and alcohol-related problems.[56] There is also emphasis on the effects of trans-generational trauma. Tran-generational trauma is historical trauma experienced by previous generations that is passed to current generations of Native Americans. A recent study found that the current generation of Native American adults have frequent thoughts related to historical loss and they associate the losses with negative feelings.[57] Exposure to this type of trauma might contribute to varied levels of vulnerability to alcoholism and victimization among tribes.[58] Only recently, instruments for assessing Native American experiences have been developed and tested. Most studies, however, have used samples of single tribes.

4.B.4 Significance and Rationale

Given the likelihood that genes may contribute to the etiology of alcoholism and posttraumatic stress, it is important to examine the role of gene-environment interactions in determining individual differences in vulnerability.[59] To date, there is little empirical data on gene-environment interaction studies with Native Americans. In addition, little attention has been directed to tribe-specific and cultural factors that exacerbate or minimize existing risks to alcohol dependence and victimization across different tribes.

Dr. Yuan's psychology training combined with her experiences with the Ten Tribes Study dataset and relationships with the tribes provide a unique opportunity to address these gaps in the current literature. Additionally, the specific aims of this proposal include training opportunities that will foster the development of an independent research career in alcoholism and violence, including experience with gene data analysis, community-based participatory research methods, qualitative research design, implementation, and analysis, and public health dissemination approaches.

4.C PRELIMINARY STUDIES/PROGRESS REPORT

4.C.1 Introduction

The present research plan has been influenced by three previous studies with the Ten Tribes dataset conducted by Drs. Yuan, Koss, and Goldman.

Adverse Childhood Events and Alcohol Disorders

The first study examined the impact of negative childhood and adolescent experiences on risk of lifetime diagnoses of alcohol disorders among the participants of the Ten Tribes Study. Among men, 9% were diagnosed with alcohol abuse and 30% with alcohol dependence. Among women, 5% were diagnosed with alcohol abuse and 18% with alcohol dependence. The most prevalent types of maltreatment were physical)lect (men: 45%, women: 43%) and physical abuse (men: 40%, women: 42%). There were significant tribal ...ferences for each alcohol variable, all childhood abuse variables, boarding school attendance, and foster care placement. Multivariate logistic regression models identified several childhood factors as significant

predictors of alcoholism risk. The strongest predictors were sexual abuse and combined physical and sexual abuse. *The findings were published in the American Journal of Preventive Medicine, 2003 (see Appendix A).*

The following table provides the percentages of alcohol variables for the total sample of 1,660 participants.

Variable	Total Sample	
	Men	Women
Alcohol abuse	9	5
Alcohol dependence	30	18
Parental alcoholism	64	65
Age of first drink		
Less than 15 years old	28	17
15 to 20 years old	50	42
Over 21 years old	7	11
Never drank or unknown	15	30

The following table presents the percentages of childhood exposures for the total sample.

Variable	Total Sample	
	Men	Women
Childhood abuse		
Physical abuse	40	42
Physical neglect	45	43
Sexual abuse	24	31
Emotional abuse	23	36
Emotional neglect	20	23
Attended boarding school	24	27
Foster care placement	10	13
\dopted	5	6

Prevalence of Adulthood Physical Assault and Rape

The purpose of the second study was to determine prevalence rates of adulthood physical and sexual assault and identify risk factors of these types of adult victimization. Among women, 45% reported being physically assaulted and 14% were raped since age 18. For men, figures were 36% and 2% respectively. Tribal differences existed in rates of physical assault (both sexes) and rape (women only). For both men and women, the most common perpetrators for adulthood physical assault and rape were intimate partners and male relatives, respectively. Using logistic regression analysis, predictors of physical assault among women were childhood abuse, having a parent who was an alcoholic, lifetime alcohol dependence, and marital status. Predictors of sexual assault among women were childhood abuse, lifetime alcohol dependence, and martial status. Among men, only childhood abuse and lifetime alcohol dependence predicted being physically assaulted. *A manuscript of the findings has been accepted for publication with revisions by the Journal of Interpersonal Violence (see Appendix B).*

The following table provides the percentages of individuals victimized in lifetime by gender.

Type of Victimization	Total Sample	
	Men	Women
Total rape	7	28
Total physical assault	36	45
Stalking	4	15
Any of the above	39	57

The following table provides the percentages of individuals victimized by an intimate partner in lifetime by gender.

Type of Victimization	Total Sample	
	Men	Women
Total rape	1	15
Total physical assault	22	37
Stalking	8	12
Any of the above	24	45

Lifetime Comorbidity of DSM-IV Alcohol Dependence and Other Psychiatric Disorders

A third, and most recent, study investigated the association of lifetime alcohol dependence and other psychiatric disorders. The psychiatric diagnoses under consideration included other addictive disorders, depression, posttraumatic stress disorder, and antisocial personality disorder. The majority of participants with lifetime diagnosis of alcohol dependence had a lifetime diagnosis of at least one other psychiatric disorder. Multivariate logistic regression models indicated that for men the strongest predictor of alcohol dependence was a lifetime diagnosis of another drug disorder, followed by antisocial personality disorder. Among women, having a lifetime diagnosis of another drug disorder was also the strongest predictor of alcohol dependence, followed by antisocial personality disorder and posttraumatic stress disorder. *A manuscript of the results has been submitted for publication.*

The following table presents the percentages of lifetime psychiatric disorders among individuals diagnosed with alcohol dependence.

Lifetime Disorder	Total Sample	
	Men	Women
Any drug diagnosis	54	45
Depression, r/o illness and Bereavement	16	28
Antisocial personality disorder	43	37
Posttraumatic stress disorder	5	13

4.D RESEARCH DESIGN AND METHODS

4.D.1 Phase I: Secondary Analyses Project

Phase I will consist of secondary analyses of the Ten Tribes dataset. The methods for Phase I are those implemented in the original project. The purpose of Phase I is to accomplish Aims 1, 2, and 3 of this proposal.

Aim 1: Investigate the role of gene-environment interactions in the development of alcohol dependence.
Aim 2: Determine the role of gene-environment interactions in the development of posttraumatic stress.
Aim 3: Examine the impact of cultural factors on risks of alcohol dependence and victimization.

Focus Group Participants and Methodology

Focus group interviews were conducted at each tribe site prior to data collection for the main study. The purpose of the interviews was to facilitate community participation, develop tribal specific survey questions, refine testing instruments, and obtain contextual data about alcohol use, violence, and trauma. Participants were tribal community members and human service professionals, identified and recruited by key tribal leaders. Individuals completed up to 3 focus group interviews during a 3-day period. Six out of the seven tribal interviews were audiotaped. One tribe declined to be audiotaped. The interview guide included questions about factors that impacted the community and those that influenced alcoholism, violence, and related problems. Participants received payments of $80. See Appendix C for focus group participant consent form.

Main Study Participants

Participants were randomly selected from tribal enrollment lists, voting registers, or health service registries, dependent on the most accurate source of members as identified by tribal leaders. Refusal rate among individuals who were contacted averaged 21% across all tribes. Of 1,670 participants, 1660 questionnaires were fully completed due to a multi-stage quality control that is described more fully in the next section. The participants were 41% male and 59% female. Seventy-eight percent were educated at the high school level or above. Fifty-eight percent reported family incomes greater than $15,000 per year.

Main Study Sampling Methodology

Tribes were recruited by solicitation with the aim of representing geographic diversity. The study was implemented in five out of twelve Indian Health Service Area offices. Seven tribes participated in the project: one tribe from each of the Bemidji, Oklahoma City, Portland, and Nashville Areas and three tribes from the Phoenix Area. Data were collected by face-to-face interviews that lasted 1.5 to 5 hours, depending on each participant's age, childhood history, and verbal production. Approximately 40 ml of venous blood was drawn from each participant. The blood samples were shipped to the NIAAA Laboratory of Neurogenetics for analysis. Participants were paid $25. See Appendix D for participant consent form. Interviewers were Native Americans who underwent intensive training, consisting of a 240-page training manual, observed practice interviews, and audio supervision. Data quality included editing in the field and independent review in the Tucson office. Incomplete protocols were returned to the field for completion.

Main Study Measures

The structured interview for the main study was designed to collect information to address the key antecedents and consequences of alcoholism and other disabilities. The following section focuses on data that is relevant to the current proposal. See Appendix E for complete interview packet.

Demographic variables that were assessed included age, marital status, income, and education. Participants were also asked questions specific to being a Native American, including tribal enrollment and affiliation, blood quantum, and reservation living.

Diagnoses of DSM-IV alcohol use disorders and associated disabilities were derived from the Alcohol Use Disorders and Associated Disabilities Interview Schedule (AUDADIS).[60] The AUDADIS is a fully structured interview that has been used extensively in the alcohol research literature. The AUDADIS provides over 150 summary variables, including DSM-IV diagnoses of substance use disorders, family history of alcohol abuse, and DSM-IV diagnoses of mood and antisocial personality disorders.

Violence victimization was measured by the use of the Childhood Trauma Questionnaire (CTQ)[61] and the National Violence Against Women Survey (NVWS).[62] The CTQ is a 70-item screening inventory that assesses self-reported experiences of childhood abuse and neglect. Select items were used in the Ten Tribes Study, resulting in five summary scores. The NVWS is a state-of-the-art instrument designed to assess women's and men's experiences with sexual and physical assault and stalking victimization. The instrument includes a wide range of questions about assault, such as the relationship to perpetrator, injuries, and subsequent actions taken after the assault.

Diagnoses of DSM-IV posttraumatic stress disorder and related specifiers were derived from the Posttraumatic Stress Diagnostic Scale (PSD).[63] The PSD consists of 49-self-report items that correspond with the six DSM-IV criteria for PTSD. In a normative sample, reliability Kappa coefficients was .74 and validity agreement with the PTSD module of the Structured Clinical Interview for DSM-III-R was .59.[63]

Cultural characteristics were assessed using a questionnaire designed by researchers of the Ten Tribes Study. Development of the instrument was influenced by the work of previous studies[64,65] and findings from the focus groups. The 48-item questionnaire assesses knowledge of traditional language, residence on tribal lands, practice of cultural activities, and identification as a tribal member. The instrument was adapted for each participating tribe to reflect tribal-specific activities and beliefs. Factor analysis of the data yielded four scales: Language Importance (importance of retention of the traditional language); Language Knowledge (knowledge about specific words); Geography (extent to which the participant and family members live on the tribal lands); and Tribal Identity (involvement in traditional beliefs and practices).

Data Management

Focus group data. Five out of the six audiotaped interviews were transcribed, saved as Word documents, and stored securely in Dr. Koss's office building at the University of Arizona. The quality of one audiotaped interview was poor and thus, was not transcribed. The Word files are copied as text only files in preparation for coding using the qualitative software program Atlas.ti.

Main study data. The Ten Tribes Study quantitative dataset has been cleaned, managed, scored, and stored securely in Dr. Koss's office building. Several lifetime DSM-IV diagnoses were determined including alcohol abuse, alcohol dependence, other drug disorders, posttraumatic stress disorder, depressive disorders, conduct disorder, and antisocial personality disorder. In addition, several summary scores relevant to this proposal have been calculated. The summary scores consist of different types of childhood and adulthood abuse and cultural factors.

Genetic data. *Genetic analyses and a database of variables, including data of HTTLPR and COMT polymorphisms, has been developed by scientists in Dr. Goldman's laboratory at NIAAA.* The data are managed by Dr. Goldman's laboratory and will be provided to Dr. Yuan in the form of a data file to be merged with the psychosocial database.

Planned Analyses

Aim 1: Investigate the role of gene-environment interactions in the development of alcohol dependence.

Planned Analysis 1: For Aims 1 and 2, the effects of several gene polymorphisms related to alcoholism and stress responses to violence will be tested. The two polymorphisms to be tested will be HTTLPR and COMT. The analyses provided serve as an illustration of the gene-environment interaction analyses that Dr. Yuan will conduct for this project. Following formal training in genetics, alcohol, and violence, Dr. Yuan will use additional approaches to study gene-environment interaction effects on alcohol problems and stress responses.

Using the main effects of HTTLPR gene activity and childhood maltreatment and gene-environment interaction on lifetime diagnosis of alcohol dependence will be tested. In these analyses, female victims of childhood maltreatment with low HTTLPR gene activity will be compared to non-victimized women with the same gene polymorphism. A second regression model will examine the main effects of COMT gene activity and childhood maltreatment and gene-environment interaction on alcohol dependence. Each model will be controlled for age, education, income, and tribal community.

Aim 2: Determine the role of gene-environment interactions in the development of posttraumatic stress.

Planned Analysis 2: Similar to Planned Analyses 1, predictive models will include the effects of HTTLPR and COMT gene activity. The purpose of the analyses is to test whether HTTLPR and COMT modifies the impact of revictimization (2 or more assaults) on the development of lifetime DSM-IV diagnosis of PTSD. The first regression model will examine the main effects of HTTLPR gene activity and revictimization and gene-environment interaction on lifetime diagnosis of PTSD. The second model will examine the main effects of COMT gene activity and revictimization and gene-environment interaction on PTSD.

Given the relatively low rates of PTSD in the Ten Tribes sample, especially among male participants, additional analyses will be conducted. Regression analyses will be used to examine the role of gene-environment interactions on each of the DSM-IV PTSD criterion (i.e., Reexperiencing, Avoidance, and Arousal criteria). In these models, the gene-environment interactions of HTTLPR and COMT gene polymorphisms will be tested separately.

Aim 3: Examine the impact of cultural factors on risks of alcohol dependence and victimization.

Planned Analysis 3: *Quantitative and qualitative analyses are proposed in this section.* The purpose of the analyses is to explore tribal differences in prevalence rates by developing tribal-specific risk factor models. For each tribe, univariate analyses will be conducted and two 3-step hierarchical logistic regression models will be tested to assess the relationships of cultural factors with alcohol dependence and adulthood victimization. To determine the odds of alcohol dependence, models will assess individual associations of alcohol dependence with demographic variables (i.e., age, education, income, and tribal community), childhood

maltreatment, adulthood physical and sexual assault, and each of the cultural subscales. Following these analyses, a 3-step hierarchical logistic regression model will be tested. In step 1, demographic variables will be entered in the model. In step 2, childhood maltreatment and adulthood assault will be entered. In step 3, cultural factors will be entered in the model.

For each tribe, to determine the odds of adulthood victimization, individual relationships of different types of adulthood assault with demographic variables, childhood maltreatment, alcohol dependence, and each of the cultural subscales will be determined. Following these analyses, a 3-step hierarchical logistic regression model will be tested. In step 1, demographic variables will be entered in the model. In step 2, childhood maltreatment and alcohol dependence will be entered. In step 3, cultural factors will be included in the model.

The focus group transcripts will be analyzed using a coding-categorizing technique that involves arranging the data into categories sorted by broader themes.66 Codes that are predetermined or emerge from the data will be assigned to the identified categories and used to increase meaning of the data.67 Dr. Yuan's analyses will emphasize tribal and cultural vulnerabilities and protective factors to alcohol problems and violence victimization. Dr. Yuan will compare and contrast the emergent themes and issues across the different tribes.

4.D.2 Phase II: Qualitative Pilot Study

In Phase II, qualitative research methods will be utilized to inform the development of a follow-up investigation. The activities in Phase II are linked with those proposed in Phase III. Prior to conducting the pilot study, Dr. Yuan will need to re-negotiate a Memorandum of Understanding to pursue further data collection with a subset of tribes from the Ten Tribes Study. The tribes in Arizona are selected as a convenient sample. The memorandums will need to be approved by participating Native Nations and Confederations, the University of Arizona, and the NIAAA. Phase III will build on these activities to create Memorandums of Understanding with all tribes of the Ten Tribes Study to conduct a comprehensive follow-up investigation.

The purpose of Phase II is to accomplish Aim 4 of this proposal.

Aim 4: Conduct a pilot study to further examine factors that contribute to alcohol disorders and intimate partner violence with emphasis on cultural and community factors.

Pilot Study Participants and Methodology

The pilot study will consist of in-depth interviews and focus group interviews with tribal elders and other key informants from the Arizona tribes that participated in the Ten Tribes Study. The purpose of the key informant interviews is to: (1) assist with the interpretation of the Ten Tribes Study findings; (2) suggest methods for disseminating the findings; (3) identify areas for further research on alcohol use and violence victimization; and (4) contribute to the development of a survey instrument for the follow-up study; and (5) provide suggestions for participant recruitment. Six face-to-face key informant interviews will be conducted with tribal leaders and key service providers for the reservation communities (e.g., healthcare/ behavioral health professionals, law enforcement officers, and community outreach advocates).

The objective of the focus group interviews is to: (1) assist with the interpretation of the Ten Tribes Study findings; (2) facilitate an exchange of opinions on community-based risk factors of alcohol dependence and interpersonal violence, including history, culture, geography, and context; and (3) explore the role of alcohol use on assault among adults. Another purpose is to obtain an understanding on why the cultural affiliation assessment tool, created with input from each of the tribes, did not significantly predict alcohol problems. Three focus groups will be conducted with tribal members. Participants will be selected on the basis of being knowledgeable about their communities, insightful, and able to communicate their experiences and opinions.[68] Dr. Yuan will request the assistance from tribal leaders to identify and recruit tribal members.

Dr. Yuan will conduct the key informant and focus group interviews. These activities will occur after her training and mentoring in qualitative research methods. The key informant interviews and focus groups will take place on tribal lands and audiotaped and transcribed. Participants of the key informant interviews and focus group interviews will be compensated.

Planned Analyses

Similar to the analyses with the Ten Tribes Study focus group data, the key informant and focus group transcripts will be analyzed using the coding-categorizing technique. Dr. Yuan will hold meetings with Drs. Koss, Duran, Roubideaux, and Leonard to condense, refine, and make connections among the emergent themes and develop plans for the follow-up study.

4.D.3 Phase III: Research Collaboration with Native Nations and Confederations

The goal of Phase III is to accomplish Aim 5 of the present proposal.

Aim 5: *Undertake activities required to establish the research collaborations with the tribes to conduct a follow-up study on the relationship between alcohol use and intimate partner violence.*

Overview

It is well known that collaborating with Native American tribes on research studies requires a significant amount of time and effort due to ethical and legal regulations mandated by participating parties. The estimated amount of effort in this proposal is high due to the involvement of multiple tribes, each with its own scientific review guidelines and procedures. As a result, the work proposed in the following section is substantial enough to form a separate research phase and specific aim.

Dissemination of Findings

To build a collaboration for additional research, findings from Phases I and II activities will be disseminated to the tribes. The tribes will be informed and educated about the gene-environment interaction findings related to alcohol dependence and posttraumatic stress as well as findings from the previous three empirical manuscripts. The primary contacts will include Governors, Health Directors, and other key tribal leaders. Since the end of data collection, Drs. Yuan and Koss have maintained relationships with the Governors and Health Directors to obtain approval of empirical manuscripts based on the Ten Tribes Study dataset. The tribes receive a 45-day review period of all manuscripts prior to being submitted for publication, as stated in the original Memorandums of Understanding. During the grant period, Dr. Yuan will continue to follow the Memorandums of Agreement and distribute copies of new manuscripts for review. In addition, Dr. Yuan will seek assistance from the tribal leaders to identify the best approaches to distributing the findings to other members of their communities. Dissemination activities may include reports, scientific manuscripts, telephone meetings, and/or in-person presentations.

Research Collaboration

To design and implement a follow-up investigation with the tribes, the community partnerships with the tribes will need to be reestablished. Dr. Yuan will apply community-based participatory research methods, as learned during the initial years of the grant, to accomplish this multiple-step process with full participation of tribal members. The use of community-based participatory research methods will result in findings that are relevant to the communities and not solely the Principal Investigator and other researchers.[69] Dr. Yuan will hold frequent meetings with Drs. Koss, Roubideaux, and Duran to address the ethical, legal, and social issues related to cultural competence and ethical practice in working with tribes.

The first step will be to continue to foster the relationships with tribal leaders at the start of the grant period. The next step will consist of developing a passage of agreement with tribal leaders regarding the follow-up investigation. This step will be followed by creating Memorandums of Understanding and participant consent forms that are consistent with the mandates of Native Nations and Confederations, the University of Arizona, and the NIAAA. In performing these activities, Dr. Yuan will comply with all federal regulations and state policies on the conduct of research with human subjects. Given the involvement of multiple tribes, the estimated amount of time it will take to obtain IRB approvals from the Nations, the University of Arizona, and the NIAAA is approximately one year.

Proposal for Follow-Up Study

The design of the follow-up investigation will be largely influenced by findings from Phases I and II and specific requests from participating tribes. One of the main objectives, however, is to address the intertribal variation in rates of alcohol disorders and physical and sexual assault that was not accounted by the original

data. The new study will collect new information that empirical literature and focus group participants suggest may be important to improve the prediction of risks of alcohol and violence problems and intertribal variation in them. The new study will also examine current rates of alcohol disorders, other psychiatric disorders, and adulthood violence victimization and compare them to rates reported in the Ten Tribes Study, which will by that point be 10 years old. In addition, this study, unlike the original investigation, will directly investigate the role of alcohol consumption in intimate partner violence, including both perpetrators' and victims' use of alcohol.

The seven tribes of the Ten Tribes Study will be invited to participate in this research. Similar to the original study, Dr. Yuan will seek the assistance of tribal leaders to select and recruit tribal members as study participants. Data will be collected using survey and qualitative research techniques. A large survey will be administered due to research indicating the usefulness of this method to obtain personal disclosures from perpetrators and victims.[70] Qualitative interviews with tribal members will be conducted to provide in-depth information on the role of alcohol on adulthood assault in different tribal communities. All study participants will be compensated.

Results from the follow-up study will improve our understanding of the vulnerabilities experienced by Native Americans, including cultural and tribal characteristics that increase risks of alcohol problems and interpersonal violence. Identified links between alcohol use and assault will shape current violence prevention programs by broadening the scope of the problem.

4.D.4 Limitations, Proposed Solutions, and Strengths

Limitations and Proposed Solutions

The present research plan has some limitations. Primary limitations for Phase I include the analysis of cross-sectional data, restricting the analysis and interpretation of causal pathways between alcoholism and violence victimization. To address this concern, this project will use data that refer to specific life periods, including questions about being a victim of childhood abuse and intimate partner violence. A second limitation is the small sample size of some, but not all, the tribes in the study. The sample sizes range from 99 to 300 participants. Given that data collection has been completed, a possible approach to studying inter-tribal differences is to combine tribes with similar key characteristics, such as tribal history and region of the country. *The main limitation of Phase II is the lack of generalizability of the pilot study findings to other tribes of the Ten Tribes Study. However, there is significant variation within the tribes in Arizona. Thus, although they represent a subset of the data, they are representative of the ranges in prevalence rates reported across all seven tribes. The primary limitation of Phase III is potential disagreement among the tribes regarding the design of the follow-up investigation. The use of community-based participatory research methods, however, will facilitate the development of a research collaboration that addresses the needs and interests of all partners.*

Research Strengths

Although there are identifiable limitations, the strengths of this proposal are clear. Genetic analyses may help explain health disparities in alcohol dependence and other psychiatric disorders. To date, the social, ethical, legal, clinical, and policy implications of research on genetics are relatively unknown.[71] Genetics research is a particularly controversial issue for Native American tribes, as documented by the recent lawsuit filed by the Havasupai Tribes against Arizona State University. The present proposal provides the opportunity to advance science and maintain higher levels of culturally appropriate research practice. The gene-environment interaction findings will be interpreted and disseminated with full partnership by the tribes. Given that more than 10 years have passed since the original Ten Tribes Study data was conducted, a follow-up study will utilize new methodologies and measurements for research with Native Americans, resulting in a more comprehensive and accurate assessment of environmental risk factors. In addition, completion of the proposed work will promote Dr. Yuan's career as an independent scientist and contribute to the body of knowledge that is needed to reduce the prevalence and severity of outcomes associated with alcoholism and violence among Native Americans.

4.D.5 Timeline for Completion of Research

Project Phase and Specific Aim	Research Activity	Year for Completion
Phase I: Aim 1	a. Obtain approval from IRB at University of Arizona to conduct the secondary analyses project. b. Conduct literature reviews on gene-environment interactions and alcohol disorders. c. Collaborate with Dr. Goldman and his laboratory of scientists at NIAAA to obtain genetic database and learn about genetic analyses. *d. Obtain mentoring from Dr. Mays on statistical techniques for the data.* e. Perform data management and analysis. f. Write an empirical paper for publication.	Year 1
Phase I: Aim 2	a. Conduct literature reviews on gene-environment interactions and violence-related stress. b. Obtain mentoring from Drs. Koss, Goldman, Leonard, and Mays. c. Perform data management and analysis. d. Write an empirical paper for publication.	Year 2
Phase I: Aim 3	a. Conduct literature reviews on Native American culture and history and the cultural context of alcohol problems and violence. b. Obtain mentoring from Drs Duran and *Roubideaux* on Native American culture. c. Data management and analysis. d. Write an empirical paper for publication.	Year 3
Phase II: Aim 4	*a. Establish collaborations with Native American tribes in Arizona to conduct a pilot study.* *b. Develop participant consent forms.* *c. Obtain approval from IRBs at the Native Nations and Confederations and the University of Arizona.* *d. Obtain mentoring from Drs. Koss, Duran, Roubideaux on approaches to conducting qualitative research with Native Americans.* *e. Conduct key informant interviews (6 interviews).* *f. Conduct 3 focus group interviews.* *g. Data management and analysis.* *h. Write an empirical paper for publication.*	*Years 2-3*
Phase III: Aim 5	*a. Develop relationships with tribal leaders.* *b. Design a follow-up investigation.* *c. Create passage of agreement with the tribes.* *d. Create a Memorandum of Agreement with each tribe.* *e. Develop participant consent forms.* *f. Obtain IRB approval from the Native Nations and Confederations, the University of Arizona, and the NIAAA for follow-up study.* *g. Submit an R01 grant proposal for follow-up study on alcohol use and violence.* *h. Revise and resubmit R01 application, if necessary.*	*Years 1-5*

4.E HUMAN SUBJECTS RESEARCH

Secondary analyses project

This human subjects research falls under Exemption 4. Prior to initiation of the project, the proposal will be submitted to the IRB at the University of Arizona for review and approval of exempt human subjects research. The project meets the requirements of Exemption 4 because the research involves existing datasets of genetic and psychosocial variables and transcribed focus group interviews that do not include identifying information of the subjects.

Pilot study

This human subjects research meets the definition of "Clinical Research." Prior to initiation of the project, the proposal for the pilot study will be submitted to the University's IRB for review and approval of non-exempt human subjects research. The following Protection of Human Subjects section is specific to the pilot study.

Protection of Human Subjects

4.E.1 Risks to the Subjects

4.E.1a Human Subjects Involvement and Characteristics

The subject population for the pilot study is Native American tribes residing in Arizona that participated in the Ten Tribes Study. Six individuals will be included in the key informant interviews. The six participants will be Native Americans (18 years or older) that are tribal leaders or key service providers (e.g., healthcare/ behavioral health professionals, law enforcement officers, and community outreach advocates) for the reservation communities. Eighteen individuals will be included in the three focus groups. The eighteen participants (18 years or older) will be tribal members that are knowledgeable about their communities, insightful, and are able to communicate their experiences and opinions. There are no specific exclusion criteria.

4.E.1b Sources of Materials

The sources of materials that will be obtained include: (1) demographic data; and (2) audiotaped and transcribed interviews and focus group discussions on genetic, environmental, and cultural risk and protective factors of alcoholism and violence. The audiotapes and transcripts will not include participants' names. The Principal Investigator (PI) and other selected staff will be unable to link an individual's name to their voice on the recording. Before using participants' words, the researchers will remove any identifying information, such as the name of the tribe, people, or place names. The demographic data will be collected using a brief survey. The surveys will not include identifying information. Each survey will have an identification number. The materials obtained in this research project will be used exclusively and specifically for the proposed research purposes.

4.E.1c Potential Risks

There are minimal risks to the participants from participation in this study. There is a small risk of emotional distress from discussing sensitive topics. These risks are typical for qualitative interviews.

4.E.2 Adequacy of Protection Against Risks

4.E.2a. Recruitment and Informed Consent

Recruitment for the key informant and focus group interviews will be completed using recruitment strategies identified by tribal executives. Selected individuals will be invited to participate through personal contact from the PI by telephone, mail, or in-person. Consent will be obtained by the PI using a consent form approved for use by the Institutional Review Boards (IRBs) at the participating tribes, the University of Arizona, and the NIAAA. The consent forms will be reviewed with participants in person and all forms will be signed by the participants, the PI, and a witness prior to completion of the interviews. The IRBs at the tribes and the University of Arizona will review all procedures for recruiting participants and obtaining their consents to participate.

4.E.2b. Protection Against Risk

To minimize potential risks, the PI (a licensed clinical psychologist) will implement standardized protocols for conducting qualitative interviews that insure participant comfort with the setting and the process. If a participant displays signs of distress with the interview or group discussion, they will be encouraged to take a short break. If a participant shows signs of moderate to severe distress, the PI will refer them to an appropriate health professional.

The data collected will be accessible only by the PI and designated staff. The audiotapes and demographic surveys will be secured in a locked file cabinet at the University of Arizona. The transcripts will stored on the University's local area network and accessible only to the PI and selected staff. The computer files on the secure server will be routinely backed-up and removed at the end of the study and stored on computer disks/cds.

4.E.3 Potential Benefits of the Proposed Research to the Subjects and Others

Participants of the key informant and focus group interviews will provide opinions and experiences that will help accurately interpret the research findings and shape the design and implementation of future investigations on alcoholism and violence among Native American tribes. The focus group participants will also contribute to enhanced communication, understanding, and cultural sensitivity between members of the tribal community and off-site University researchers.

4.E.4 Importance of the Knowledge to be Gained

Alcoholism and interpersonal violence are major public health problems among Native American tribal communities. Unfortunately, little remains known about the impact of genetic, environmental, and cultural factors on increased risks. There is also a lack of empirical research on the relationship between alcohol consumption and assault among this population. Qualitative data will facilitate an exchange of ideas that will inform future studies to reduce the occurrence and severity of alcohol and violence problems on tribal lands.

4.E.5 Inclusion of Women

Both men and women will be included in the research. The targeted enrollment of subjects by gender will be approximately 60% female based on participant enrollment for the Ten Tribes Study. See the Targeted/Planned Enrolled Table on the following page.

4.E.6 Inclusion of Minorities

All participants will be Native Americans.

4.E.7 Inclusion of Children

Both children (ages 18-21) and adults will be included in the research. Children under the age of 18 will be excluded because the focus of the research is adulthood alcohol problems and victimization.

Targeted/Planned Enrollment Table

This report format should NOT be used for data collection from study participants.

Study Title: Role of Genetics & Environment on Alcoholism and Violence in Native American Communities

Total Planned Enrollment: 24

TARGETED/PLANNED ENROLLMENT: Number of Subjects			
Ethnic Category	**Sex/Gender**		
	Females	**Males**	**Total**
Hispanic or Latino	0	0	0
Not Hispanic or Latino	15	9	24
Ethnic Category: Total of All Subjects *	15	9	24
Racial Categories			
American Indian/Alaska Native	15	9	24
Asian	0	0	0
Native Hawaiian or Other Pacific Islander	0	0	0
Black or African American	0	0	0
White	0	0	0
Racial Categories: Total of All Subjects *	15	9	24

* The "Ethnic Category: Total of All Subjects" must be equal to the "Racial Categories: Total of All Subjects."

4.F VERTEBRATE ANIMALS

Not applicable to this research.

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4.H. CONSORTIUM/CONTRACTUAL ARRANGEMENTS

None.

4.I. RESOURCE SHARING

Not applicable.

Principal Investigator/Program Director (last, First, Middle): Yuan, Nicole Patricia

CHECKLIST

TYPE OF APPLICATION *(Check all that apply.)*

☐ NEW application. *(This application is being submitted to the PHS for the first time.)*

☒ REVISION of application number: 1 K23 AA014606-01
(This application replaces a prior unfunded version of a new, competing continuation, or supplemental application.)

☐ COMPETING CONTINUATION of grant number: _____
(This application is to extend a funded grant beyond its current project period.)

INVENTIONS AND PATENTS
(Competing continuation appl. and Phase II only)
☐ No ☐ Previously reported
☐ Yes. If "Yes," ☐ Not previously reported

☐ SUPPLEMENT to grant number: _____
(This application is for additional funds to supplement a currently funded grant.)

☐ CHANGE of principal investigator/program director.
Name of former principal investigator/program director: _____

☐ CHANGE of Grantee Institution. Name of former institution: _____

☐ FOREIGN application ☐ Domestic Grant with foreign involvement List Country(ies) Involved: _____

☐ SBIR Phase I ☐ SBIR Phase II: SBIR Phase I Grant No. _____ ☐ SBIR Fast Track

☐ STTR Phase I ☐ STTR Phase II: STTR Phase I Grant No. _____ ☐ STTR Fast Track

1. PROGRAM INCOME ***(See Instructions.)***
All applications must indicate whether program income is anticipated during the period(s) for which grant support is request. If program income is anticipated, use the format below to reflect the amount and source(s).

Budget Period	Anticipated Amount	Source(s)
No program income is anticipated.		

2. ASSURANCES/CERTIFICATIONS ***(See instructions.)***
In signing the application Face Page, the authorized organizational representative agrees to comply with the following policies, assurances and/or certifications when applicable. Descriptions of individual assurances/certifications are provided in Part III. If unable to certify compliance, where applicable, provide an explanation and place it after this page.
•Human Subjects Research •Research Using Human Embryonic Stem Cells •Research on Transplantation of Human Fetal Tissue •Women and Minority Inclusion Policy •Inclusion of Children Policy •Vertebrate Animals• •Debarment and Suspension •Drug- Free Workplace *(applicable to new [Type 1] or revised [Type 1] applications only)* •Lobbying •Non-Delinquency on Federal Debt •Research Misconduct •Civil Rights (Form HHS 441 or HHS 690) •Handicapped Individuals (Form HHS 641 or HHS 690) •Sex Discrimination (Form HHS 639-A or HHS 690) •Age Discrimination (Form HHS 680 or HHS 690) •Recombinant DNA Research, Including Human Gene Transfer Research •Financial Conflict of Interest (except Phase I SBIR/STTR) •Smoke Free Workplace •Prohibited Research •Select Agents and Toxins •STTR ONLY: Certification of Research Institution Participation.

3. FACILITIES AND ADMINSTRATIVE COSTS (F&A)/ INDIRECT COSTS. See specific instructions.

☒ DHHS Agreement dated: 06/24/04 ☐ No Facilities And Administrative Costs Requested.

☐ DHHS Agreement being negotiated with _____ Regional Office.

☐ No DHHS Agreement, but rate established with _____ Date _____

CALCULATION* *(The entire grant application, including the Checklist, will be reproduced and provided to peer reviewers as confidential information.)*

a. Initial budget period:	Amount of base $	69,022	x Rate applied	8.00%	% = F&A costs	$	5,522
b. 02 year	Amount of base $	79,138	x Rate applied	8.00%	% = F&A costs	$	6,331
c. 03 year	Amount of base $	71,863	x Rate applied	8.00%	% = F&A costs	$	5,749
d. 04 year	Amount of base $	81,038	x Rate applied	8.00%	% = F&A costs	$	6,483
e. 05 year	Amount of base $	73,777	x Rate applied	8.00%	% = F&A costs	$	5,902
					TOTAL F&A Costs	$	29,987

*Check appropriate box(es):

☐ Salary and wages base ☒ Modified total direct cost base ☐ Other base *(Explain)*

☐ Off-site, other special rate, or more than one rate involved *(Explain)*

Explanation *(Attach separate sheet, if necessary.):*