CURRICULUM VITAE – BIOGRAPHICAL AND UNABRIDGED

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Recent past post:

Field Research Social Scientist
Human Terrain System, U.S. Army

GS-15 Equivalent
Management/Supervisorial
Mission Essential
Recent Past Clearance: SECRET
Deployed With Troops: Afghanistan, Kuwait

A specialty appendix concerning my eminence in Operations Research and Systems/Statistical Analysis (ORSA)/Pattern Analysis Qualifications is attached. This CV gives my general background according to:

- **Education**
- **Other Education**
- **Professional and Academic Positions Held**
  - **Public Diplomacy, International Relations, International Law, and International Criminal Justice**
  - **Military/U.S. Department of Defense**
  - **Journalism, Public Relations, and Public Opinion (As a Civilian)**
  - **Technical Writing – Municipal Projects**
  - **Legal and Law Enforcement**
  - **Legislative/Political Work – 1980 to Present**
  - **Work Abroad**
  - **Managerial/Administrative/Project Management**
  - **Teaching**
  - **Other Academic Employment**
  - **Geo- and Environmental Sciences Work**
  - **NASA and Astronaut-Related Work/Events**
  - **Non-Military Non-Traditional and Working-class Work Experiences**
- **Sample Publications and Presentations**
  - **Books and Book Chapters**
  - **Journal Articles and Technical Papers/Related Presentations**
  - **Presentations and Briefings Only**
- **Honors and Grants**
- **Professional Societies**

EDUCATION

Because of my many educational experiences, sometimes people remark that I must have been a "professional student." This was not the case. My parents were not wealthy. I rarely had the leisure of "just" being a student. I generally worked at a variety of jobs while taking courses on the side, few of them "student" jobs, sometimes two or more jobs and paying projects ongoing at once. The jobs ran the gamut from blue-collar to professional and, at any given time, I might have been working at a mix of these jobs in the course of a week. During one period in the early 1980s, I was simultaneously holding down a university staff job, working two blue-collar jobs, AND running a for-profit business and a non-profit organization. Perhaps it is this background that drives my expectations for my students to persist in seeking their career goals and to get their assignments in on time.

Ph.D. Sociology. 2000. The University of South Carolina, Columbia, South Carolina.

I earned **Distinction** on the Social Psychology Comprehensive Examination and was the first passer of this rigorous exam in the history of the doctoral program at The USC.

I earned a high passing grade on the Structural Sociological Comprehensive Examination.

I submitted peer-reviewed publications in lieu of standing the third Specialty Area Comprehensive Examination.

Dissertation Title: *The Effects of Size and Heterogeneity of Crew and Mission Duration on the Deviant Behavior and Performance of Team Personnel in Space and Analog Polar Environments: A Pilot Study.*

My dissertation demonstrated the first quantitative evidence for why some extreme environmental work teams develop a dysfunctional group state known as third-quarter syndrome (or phenomenon) after the mid-point of their missions and why others do not.

I was awarded two United States National Science Foundation (NSF) grants, a regular grant and a supplemental for undergraduate support, during the progress of this research. (It is unusual for a graduate student to be awarded a regular grant from the NSF before receiving the PhD.)

Post-doctoral equivalences. I also possess the equivalent of two post-docs in **statistics** and **experimental psychology** that I gained by working closely with Dr. Thomas Gorry at Erskine College from 1997-2000. (Dr. Gorry was a South Carolina Psychologist Board Examiner and a former acting president of the American University-Beirut, Lebanon.) Dr. Gorry vouching for these equivalences was instrumental to my being included in the NASA Mission Specialist Astronaut Active Application Selection Files at NASA's Johnson Space Center in Houston, Texas from late 1999 through 2004.

M.A. Anthropology. 1988. University of Alaska, Fairbanks (UAF). Subdisciplines: Geoarchaeology and Aerial and Satellite Remote Sensing.

Thesis Title: *An Aerial Survey of Coastal Archaeological Sites From Cape Prince of Wales to Camden Bay.*

My thesis demonstrated how to find archaeological sites in the Arctic with remote sensing technology. Included techniques of pattern analysis.

I discovered and mapped scores of new archaeological sites along the Alaskan littoral from Cape Prince of Wales to Camden Bay on the North Slope coast. The project also made inferences about prehistoric mobility in the Arctic and about the cultural affiliation of the sites. I was privileged to have my work discussed in a presentation delivered by famed archaeologist James I. Ebert at the annual meeting of the American Anthropological Association, 5 Dec 85, "Archaeological Remote Sensing in Alaska" in the symposium entitled "Remote Sensing in Anthropology and Archaeology."

Special note: I was privileged to be recommended to my second Master's program by the great Afghanistan expert, anthropologist and archaeologist Dr. Louis Dupree, with whom I had worked on the Kara Kirghiz rescue and relocation project some years before entering that program.

M.A. English. 1984. University of Alaska, Fairbanks.

Thesis Title: *Debunking Alaska: The Metamorphosis of the Alaska Literary Myth Through Its Relationship With Alaska's Socioeconomic Image*

My thesis pointed out the themes of Alaskan literature based on Alaskan socioeconomic phases.

Special note: I was privileged to be recommended to my second Master's program by the great literary critical scholar, Dr. Northrop Frye, with whom I had corresponded for several years and who had read my work.

B.A. English (including journalism courses). Social sciences minor. 1974.Winthrop University.

Literary and journalism highpoints during this period included the publication of over 20 poems and the publication of numerous news stories and news features. I changed majors three times in the course of my three-year bachelor's program: from history to mathematics and physics to philosophy and comparative religions to English. My academic advisor was the great Buddhism scholar, Dr. Nolan Pliny Jacobson. Throughout my years at Winthrop and long afterwards, I continued to be mentored by my media and literary professors, Robert O. Bristow and Earl Wilcox.

OTHER EDUCATION

Numerous certifications: Completion of Human Terrain System Training, National Institutes of Health's Protecting Human Research Participants course, Geneva Conventions, SERE 100, SAEDA, Anti-Terrorism Level I, DoD Information Assurance, Suicide Prevention, Combat Stress, Fraternization, Army Values, Military Code of Conduct, Uniform Code of Military Justice, General Orders, Combating Trafficking, Afghanistan Country Study, Rules of Engagement, May – November 2008.

Certificate, Immersion Seminar on the Language, Culture, and History of Afghanistan, Center for Afghanistan Studies, University of Nebraska-Omaha, July 2008.

Italian language courses, College of Marin and Santa Rosa Junior College, Spring-Fall 2007.

Military specialty certifications and On-the-Job (OJT) Training in: stock control and accounting; Arabic language and Middle Eastern cultures; combat mountaineering and cold weather training; print and photojournalism; field medical operations, psychological operations (PsyOps), and more. 1974-1976.

Post-baccalaureate enrichment studies in teacher education, public administration, history, geography, Mountainclimbing/Outdoor School, linguistic anthropology, and languages at the University of Alaska, Anchorage, Washington State University, and the University of Alaska-Fairbanks, 1977-1989.

Languages most formally studied include: French, German, Russian, Spanish, Arabic, Inupiaq Eskimo, Italian, and Dari (a dialect of Farsee). Studied in less depth through frequent exposure were Farsee, Pushtu, Hindi, Urdu, and a number of other Southwest Asian languages, as well as some indigenous American languages. Most recent languages studied are Italian, Dari, and Tongan (a Polynesian dialect).

Certification. California Institute of Technology/NASA Jet Propulsion Laboratory, Planetary Sciences Summer School, 1997.

Clinical Counselor Certification (SC-DAODAS) and CAC II (SCAADAC). 1995 – present. Current.

Over 200 units in clinical topics from several teaching hospitals, colleges, and universities, to include the Medical University of South Carolina (MUSC). Detailed list upon request.

PROFESSIONAL AND ACADEMIC POSITIONS HELD

Public Diplomacy, International Relations, International Law, and International Criminal Justice

My many professional experiences at the international interface have been the most rewarding part of my career. Some reflections are:

- ***My semi-immersive experiences in Muslim cultures let me know that the Middle East and Central Asia would become a "center of gravity" in future military endeavors while the US military establishment was still "fighting the last war" after it was over (the Viet Nam War)***
- ***I realized that the Soviet Union would likely be transformed and the Cold War halted years before many American policymakers saw it coming***
- ***Because of my youth, I did not fully appreciate the danger I was in by engaging in the criminal justice field research that I did in the late 1970s and throughout the 1980s***

- ***Had Dr. Louis Dupree lived, my mid-career path might have been less difficult and certainly different***
- ***I should have protected better the Kuwait Victimization Assessment Database intellectual properties than I did by at least publishing my methods rather than sharing them through informal channels***

1978 - 1982

Volunteer. Muslim Students' Association of America and Canada (MSA) Washington State University (WSU) Chapter (as a means to maintain semi-immersion in Middle Eastern languages and culture). I was looking forward to a career as a military officer whose value would partly derive from my knowledge of Middle Eastern and Central Asian languages and cultures. Arabic, Farsee, Pushtu and any other related language were not being taught at the Defense Language Institute during this time period.

Participating in the MSA, I:

- Co-organized a sizable Islamic conference in Pullman, Washington that featured attendees and speakers from other states, provinces, and nations
- Was elected to a MSA WSU Chapter Office. (My elected seat as probably one of the first women elected into a MSA position was short-lived. Upon my election, I experienced firsthand an acceptable Muslim exception to a democratic election: A few minutes after my "win" was announced, a young Arab man came into to the MSA WSU chapter meeting late, announced happily that his wife had just given birth to a son, and my elected MSA office was awarded to him on the spot.)

Criminal Justice Contractor. My information-gathering services to state and federal law enforcement agencies, in relation to concerns of a federal grand jury convened in Anchorage (described below under "Legal and Law Enforcement"), became counterintelligence and counterterror in nature when, in the course of my duties, I began to penetrate of-interest groups living and working in Alaska. These groups included Balkan nationalists, Irish Republican Army officers and men, a Palestinian Liberation Organization general and his Alaska support network, and Contra-Era Latin Americans linking to a former CIA paramilitary and graduate of the School of the Americas living in Fairbanks.

Chief Negotiator (with Dr. Louis Dupree). The rescue and relocation of about 1,000 Kara Kirghiz Central Asians from the Wakhan Corridor of Afghanistan to the Turkey-Iran border country, among the Kurds near Lake Van, effectively preventing their genocide at the hands of invading Soviets. It was the first mass Afghan refugee airlift in history. To motivate this, Louis and I plumbed our networks within governments, on the American political front, and within the media. In the days before the Internet, the chief telecommunications medium helpful to us was the telephone and telegraph service of RCA-Alascom, the system that had been installed for the construction of the Trans-Alaska Pipeline.

A sampler of persons and organizations that assisted Dupree's and my effort follows:

Primary agency partner with Louis and me in the project:
U.S. State Department

Workers doing legwork in the field for us were from:
U.S. Agency for International Development (U.S.A.I.D.)
International Rescue Committee (IRC)
Various Christian Missionaries
World Wildlife Fund

Foreign officials assisting from:
Pakistan
Turkey

Some VIPs and American politicians assisting:
Lowell Thomas, Sr.
Then-Congressman Jim Jeffords, Vermont
The Alaska Congressional delegation
Alaska State Rep. Pappy Moss

Some supporting organizations on stand-by at the time of the rescue/relocation:
U.S. Navy
Hospital Ship *Hope*
VISTA
Tolstoy Foundation
International YMCA
Ford Foundation
Cultural Survival, Inc. (Harvard University)

Louis had had affiliations with:
American Universities Field Staff comprised of 11 or 12 different cooperating institutions.

Louis had advised and consulted on Afghanistan for:
The Governments of West Germany, France, Denmark, Sweden, Norway, England, and Australia and the U.S. State Department, the Peace Corps, the National Security Council, the CIA, U.S.A.I.D. and the United Nations.

Other scholars and community leaders in Alaska providing advice and assistance:
Dr. Niilo Koponen
Dr. Fred Milan
Mr. Emil Notti

Sampler of media organizations providing coverage:

Radio
Voice of America
Radio Free Europe
Canadian Broadcasting Company
Radio Moscow
National Public Radio

News Wires
Reuters News Wire
Associated Press
United Press International

Magazines
Asia
National Geographic
Asian Affairs

Newspapers
Seattle Post-Intelligencer
The Toledo Blade
The New York Times
The Los Angeles Times
Christian Science Monitor
Harvard Crimson
Several Alaskan newspapers

1983 - 1989

With Dr. Fred Milan, an important *de facto* public diplomat out of the cold regions science and medical communities (International Union For Circumpolar Health), we continued to collaborate on a number of projects. A notable one was contributing to a Soviet documentary on Wrangel Island, Chukchi Sea.

I continued a correspondence with Dr. Alexei Polazhaev at the Institute for Biological Problems of the North (IBPN), Magadan, who had heard my presentation in Finland on reindeer and caribou and herding cultures.

1990 - 1992

Unable to find out the status of my direct commission that would bring me into the Army as an officer providing scientific and technological know-how preceding and during the Gulf War, but still wanting to contribute, I pulled together a civilian team of social scientists, statisticians, jurists, and former military professionals, including former members of the regular military and Special Forces, in order to bring science to bear to help liberated Kuwait. Our project was the Kuwait Victimization Assessment Data Base (KVAD).

I was doing research and teaching at The University of South Carolina at the time in the Sociology Department. Our department was on the forefront of social structural innovation, part of a "Great Group" of social scientists from other social scientific departments throughout the United States making big strides in social network analysis and other analytical concepts. I worked alongside the creator of UCINET and ANTHROPAC (1). At its height, about half of our small sociology department was involved in some fashion on the KVAD team. The KVAD teammates worked alongside some of the seminal SNA thinkers in our university jobs, and those of us in graduate programs studied with them as well. Some of them acted as consultants on the KVAD. I was studying doctoral-level research methods with Dr. Katie Faust in the Spring of 1991 who was writing a major statement on SNA (2).

Anticipating an international criminal tribunal would be convened to bring justice and reparations to Kuwait, my team expected to deploy to liberated Kuwait to perform the KVAD research. For this research, we designed a methodology combining survey research methods, social network analysis (SNA) and other social structural techniques, statistical applications, and satellite and aerial remote sensing and GIS applications to serve the tribunal to determine personal and organizational damages and, thus, reparations in the wake of Iraq's invasion of Kuwait.

When the tribunal was not convened, I turned our Kuwait Victimization Assessment Data Base (KVAD) methodology over to the UN research division through collegial ties. Not long afterwards, colleagues began bringing to my attention news of our same methods being used to pinpoint war crimes and perpetrators in the Balkans.

Our methods and what we tried to do for Kuwait foreshadowed the use of social network and other analytical concepts in military environments that are featured in their basics in Appendix B of FM 3-24 (MCWP 33.3-5) *Counterinsurgency,* which was not published till December 2006.

There is no doubt that the give-and-take of intellectual discourse and our attempts to find practical applications for these concepts during this time period at The University of South Carolina and at our sister locations, to include The USC's Geography Department, (3) are part of the evolution of SNA and related analyses for military use. The social structural concepts and methods used in various MAP-HT applications (Analyst Notebook, ANTHROPAC, UCINET, ArcGIS, etc.), used by the US Army's Human Terrain System, are part of the evolutionary lineage downstream of what we tried to do over a decade and a half ago.

Notes

1. I was a beta-tester of an early version of ANTHROPAC, and encouraged creator Steve Borgatti to market the application during this time period.
2. Wasserman, Stanley, & Faust, Katherine. (1994). *Social Network Analysis: Methods and Applications.* Cambridge: Cambridge University Press.
3. Dr. David J. Cowen in The USC's Geography Department was a major innovator in the integration of GIS and remote sensing techniques.

1992 - present

I participate till this day in international aerospace sciences and engineering conferences.

I played several roles concerning the Russian space station simulation, SFINCSS-99 (the "Simulation of Flight of an International Crew in a Space Station"). See the following for a description of that project:

http://www.space.com/news/spacestation/isolation_russia_000412.html
http://hfetag.com/briefs/56-t-e-Dudley-Rowley.pdf

I became a collaborator-partner of The International Science and Technology Center, ISTC, Moscow, Russia, and remain in that role till this day.

I liaison'd between Alaskan Russian Orthodox officials and officials with the Diocese in Moscow for the trip to Alaska made by the descendent of the Venerable Ioann (Innokenty) Veniaminov. The descendent himself was a high Russian Orthodox Church official and surnamed Veniaminov, 2001.

In 2003, with Thomas Gangale, George E. Seymour, and with Claudio Maccone, I designed and proposed to government agencies the methodology for "Needle-in-a-Haystack Analysis of SIGINT Archives For Proximal Real-Time Response" This was a joint OPS-Alaska and Space and Naval Warfare Systems Command (SPAWAR) project proposal. In short, we recommended the application of a mathematical transform used in radio astronomy for rapid identification of terrorist users of electronic communication, for archived and incoming traffic.

"The Transnationalization of Terror – a Human Factors Approach to Networks of Personnel, Materiel and Technologies, and Locations," A proposal submitted to the NATO Manfred Woerner Fellowship, 2004-2005 Programme, NATO Academic Affairs, January 2005.

I became a member of the former USIA Alumni Association (now known as the Public Diplomacy Alumni Association) and the Foreign Service Association of Northern California (FSANC). I remain so till this day.

I engaged the Foreign Service training and testing process, preparing with the help of three diplomats-in-residence: Ambassador Janet Sanderson (UC-Berkeley) and senior Foreign Service Officers Les McBee (UC-Berkeley) and Celio Sandate (Stanford University). I recognized deficits in the recruitment and testing processes, made recommendations, and also made recommendations for substantial improvement in the career tracks of junior to senior Foreign Service Officers. I conveyed these recommendations in person to Ambassador J. Anthony Holmes, a member of the Council on Foreign Relations, who was the President of the American Foreign Service Association in 2006. My recommendations can be viewed in my paper written for *The Foreign Service Journal,* "Transformational Recruitment: Beyond the American College Testing Model."

With Thomas Gangale, I co-authored on a number of publications and presentations about international legal issues concerning aerospace topics. Our papers on this subject are being used by The Aerospace Corporation to advise senior NASA officials at NASA Headquarters in Washington, D.C. Gangale's sole-authored book on aerospace international law was published by Praeger Security International in 2009.

Thomas Gangale and I made advisories to U.S. presidential candidates and Congresspersons concerning a number of issues at the intersection of aerospace concerns, global warming, alternative energy, postsecondary education, and public diplomacy. A sample of a single issue that we recently discussed with congresspersons were the advantages of the Jupiter stack configuration vs. the Ares stack configuration for the next American launch system.

Military/U.S. Department of Defense

After serving as a civilian scientist with an Army Intelligence program and in a war zone during 2008-2009, I have come to realize how unique were my and my cohort of military women's experiences and opportunities from over three decades before. Unlike preconceived notions of how "repressive" the 1970s were for women in the military, I did not find it particularly that way when I served on active duty in the United States Army. However, that being said, I believe a backlash against female military career opportunities began ramping up in the 1980s, which may explain how it was that I was able to train as an officer over several avenues, but was never able to be commissioned (to my knowledge).

Nonetheless, my active-duty service as an enlisted soldier positively shaped my character in ways that it might never have been had I not served at the particular place and time that I did. My opportunities in the U.S. Army in the 1970s may have largely been an artifact of where most of my service took place, a deployment to Alaska. Alaska was a frontier for women – women in construction, women gold miners, women trappers, women commercial ship captains, et al. However, I don't think that accounts for how I was able to do all the things I got to do in the Army in those days. I think the ending years of the Viet Nam War, the driving force of women's liberation, and the recruitment glamour of "adventure training" converged to create opportunities for Army women and a good deal of experimentation concerning how women could serve took place during the years that I was on Army active duty. While many of the roles that my Army women cohort pioneered are evident in how our sisters serve today, there are many disappointing trends. At the same time Army women are engaging in more combat-type duties alongside their brothers-in-arms, the backbone of the Army, the Infantry, has not been opened to them – as it was long ago in the Canadian Army. When and where I served, there was every indication that in the near future women would be serving in the Infantry (and initially in Alaska I served under Commanding General Willard Latham, a great Infantry icon). However, the doors of

the Infantry have remained closed for American Army women, even though increasingly more of those women routinely perform Infantry-type duties. It seemed strange for me over three decades later to see that the blue shoulder cord of the Infantry had become a masculinity cult symbol that had to be earned by Infantry training from which women are barred in the United States Army (even though much of their training at the Basic level include many Infantry skills). So cult-like has the Infantry and its symbols become, that those of us women from my active-duty days forward, those of us who have worn the blue shoulder rope on our uniforms by virtue of our special job assignments to Infantry units, are treated in some quarters as if we are liars about our service to country. A second disturbing trend I noticed from my recent service as a civilian with the military was the rise in sexual abuse and crimes toward military women that, in most quarters, appeared to be "normal" deviance and winked at. I believe these trends have emerged as a consequence of a military that has steadily become de-professionalized by a heavier reliance upon part-timer military reserves and a growing corpus of military contractors. Finally, a more disturbing trend that derives from that reliance is the permeability between what is military and what is paramilitary. That trend is a clear and present danger to the American Republic.

1974-1976

U.S. Army Quartermaster Center and School

Selected as Editor. Training texts and materials for the U.S. Army Quartermaster Center and School for Arabic-speaking officers and non-commissioned officers from Middle Eastern militaries. Fort Lee, Virginia. (Instructors at the Quartermaster School were not able to break my Unit-of-Choice enlistment contract and I was sent on to Alaska over the need for me at the School and my wish to alter the contract and remain at Fort Lee to edit the texts.)

For the 172nd Arctic Light Infantry Brigade

Clerk, "B Shop," Ordnance and heavy equipment facility, Company B, Support Battalion, 172nd Arctic Light Infantry Brigade (Maneuverable), Fort Richardson, Alaska. (First woman to work in the shop.)

Combat mountaineer (first Army woman). Eklutna Glacier field training site, Chugach Mountains, Alaska.

- As covered in "Eklutna: Happy Home in a Happy Wilderness," *Snowhawk Life and Times,* Volume 12, Number 12, an Army publication with worldwide distribution. (While other women were at the training site, they did not participate in the training. Subsequent cycles of training did see women fully participating rather than largely observing.)

Selected for combat mountaineer courses in leadership and assault climbing, Northern Warfare Training School, Black Rapids field training site, Alaska.

Became the feature editor, a staff writer, and a photojournalist for the *Snowhawk Life and Times,* Brigade Information Office. Supervisor: LTC H. Norman Schwarzkopf. When newly promoted COL Schwarzkopf left Fort Richardson, Alaska as Deputy Post Commander, the Brigade Information Office was shut down. I returned to a Quartermaster function as follows.

Quartermaster Support Staff. Field Medical Operations. Company C "Charlie Medics," Support Battalion, 172nd Arctic Light Infantry Brigade.

222 training hours, Precommission Course, Infantry School coursework, *documented* in my General Education Development Individual Record, AR 621-5.

I was able to separate from my Army enlistment early in order to enroll in Army ROTC. In my final months with the 172nd, I served as the Brigade's Historian.

Historian. 172nd Arctic Light Infantry Brigade. Currently known as "the 172nd Stryker Brigade."

1976-1978

Student, Senior Army Reserve Officer Training Corps, University of Alaska-Anchorage. (About a year into my program, Congress discontinued the college ROTC program in Alaska. I was able to enroll in Air Force ROTC at another university -- attracted by the program's officer recruiter's promotion of potential entrée into the third or later class of women being trained to fly high-performance aircraft.)

Top scorer. Air Force Officer's Qualification Test.

Student, Senior Air Force Reserve Officer Training Corps, Washington State University.

1984-1990

Member, Society of American Military Engineers (SAME). I attended meetings and events at Fort Wainwright, Fairbanks, Alaska.

Selected for field examination board for scientific and technical direct commission to the rank of Major, Army Corps of Engineers. Fort Wainwright, Fairbanks, Alaska. (I would have probably been the first military woman to serve as an Engineer in a field-grade rank had my processing not been stymied owing to resistance to my gender.)

Selected for direct commissioning processing as Second Lieutenant, Army National Guard, Anchorage, Alaska. (Then, my paperwork that was in processing was apparently lost when the Alaska ANG was mustered to the Presidio in San Francisco and a skeleton staff left behind in Anchorage could not apprise me of its whereabouts or progress. This avenue had been my fall back position when my direct commission effort for a higher rank commensurate with my age and expertise was subverted. It was recently discovered, however, that I received a clearance in 1988 as if progress had been made in granting me an officer's commission.)

1999-present

Technical Advisor. U.S. Department of Defense Human Factors Engineering Technical Advisory Group (by invitation only).

Subject Matter Expert. Invited. Human Systems Information Analysis Center (HSIAC http://iac.dtic.mil/hsiac), a Department of Defense Information Analysis Center, sponsored by the Defense Technical Information Center, technically managed by the USAF Research Laboratory's Human Effectiveness Directorate and operated by Booz Allen Hamilton.

On SAIC expert list.

Military Honors and "Firsts"

- Among the first women to train with the M-16 rifle. Army Sharpshooter Badge. Fort Jackson, South Carolina.
- Among the first women to train in gender-heterogeneous situations. Fort Jackson, South Carolina; Fort Richardson, Alaska.
- The first Army woman trained as a combat mountaineer.
- Among the first women to wear the infantry rope and insignia on her uniform. When I worked for the Brigade Information Office, answering to COL Schwarzkopf, my company was the HHC of the 172nd Arctic Light Infantry Brigade. From recent feedback I have received, women in such modern situations may not wear the Infantry trappings on their uniforms -- or else they may not be permitted to work for HHCs in today's United States Army environment. My official head-to-toe military photograph showing me in uniform is available for inspection.
- The first woman to wear the beret of the 172nd Arctic Light Infantry Brigade.

On other training exercises, I was typically the only woman or part of a tiny group of women participating. These were:

- Survival training participant and consultant to Co. B, Support Battalion, 172nd Arctic Light Infantry Brigade

- *Ace Card Chulitna* Field Training Exercise (FTX), 1975
- *Jack Frost* Joint Training Exercise (JTX), a large annual American-Canadian armed forces training exercise, assisting with media functions, COL H. Norman Schwartzkopf, Deputy Post Commander, 172nd Arctic Light Infantry Brigade, 1975-January 1976.
- While enrolled with Army ROTC, designed field training (tactical) exercises for Army ROTC cadets, 1977

Journalism, Public Relations, and Public Opinion (As a Civilian)

My career experiences as a journalist has let me see just how badly the American media at least has retreated from providing objective news and features to inform and educate the public. An overwhelming percentage of news media today is "infotainment," a type of "bread and circuses" to distract the citizenry from the fact that the United States is receding from the core of the world system of societies.

My colleagues from my earliest days in the media – when journalism was a serious business -- are among the people in my life who have known me the longest and I have greatly valued their friendship over the years.

Early 1970s

Contributing Reporter and Feature Writer:

Rock Hill Evening Herald, Rock Hill, South Carolina (daily) and other South Carolina newspapers

Show Host, WCRO-AM, Rock Hill, South Carolina.

Mid-to-Late 1970s

I worked on staff briefly at the semi-daily Washington State University newspaper, *The Daily Evergreen,* Pullman, WA.

Investigative Broadcast Journalist, Show Host, and Producer, News Director for Mutual Broadcasting Network Affiliates KRXA (Seward, Alaska) and KIAK (Fairbanks, Alaska)

In the positions listed above, from 1977-1979, I produced and hosted over 30 radio specials for Mutual Radio Broadcasting System affiliates in Seward and Fairbanks, Alaska over various social problem topics of interest to the community: mental and physical health of the elderly, policies concerning the elderly, the rape examination, domestic violence, the plight of the unemployed, etc. I routinely had two regular shows of my own to produce and I made weekly national reports from Alaska for the Network for national airing. My radio special on pipeline union reformers was the item that got me noticed by the task force headed up by the U.S. Justice Department's Organized Crime Strike Force and led to my being recruited into the criminal justice work that I describe in this document.

I also shot stock footage and produced documentary films with Yupik Eskimo-speaking owner, George Miller, of Takotna Video, Anchorage, Alaska. I had almost forgotten about my foray into videography until recently, when a museum in northern Japan contacted me about wanting a copy of a Takotna Video film.

My colleagues and I at KRXA-AM instigated action from Governor Jay Hammond's Office to resolve a triple avalanche crisis that cut off the highway link between Anchorage and Seward, Alaska. Our effort was a great example of what would now be called "strategic communication."

Late 1978 - 1981

I partnered with two other Alaska Chapter National Press Women on a for-profit company, Winds of Change Productions, for the purpose of writing a book manuscript that went on to be used by the U.S. Congress to tailor the Alaska National Interest Lands Conservation Act (ANILCA, below).

I partnered with Mr. Dale Horn, program manager of KIAK-AM, Fairbanks in founding Totem Productions, a full-service media company. When Dale left Alaska, I changed the name of the for-profit company to Rowley Media Services. Rowley Media Services was instrumental to the evolution of OPS-Alaska, the think tank.

I managed a PROD slate of reform candidates for Alaska Pipeline union officerships. (PROD, the Professional Drivers' Council, is a Ralph Nader organization.)

1980 – present

I have contributed to a plethora of news stories, news features, op-eds, magazine features, radio broadcasts, and documentary films. Themes run the gamut: aerospace issues, issues of cold and polar regions, the Kara Kirghiz, maritime disasters, community interests, union-related violence, law enforcement, health, and the transnationalization of terror. A sampler follows:

Magazines and Journals

- *Asia*
- *National Geographic*
- *Arctic*
- *Ciel et Espace*
- **Cover:** *Discover,* with Patrick Nolan, interviewed with William "Speed" Weed, Contributing Editor, on the psychological challenges of space flight

Newspapers – Daily and Semi-Daily

- *The Herald*, (Rock Hill, South Carolina)
- *The Florence Morning News*, (Florence, South Carolina)
- *The Anchorage Times*
- *Seattle Post-Intelligencer*
- *The Toledo Blade*
- *The New York Times*
- *The Los Angeles Times*
- *Anchorage Daily News*
- *Fairbanks News-Miner*
- *The State* (Columbia, South Carolina)
- *The People-Sentinel* (Barnwell, South Carolina)
- *The Index-Journal* (Greenwood, South Carolina)

Newspapers --Weekly/Semi-Weekly

- *The Darlington Post* (Darlington, South Carolina)
- *The Seward Phoenix Log*, Seward, Alaska
- *The Alaska Weekly,* Fairbanks
- *The Harvard Crimson*

Conventional Radio Features and Webcasts

- National Public Radio
- Voice of America
- Radio Moscow
- Radio Free Europe
- BBC, Radio 4, Edinburgh, Scotland.
- "Radio Orange," 94.0 FM, Vienna, Austria.
- *The Space Show,* online radio show

Wire Services

- Reuters
- United Press International
- Associated Press

Television and Film

- Canadian Broadcasting Company
- BBC
- *National Geographic*.
- TVF, a London-based television production company
- Irish film company
- Dutch Television
- Soviet television documentary
- Discovery Channel, acting as a consultant for NASA-Ames, gave on-camera interview
- TechTV, San Francisco.
- KFTY-TV (Channel 50), Bay Area, California.
- **Recently:** NHNZ-TV, PO Box 474, 8 Dowling St., Dunedin 9016, New Zealand (Technical Consultant for a reality show series about a Mars rehearsal mission for Science and Discovery Channels. Several people would be confined to a mock-up of a Mars habitat and various environmental and social psychological problems would have to be resolved.)

Technical Writing – Municipal Projects

In the pre-desktop computer era, this was one of my more "normal" project jobs (and enjoyable).

1978 - 1989

- I provided technical writing services to the City of Seward, Alaska.

- I provided technical services to Philleo Engineering, Inc. concerning various public works in and around the City of Fairbanks.

Legal and Law Enforcement

Reflections:

- ***Before I received much formal training in field research, I was learning it on-the-job in my criminal justice roles.***
- ***In those roles, I received insight into those activities that recently got former U.S. Senator Ted Stevens in trouble for graft and corruption, his "business as usual" catching up with him.***
- ***I saw firsthand how huge construction projects in out-of-the-way places could be used by a large number of interests to provide resources and to bleed off funding to enact various "black" projects within the United States and abroad.***
- ***For a number of years, my daily round consisted of having coffee mid-morning with PROD members in the labor movement, some of whom were freely cooperating with federal agencies to collect data regarding union racketeering. Later, I would attend a class or two at the University of Alaska-Fairbanks. If I had paid project work ongoing on campus, I would attend to that for an hour or two. Then, I might travel to an unmarked office building not far from campus that was being used by state and federal investigators to have a meeting, perhaps to receive instructions on whom to next collect data on (usually through some face-to-face interaction under cover of some innocuous activity, which sometimes was a paying union job). There was little time for homework, housework, and being a wife, but somehow I made do. I got used to multi-tasking before that became a popular term in the lexicon.***

1978 – 1983, in the main, and residually continuing through the 1980s

Criminal Justice Contractor/Consultant. Coming to their attention in my job as an investigative news reporter with Mutual Broadcasting affiliates in Alaska, federal agents and their associates recruited me into this role. These agents and their associates were specific to the U.S. Department of Justice's Organized Crime Strike Force. Their interest largely had to do with illegal business and financial transactions of businesses and banks connected with the Trans-Alaska Pipeline economy and those unions involved in the construction of the pipeline. Coming in, I had a reputation for my stories getting action, like the rebuilding of the overland link between Anchorage and Seward after a triple avalanche. At first, my work was not much different from my investigations to follow up a news story. I just couldn't blast my findings all over the airwaves. I had a selective "audience." And, as touched on above, I provided research and information gathering services for a federal grand jury, convened in Anchorage, in collaboration with agents of the U.S. Department of Justice's Organized Crime Strike Force (San Francisco), FBI, Criminal Investigation Division of the I.R.S., and the U.S. Labor Department. At issue were the activities of several Alaska oil pipeline unions and banks and businesses in Alaska, Washington, and California.

However, my information-gathering services to these federal law enforcement agencies expanded as investigations revealed other activities and my work became better known within criminal justice circles. With federal agencies and later, also with the Alaska Statewide Narcotics Enforcement Unit, my work became counterintelligence and/or counterterrorism in nature when, in the course of my duties, I began to penetrate of-interest groups living and working in Alaska. These included deviant union figures and groups trying to penetrate my circle of colleagues working for the Feds. Other groups included Balkan nationalists, Irish Republican Army officers and men, a Palestinian Liberation Organization general and his Alaska support network, and Contra-Era Latin Americans linking to a former CIA paramilitary and graduate of the School of the Americas living in Fairbanks, and who was engaged in a human trafficking and drug smuggling ring, and who used pipeline union halls and a Fairbanks restaurant from which to stage his activities. There was a degree of overlap among these groups on various points that made this work interesting. But, it was also dangerous work.

Methods and Equipment:

- I was, in general, familiar with social network analysis (SNA) and similar analytical techniques from my prior studies, though certainly not at the level as I later attained where I began to make innovations. I could link A with B, ascertain how closely related people were, etc.
- I could content-analyze documents, but not to the degree that I was later able – this included content-analysis of Spanish-language documents.
- I was often armed with a Colt-45 automatic or a smaller Bernardelli-model pistol for both "in the field" and home/office protection
- I used traditional detective techniques and equipment, for example:
    - I entered the main Alaska Teamsters Union hall in Anchorage "wired" on one occasion
    - I staked out the Fairbanks International Airport armed with a camera, surreptitiously taking photographs of persons of interest getting off of airplanes from the North Slope
    - Interviews
    - I adopted a variety of plausible personae for face-to-face interaction with perpetrators, which weren't too difficult to manage because I had a finger in a lot of public activities and had worked in many different occupations and on many different projects by this time:
        - Writer, looking for a story
        - Waitress in a union establishment
        - Publicist for a labor leader
        - Union member of two different unions
        - Interested affiliate of the Alaska Independence movement
        - University student, etc.

In 1984, Senators Ted Stevens and Frank Murkowski got passed federal legislation that backdated and made legal a good deal about the earlier business and financial transactions that had been illegal -- that my colleagues and I had investigated. As our federal agent colleagues left Alaska, moving on to other cases elsewhere in the nation, their associate colleagues, recruited out of Alaskan communities, were left "behind the lines," so to speak.

I left Alaska finally in mid-1989 to enter a doctoral program in South Carolina, which academically made sense for me to pursue (I had earned two Master's degrees already), but importantly, that opportunity was a rationale to get me out of Alaska where I no longer enjoyed certain law enforcement agency collegial protections.

Legislative/Political Work – 1980 to Present

Reflections:

- ***Among my proudest moments from this work was my then-Member of Congress Representative Don Young reading out of Pat Ivey's, Helen Bailey's and my "Energy Lands" book manuscript on the floor of Congress over C-SPAN.***
- ***Had I not gotten involved in criminal justice work and associated with union reformers, had I only engaged in the tamer media, public relations, and policymaking projects in Alaska that gave me public exposure, I would have likely wound up in some sort of state government managerial position. That was the way things were trending in the earlier 1980s.***
- ***Among the things I missed leaving Alaska for my doctoral program in South Carolina were the social networks and the high-level social functions to which I was generally invited in Alaska owing to my political connections and public personae there – like the gubernatorial balls and fundraisers of all sorts. I was a persona non grata in Columbia, South Carolina for the first or so year I was in my PhD program. I felt lost without my networks. What is more, the Deep South of the United States is still a place where "who you know" is as important as what you can do. My immediate family did not live in the area, was not well-connected, and had never been part of South Carolina public life. The only member of my family, a paternal first cousin, who did reach some level of political prominence as a promising attorney got himself in trouble by associating with someone involved in a financial scandal shortly before I arrived back in South Carolina for my doctoral program. I was without introduction as a politically mature adult in South Carolina society. The few times I had invited other family members to participate with me in public venues in the states of Washington, California, and later in South Carolina they were very uncomfortable. However, when I came on faculty at The University of South Carolina and on other tertiary campuses in South Carolina I began to weave some political and public connections from "second degree" affiliations in South Carolina. For example, I was able to approach a former president of my alma mater, Winthrop University, as an occasional sounding board. This was Philip Lader who had left Winthrop for an Australian university post, then was reborn as the host of the Renaissance Weekends at his home on Hilton Head Island. The Renaissance Weekends are where Democratic Party leaders make policy annually, similar to how Republican Party leaders make policy at the Bohemian Club in little Monte Rio, California every year. Phil was a chief architect of Bill Clinton's presidency. He came to serve as Deputy Director of the Office of Management & Budget, the White House Deputy Chief of Staff, and Administrator of the U.S. Small Business Administration. and he eventually became the American Ambassador to the Court of Saint James, although he was not a professional Foreign Service Officer. Being able to connect with folks like Lader and receive constructive feedback helped me keep a positive note as I kept body and soul together during my early doctoral years. Also worth mentioning was my former South Carolina Member of Congress. I had known his sister-in-law in Fairbanks, Alaska. We were one of about three South Carolina southern belles on the scene there (my co-author Patricia Ivey had formerly also been a South Carolinian). Being able to mention this connection was helpful in my getting one of my best faculty positions ever in the late 1990s. The academic dean of Erskine College was a member of the Congressman's family. As a sociologist, I know that one of the aspects of social structure is that the network connections that a person can have is as important as those he or she does have. My experiences at the more "political" interface demonstrated that aspect.***

Member, Initiating Group. Alaska Statehood Commission. I was nominated by Alaska legislators Don Bennett (Fairbanks) and Terry Gardiner (Ketchikan) as a Commissioner on this Commission that had been empowered by the voters of Alaska to examine Alaska's continued role as a relatively new state of the United States.

My book, *Alaska – Energy Lands: The Inside Story,* co-authored with National Press Women Patricia M. Ivey and Helen Bailey, helped tailor Public Law 96-487 (Dec 2, 1980, 94 STAT 2371), the Alaska National Interest Lands Conservation Act (ANILCA). Among other things, it involved changes to the Arctic National Wildlife Refuge (ANWR) and served as a precedent for federal public lands and environmental legislation in other states, including California.

Alaska State Legislature-Appointed Presenter (appointed by Senator Clem Tillion [Halibut Cove]), The Brookings Institution-sponsored "Future Frontiers of Alaska Conference," Epsilon Committee, Anchorage, Alaska. In committee, drafted and tailored state legislation about public lands, fisheries and wildlife, and public works for action by the Alaska State Legislature; and presented a paper.

I was selected for the management position in the Alaska State European Trade Office, Copenhagen, Denmark by Democratic Governor-Elect Bill Sheffield, mid-1980s. (My position evaporated when the Alaska State Legislature de-funded the trade office before the Governor-elect took office.)

I gave expert and televised testimony before the South Carolina State Legislature, at their request, concerning the undesirable experiences of citizens regarding "no-fault" automobile insurance in Alaska. (No-fault automobile insurance failed to gain a toehold in South Carolina.)

I presented my credentials, upon his request, to South Carolina Governor Carroll Campbell for the Executive Policy and Programs expert talent bank, 1993.

Cultivation of The American Plan (the Graduated Random Presidential Primary System). See www.americanplan.org for a full description of the non-fiction book on this topic written by Thomas Gangale in which I am a featured true-to-life character. The book is also profiled over www.amazon.com. I am in the book because I was instrumental in putting the American Plan in the national eye alongside Gangale. I was the manager of this project under the OPS-Alaska imprimatur. Implementing the American Plan requires an agreement between the Democratic and Republican Parties. Tom and I were involved in trying to make the liaison between the two parties. Along with two of the American Plan's major supporters, we presented the Plan to the National Association of Secretaries of State (NASS) in Santa Fe, New Mexico in 2006. We hoped to have the American Plan in place by election cycle 2012. The Plan would change the way Americans nominate their presidential candidates, getting rid of all the downsides that the United States has experienced in this regard for a number of decades.

Elected representative from Sonoma County to the California Democratic Party, 2006-2008.

Elected Member and Officer, Sonoma County Democratic Central Committee, California, 6 Jun 2006; re-elected, 3 Jun 2008 through 2010. (Via an illegal vote of this committee of only a few persons, I was removed from my publicly elected seat in February 2009, to which over 4,000 persons from Sonoma County elected me, on the basis that I had "too many" absences while still serving under a DoD Letter of Authorization for my Army work in Afghanistan. By April 2009, on appeal, the California State Democratic Party did not force my reinstatement even though it could have and despite the protestations of the Veterans' Caucus and others. I have not been an *active* Democrat since. Like my current Member of Congress said, "That would be like someone arbitrarily removing me from my elected seat." That was exactly what it was like.)

Work Abroad

1998 - 2000

- Visiting Researcher. Institute for Biological Problems of the North (IBPN). Magadan, (East) Russia; Sea of Okhotsk coastal field sites. July 1998.

- Visiting Researcher, Principal Investigator. Institute for Biomedical Problems (IBMP). Moscow, Russia. October and December 1998.

- Session Chair, 13th Man in Space Symposium, International Academy of Astronautics and the Greek Aerospace Medical Association, Santorini, Greece. May 2000.

2008-2009

- Social Scientist, Human Terrain System, US Army. Deployed in Kuwait and Afghanistan. In this role, I performed research as a senior Human Terrain Analytical social scientist stationed at Bagram Air Field in Afghanistan and collected primary data in "full battle rattle outside the wire" embedded with Army troops in Ghazni Province.

Managerial/Administrative/Project Management

Reflections:

From my mid- to late 20s onward, I began orchestrating large numbers of people on projects, in person and at a distance. The Alaska Teamsters campaign for a reform slate of officers had an inner and outer core of cadre of over 100 persons altogether who had to be overseen and marshaled and about 3,000 Alaska Teamsters expected to be loyal to the PROD candidates who had to be organized. The Kara Kirghiz management issue was interesting, too, because I was able to get people in far-flung places in Europe, Pakistan, and Indonesia to do legwork for Louis Dupree and me. And, what's more, the U.S. State Department depended on me to convey to them the precise day-to-day activities throughout the world relating to the Kara Kirghiz project so that they could make appropriate decisions on their end.

1978 - 1982

Totem Productions. I managed a variety of media production projects with contract staff working under me.

Some Projects. I produced and hosted several episodes of my former KIAK colleague's, Yupik Eskimo Sharon McConnell's, syndicated *Alaska Native News*. In the production of that show, I worked with a variety of Alaska Natives in order to broadcast segments in their languages.

Rowley Media Services. A for-profit, and its non-profit twin, the Institute of Alaskan Affairs, were direct forerunners of OPS-Alaska, the network collaborative and think tank (below). Projects fell into three categories:

1) commercial media, public relations, and public opinion projects, 2) law enforcement projects, and 3) scientific, public diplomatic, and education projects.

Some Projects. (Commercial). Managing the reform (PROD) slate of candidates' campaign for leadership of the Alaska Teamsters Local 959. PROD was the Professional Drivers' Council, Ralph Nader's labor reform group.

(Law Enforcement). Counterintelligence/counterterror activities for the Alaska Statewide Narcotics Enforcement Unit and related agencies.

(Scientific, public diplomatic, and education) The rescue and relocation of the Kara Kirghiz (mentioned above).

1985 - 1986

Archaeological Field School, University of Alaska-Fairbanks. Around 1985 and 1986, I helped manage the University of Alaska-Fairbanks Archaeological Field School.

Some Projects. The Chugwater Early Man Excavation. I supervised undergraduate and graduate students and non-academic personnel in remote and classroom locations in Alaska, about 15-20 persons at any instance.

1990 – present

OPS-Alaska. The way OPS-Alaska has evolved, a think tank that is a network collaborative in structure, associates work as independent contractors on projects assisted by the resources of institutions to which they may also belong. The University of South Carolina and a State of South Carolina health agency where I have worked have willingly assisted me with OPS-Alaska projects.

The University of South Carolina – 1990 -1992

Mentioned above and in the Appendix that follows, at The University of South Carolina, under the flag of OPS-Alaska, we made the connections and designed the methodology for the Kuwait Victimization Assessment Data Base (KVAD) project. The initial conceptualization wasn't actually mine – to motivate sociological know-how for Kuwait -- but an idea of one of The USC's Sociology Department graduate cohort, my friend, Wylie Wright. With his cooperation, I took the idea and worked with it. Once again, this involved the organization and management of persons from a number of different institutions and firms at a distance. I managed about 40 persons around the world who signed onto the project, with the core cadre being from among personnel of South Carolina colleges and universities, some of whom were military veterans of the United States Army and United State Air Force. And, also playing advisory roles were Dr. Louis Rey, an important *de facto* French scientist-public diplomat from the corporate sector, whom I had known at the University of Alaska-Fairbanks, and Benjamin Ferencz, a former Nuremberg Trial prosecutor, and a noteworthy proponent of an international criminal tribunal concerning Iraq's invasion of Kuwait. When the tribunal for Kuwait was not convened, I turned our methodology over to the United Nations research division where Louis Rey had a collegial relationship with Dr. Andronico Adede. As a result, the KVAD methods likely wound up identifying patterns and perpetrators of political violence in the Balkans a short time later through this avenue.

Chrysalis Center. A partner campus to the Medical University of South Carolina (MUSC). Late 1994 – 1996.

I eventually became the intermittently acting manager of this facility of the State of South Carolina's Alcohol and Other Drug Abuse Services that was in receipt of National Institutes of Health funding for research data it generated in collaboration with the Department of Psychiatry, Medical University of South Carolina. Chrysalis Center was one of 63 such facilities in the United States that was part of the NIH project. Among my many other duties, I kept the many hundreds of thousands of dollars of federal funding flowing, was in charge of quality assurance and response to auditors, oversaw research data being provided to the MUSC, and I managed over 50 persons, including nursing assistants, nurses, contract physicians, and dentists. I also supervised several Master's students in their programs. Chrysalis Center was also a service-learning venue.

Some Projects. My supervisors, professional personnel, and the infrastructure of this state agency's facility enthusiastically assisted with my external projects under the OPS-Alaska flag. The National Science Foundation (NSF) funding that had to do with the functionality of extreme environmental work teams, below, that OPS-Alaska later garnered, owes a debt to these resources. Primarily, I was allowed office space and equipment, medical and psychology colleagues who served as valuable sounding boards, and time for conferencing and making a feasibility study.

Various Aerospace Projects, 1997 – 2004.

Extreme Environmental Group States Research. By the end of 1997, the National Science Foundation was poised to fund some of us connected to OPS-Alaska for our space and polar exploration group states research, which also tied to my dissertation topic. I managed several colleagues, graduate students, and undergraduates on the NSF-funded group states project. **External Assisting Institutions:** The University of South Carolina, Erskine College

Russian Space Station Simulation/NASA-Related Extreme Environmental Habitat in the Arctic . With NSF grant money beginning to flow, we were able to use other project funds to investigate the Russian space station simulation at the Institute for Biomedical Problems in Moscow, Russia. I significantly contributed to this project over a number of roles (late 1997-1999), as did my role (with Thomas Gangale) in being just a handful of those project manager-designers who designed and resourced the original NASA-related Mars Arctic Research Station on Devon Island in the Eastern High Arctic in Nunavu't Territory (1998-2000). I coordinated among several colleagues in the United States, Canada, Russia, and Europe concerning the Russian space station simulation. **External Assisting Institutions:** The University of South Carolina, Erskine College

NASA-Ames Research Center NASA Mir Space Station Mission Study. In collaboration with a program at NASA-Ames Research Center, I performed a human factors study over the several manned missions NASA flew on the Mir space station. This study has been characterized by my senior colleagues in social psychology and the human factors

fields as "brilliant" and "pioneering." **External Assisting Institutions:** Institute for Biomedical Problems, Moscow, Russia

The American Plan, A Public Policy Project, 2003 - ongoing

Mentioned above: On the political science project front, the American Plan presidential primary nomination reform project that is still ongoing (owing to political discussions and liaisons it has cultivated) has produced a hard-cover book sole-authored by Thomas Gangale, recently published by Praeger. With Thomas Gangale, I coordinatied among several members of the Democratic National Committee and the Republican National Committee to bring the Plan to fruition. We orchestrated among those who have previously held high federal positions or who have served in the U.S. Congress. The work to get the Plan instituted by the 2012 election cycle has to occur in advance. Part of the problem is that the DNC and RNC business calendars do not quite mesh up. **External Assisting Institutions:** San Francisco State University, Center for Voting and Democracy (www.fairvote.org)

Tertiary Teaching Over an Intermittent 30-Year Span. But, in particular from 1989 onward, I have managed classroom sizes from just a few students, as in the upper-level courses at Erskine College, where it was possible to fit the class comfortably in my large office, and classroom sizes of over 400 persons, where they had to be fitted into the auditorium of the Callcott Building at The University of South Carolina. At Erskine, I was the Sociology Program Head in a blended psychology, sociology, and anthropology department.

Mission Essential, GS-15 Equivalent, Manager/Supervisor. In 2008 and 2009, I was an independent contractor *dba* OPS-Alaska to the Human Terrain System, US Army through a government subcontractor. Though my duties were Human Terrain Analysis research in nature, from open-source and classified records, and also from primary field research conducted while embedded with troops on missions, I was also responsible for leading and managing cultural analysts and other personnel on projects and on missions. My after-action reportage and lobbying about the dysfunctions of the project and recommendations for repairing them helped launch a number of Congressional and Army investigations into the problems. Those are still ongoing.

Teaching

Reflections:

Several happenstances hampered my teaching career or else forced me into career choices I might not have made. At least twice that I know of, I have not been hired after word-of-mouth assurances and/or official paperwork being consummated because a dean took the hiring decision away from department chairs wanting me for their departments. These are all excellent examples of how social forces impact our lives, and some are also good indicators of how the corporatization of American Academe operates.

1. ***I did not initially intend to teach at the tertiary level. During the very last course of my American secondary teaching credential program at the University of Alaska-Fairbanks, I was forced to withdraw by the North Star Borough principals in Fairbanks, Alaska because my business, Rowley Media Services, was handling the PROD slate of union reform candidates for the Alaska Teamsters Local officer elections. I was also doing criminal justice work collecting data on illegal union practices and related crimes at the time. The principals had a collective bargaining agreement with the Teamsters at the time. My clients did not come forward with the information about the Teamster principals until I was being forced from the course that kept me from getting my credential in the expected timeframe.***
2. ***In 1991, I was selected for a full-time tenure-track sociology teaching position at Midlands Technical College in Columbia, South Carolina, but the position was de-funded before I got through the hiring process.***
3. ***In 1993, I had actually signed the payroll paperwork for a tenure-track sociology position with Trident Technical College and was about to travel to the campus to move into my office when the dean took the hiring process over from the department chair.***
4. ***In early 2000, I was chosen for a Lecturer position with the Sociology Department at the University of California-Santa Barbara. After I signed the contract to teach five classes for the next two semesters, the position was apparently defunded without my being notified.***

5. ***Expecting to assume a tenure-track position at Niagara University to replace a retiree in the blended sociology and anthropology department, beginning the 2000-2001 academic year, the dean took the hiring decision out of the hands of the chair.***
6. ***The budgetary crisis at Sonoma State University threatened to lay off more than half our faculty and brought administrator malfeasance issues to a head. These events saw me being among a handful of chief architects of "the Sonoma Model" that included the largest demonstration on the campus in its 40-year history in March 2003. I had a number of collateral teaching contracts with the SSU and its satellite that were successively not renewed from 2004-2007. I was not chuted into guaranteed interviews and positions under collective bargaining agreements. My closest colleagues were also treated badly by association. Chief among these were Bob Watrous, R. Singh, and Thomas Gangale.***

Courses Taught

I have taught intermittently in the tertiary environment for over 30 years. My tertiary level teaching spans various courses in leadership, criminal justice, political science, international relations, sociology, psychology, anthropology, theories and techniques of psychotherapy (service-learning provided by me during my clinical facilities work experiences), archaeological field methods, geological remote sensing, English, freshman seminar, and public speaking. Most of what I have taught, however, is in the realm of **sociology and psychology.** My leadership courses were prepared for an online doctoral program for busy professionals and were entitled "Transformational Leadership" and "Innovation and The Moral and Social Responsibility of Leadership."

My main "tours-of-duty" of tertiary employment were at the University of Alaska-Fairbanks (where I was often on staff for an 11-year period), at The University of South Carolina (where I was on faculty over a number of contracts during my 11.5 years in the doctoral program), and at Erskine College, a private college in Due West, South Carolina, with which I was associated for a total of three years as a professor and researcher. In California, in the 2000s, I assisted Master's students in international relations at San Francisco State University with their theses by reviewing them over the rudiments of quantitative and qualitative research methods and thesis writing through their "Masters of International Relations" association. I was in the California State University system for more than five years at its Sonoma State campus and its satellite campus, Solano Community College.

Social and Behavioral Courses Taught Include:

- General sociology (introductory)
- Social problems including race and ethnicity topics)
- Social and behavioral research methods, quantitative and qualitative
- Sociological analysis
- Sociological theory, classical and contemporary
- Social change and technology
- Social change (including the evolution of religion)
- Senior Sociology Seminar
- Methods Seminar
- Globalization and transnationalization (designed the course and taught it for several years, required in a CSU political science program)
- Sociology of career planning
- Marriage and the family
- Human sexuality (including socialization topics)
- Gender roles (including socialization topics)
- Family theory/systems (including socialization topics)
- Social psychology (including socialization topics)
- Child and adolescent development (including socialization topics)
- Life span development (including socialization topics)
- Alcohol and drug abuse prevention
- Drugs and society (cross-referenced as a criminal justice administration course)
- Deviant behavior (cross-referenced as a criminal justice administration course)
- Deviance

- Human growth and development (including socialization topics)
- General psychology (introductory)
- Abnormal psychology
- Numerous independent and special studies over a broad range of topics
- Special topics courses include: Off-normal Behavior in Extreme Environmentsand administering internships through law enforcement agencies (service-learning). Just prior to my arriving to teach at Sonoma State University, I interacted with the San Francisco Police Academy and a resume of my expertise was placed in their active files for call-up as a trainer in relation to extreme environmental behavior and counterterror). My "Deviant Behavior in Severe Environments" course saw several Erskine College students traveling in Europe together on a shoestring, keeping fieldnotes, and tabulating data when they returned.

Teaching Employment History

2010-present. Head, the School of Social Sciences, 'Atenisi University, Nuku'alofa, Kingdom of Tonga.

2001-2007. Lecturer. Department of Sociology, Educational Mentoring Team, and Extended Education, Sonoma State University, Rohnert Park, California (2001-2006) and at SSU satellite campus, Solano Community College (2005-2007).

2000-2001. Instructor. Department of Sociology, Winthrop University (formerly College), Rock Hill, SC.

1999-2000. Visiting Researcher. Department of Psychology and Sociology, Erskine College, Due West, SC.

1997-1999. Visiting Assistant Professor of Sociology and Head of the Sociology Program. Erskine College and Seminary, Due West, SC. Adjunct. Midlands Technical College and Limestone College. On adjunct faculty roll, sociology and anthropology, The University of South Carolina Division of Continuing Education.

Note: Midlands Technical and Central Carolina Technical Colleges operate transfer programs to The University of South Carolina at Columbia and Sumter, SC. So, I taught my courses in those schools at the same level as I did at The USC.

1996-1997. Adjunct Professor. Midlands Technical College, Columbia, SC and Central Carolina Technical College, Sumter, South Carolina.

1995-1996. Clinical services supervisor, counselor supervisor, acting program director, and intern trainer for psychology, social work, and counseling Master's program students from Francis Marion, Webster, and Liberty Universities, Chrysalis Center, Florence, SC.

1994. Adjunct Professor. Limestone College, Gaffney, SC.

1991-1993. Adjunct Professor. Midlands Technical College and The University of South Carolina, Columbia, SC (1993). Also served as a faculty mentor with The USC Mentoring Network.

Throughout the early 1990s, taught tertiary courses intermittently through Midlands Technical College programs at *three* Columbia, South Carolina prisons: Manning, Kirkland, and Broad River Men's Correctional Facilities.

1990-1991. Adjunct and Visiting Assistant Professor. Benedict College, Columbia, SC, Midlands Technical College, Limestone College, and The University of South Carolina.

1989-1990. Teaching and Research Assistant. Sociology Department and Small Groups Laboratory, The University of South Carolina.

1985-1986. Assistant to Director and Instructor. Archaeology Field School, University of Alaska, Fairbanks, Alaska. Supervised and taught undergraduates and graduate students in excavation and archaeological remote sensing techniques.

Funded Undergraduate Research

- Co-valedictorian, Class of 2000, Erskine College, Lucas Hollar was funded to participate in summer undergraduate research in the life sciences at Kennedy Space Center through my application and reference for him. Over $1,000. 1998.

- $1500+, for Ms. Meredith Huey, Senior, Erskine College, from a foundation to fund undergraduate research among private South Carolina colleges and universities. 1999. From the Erskine College news release online (http://www.erskine.edu/news/showcase.3.17.99.html):

On February 3 the Independent Colleges and Universities of South Carolina (ICUSC) held "Showcase 99" in Spartanburg. "Showcase 99" was the Undergraduate Research Symposium funded through ICUSC by The Milliken Foundation, The Jolley Foundation, The F.W. Symmes Foundation, The Hoffmann-La Roche Foundation, and The Fluor Foundation. The Milliken Company hosted "Showcase 99" at their research center in Spartanburg.

The title of Ms. Huey's research which she presented on at "Showcase 99" was: "Off-normal Behaviors and Performance Among Team Personnel in Space and Polar Environments: the Effects of Size and Heterogeneity of Crew and Mission Duration."

- $10,000, undergraduate research supplement, from the National Science Foundation. Several undergraduate projects and participations were enabled ranging from Erskine College students (including more support for Ms. Huey's and Mr. Hollar's research, above) from 1999 to 2000 and Sonoma State University students from 2001 to 2004. SES-9944042.

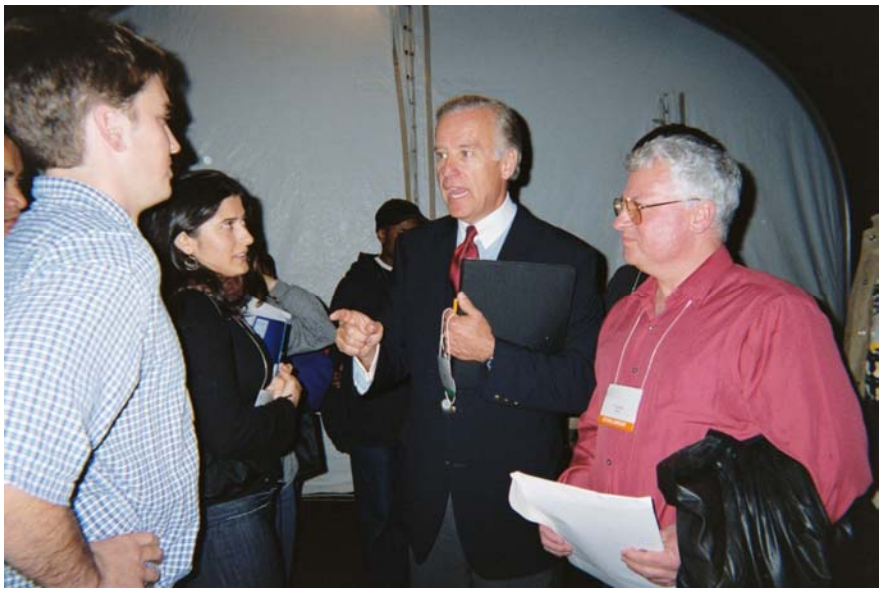
- Non-monetary resourced participation. Twenty students of my Sociology 300 Sociological Analysis class at Sonoma State University showcased their research projects on the 25th of April at the 27th Annual California State University system (CSU) Student Research Conference on the San Francisco State University campus. The annual conference was a project of the Social Science Research and Instructional Council (SSRIC), the oldest of the disciplinary councils in the CSU system. The students comprised research groups of co-researchers delving into six topics of 2-4 persons each as part of their coursework for the semester.

- Spring 2004, awarded $1000 in "seed funding" in the first round of Sonoma State University's School of Social Sciences grants. My students and I examined the transnationalization of terrorism using Internet resources over 37 deviant groups.

Graduate Supervision

I have assisted and supervised many Master's and Doctoral students in their social work, psychology, counseling, clinical psychology (in clinical venues [service-learning], above), cognitive psychology, international relations, human ecology, engineering, and technology management programs. These students have been affiliated with Francis Marion University, University of Hong Kong, Stanford University, University of California, Berkeley, San Francisco State University, San Diego State University, the Institute for Imaginal Studies, Moscow Aviation Technical Institute, and several universities in Sweden.

This supervision and assistance includes a doctoral dissertation project on aerospace industry production in Sweden and its socioeconomic and environmental impacts on that nation. The student was a Russian Space Agency guest Cosmonaut-Engineer from Argentina. He had chosen a program at Chalmers University, Göteborg. I developed a dissertation project for him in large part from conversations with the student and communiqués from Vice-Dean Beng Berglund, Head of the Doctoral Programs of Technology and Management School and Chairman of the Department of Technology and Society at Chalmers University (Goteborg, Sweden). The report of the intended project was entitled "Management and Production Planning in the Aerospace Sector: The Impact on Swedish Society and Its Economy."



Students from Sonoma State University and San Francisco State University discussing Central Asian affairs with then-Senator Joseph Biden (now Vice President of the United States) at the World Affairs Council of Northern California annual meeting in Pacific Grove, April 2003. I mentored one of these students with his essay that earned him a scholarship to this event that allowed him to interface with Biden and others. Photo by Dr. Marilyn Dudley-Flores.

Other Academic Employment

I am atypical in that I have taught in almost every conceivable setting. I have taught special education-need pre-schoolers, developmentally disabled adults in vocational education settings, mainstream K-12 students, tertiary undergraduates, graduate students, and soldiers in military settings. I have taught in clinical and law enforcement service-learning venues.

My 11 years intermittently on staff, part-and full-time, as well as some volunteer work, at the University of Alaska-Fairbanks, had me wearing various hats: Counselor, Military Extension Office (1978); Editor, Lesson Planner, Center for Cross-Cultural Education/Studies (1979); Translator and Editor, Institute of Arctic Biology (1981); Volunteer and Researcher, Geophysical Institute (1981-1989); Supreme Court Justice, Chief Justice, Public Affairs Director, and Elections Board Member, Associated Students of the University of Alaska (paid positions [rare for the venue] 1985-1986); Physics Club President and Member of the Sigma Pi Sigma National Honor Chapter Founding Committee (1987-1988); Volunteer, Paid Archival Worker, and Assistant to Collection Development Head, Alaska and Polar Regions Department (Oral Histories, Archives, and Collections Development) Elmer E. Rasmuson Library (1985-1989), University of Alaska-Fairbanks.

Tutor to elementary and high school students in Alaska with learning disorders. Similarly, provided occupational training to deaf and developmentally disabled food service worker-trainees with the U.S. Bureau of Land Management Alaska Forest Fire Service support functions (specifically over 1981-1983), all intermittently over 1978-1987.

Additional teaching includes some substitute teaching grades K-12 in public school, Fairbanks North Star School District (Alaska), Pullman High School, Pullman, Washington, and on the District 5, Irmo (South Carolina) rolls; I provided special education to autistic, brain-damaged, and Asperger Syndrome residents at Pine Grove School, Elgin, South Carolina; and Seward Skills Center (an Alaskan technical college), private tutoring, and teaching segments on U.S. Army courses in mountaineering skills at the company level (altogether spanning 1975-1994).

Geo- and Environmental Sciences Work

Being educated in geoarchaeology and geological remote sensing, I am a *bona fide* planetary scientist and have some credits along those lines. In addition to over a hundred undiscovered clear and potential archaeological sites I detected along the Alaska littoral, I discovered and mapped:

- Shoals in a zone in the Chukchi Sea at 72.65°N 176.32°W, detected via NOAA thermal infrared satellite imagery and coordinates determined by the Polar Satellite Image Digitizer (PSID), as part of a comprehensive Arctic Ocean Shelf Sea shoaling zone mapping project that I began and intermittently worked on for several years. With the assistance of the University of Alaska Geophysical Institute, Fairbanks. 1980-1989.

- Palaeostream channels which I attributed to catastrophic permafrost melting owing to past volcanism in the Devil Mountain Lakes area of the Seward Peninsula, Alaska, likely an Arctic analog of catastrophic channeling via past volcanism and meteoritic impact on Mars. My Devil Mountain Lakes studies were conducted through the use of NASA-NOAA aerial infrared photography under the supervision of Dr. James Beget, Department of Geosciences, University of Alaska-Fairbanks. Volcanism corresponding to the catastrophic channeling was later field-verified by Dr. David Hopkins. Dr. Beget and I also proposed research to NASA to map Martian permafrost through existing space probe imagery, 1985-1989. A follow-up publication on some of our Alaskan work was authored by Beget, J., Hopkins, D., and Charron, S. (1996) "The largest known Maars on Earth, Seward Peninsula, Northwest Alaska." *Arctic,* Vol. 49, pp. 62-69.\

- Society of Women Geographers, notably member Edith "Jackie" Ronne, nominated me for membership for contributions to geographical knowledge, 1997. (Mrs. Ronne, one of the first women to winter over in Antarctica, recognized me, for among other things, the implications of my discovery and mapping of shoals in Arctic Ocean shelf seas, some in oil-rich regions on which semi-submersible oil rigs could be mounted and protected from floebergs.)

NASA and Astronaut-Related Work/Events

Reflections:

I met Thomas Gangale, my frequent co-author, on the Mars Arctic Research Station project (below). We were two of only a handful of original designers/project managers. Tom made the original CAD drawings.

Invited Participant, NASA training tour for a space shuttle crew (STS-39). Poker Flat Rocket Range, Chatanika, Alaska, late 1980s. Following that participation with that space shuttle crew, NASA asked me to join an academic panel considering space sciences issues. That was my introduction to events in subsequent years.

Simulation Cosmonaut, Principal Investigator, Project Liaison/Coordinator, and other roles. Russian Space Station Project (SFINCSS-99: the "Simulation of Flight of an International Crew in a Space Station"), Institute for Biomedical Problems and IBMP Clinic, 1998. Only American and only other woman selected for containment within the Russian space station simulator.

Negotiator, between IBM and the Institute for Biomedical Problems (the IBMP), Moscow, Russia, for testbedding of IBM's Russian voice-recognition word processing application in the Russian International Space Station Simulator. (This came about when I realized I could use such an application in the coding of transcripts for research purposes from video footage shot in the Simulator.) Recommended design changes in IBM's Russian voice-recognition word processing application for research use in the Russian International Space Station Simulator. 1998.

Approved for eligibility. Mission Specialist (Scientist) Astronaut Candidate Program, active selection list, NASA-Johnson Space Center, 1999. I remained on the list till 2004 while engaging in a string of NASA-affiliated projects.

Negotiator and leader, a transnational team led by OPS-Alaska to develop profiles for lunar imagery-internet interfaced space missions. Participation by American, Japanese, French, and German partners. In relation to this, we authored a white paper, requested by Dentsu Corporation, Japan.1999-2000.

Human Factors Director on the original design and project management team for the design and construction of a Mars mission rehearsal facility on Devon Island, Nunuvu'ut Territory, in the Eastern Arctic, initially a NASA-sponsored facility for which I amassed resources for placement and construction from NASA-Johnson Space Center.

Non-Military Non-Traditional and Working-class Work Experiences

- Textile factory machine operator, Charlotte, North Carolina (during my Bachelor's program)
- U.S. Bureau of Land Management Forest Firefighter Support (multiple fire seasons at Fort Wainwright and Tanacross, Alaska) (during my two Master's programs)
- Long-haul tractor-trailer driver between South Carolina and California (during my doctoral program)
- Fire and Smoke Damage Restoration (during my doctoral program)

PUBLICATIONS AND PUBLISHED PRESENTATIONS

Reflections:

I am a prolific writer, as is my frequent co-author, Thomas Gangale.

Books and Book Chapters

In progress, *Tusayan: A True Story of American Terror.* Co-authored: Thomas Gangale and Marilyn Dudley-Flores. An exposé of criminal justice in Arizona.

In progress. *The Land Where Time Begins: Dispatches From Tonga.* Thomas Gangale (With Marilyn Dudley-Flores). A round-up of everyday Tongan life.

In progress, *Storm and Transformation.* The manuscript connects the dots on climate change, shifting world order, and the need for increased social and scientific investment. Sole-authored. Several shorter pieces below reflect this theme.

In progress, *Dark Side of the Moon.* (With Thomas Gangale.) Details my experiences in Afghanistan as a U.S. Army counterinsurgent that helped motivate the Congressional investigations of the U.S. Army Intelligence's experimental project, the Human Terrain System – the theories and methods of which Dr. Dudley-Flores pioneered in the Kuwait Victimization Assessment Database project of the Gulf War Era.

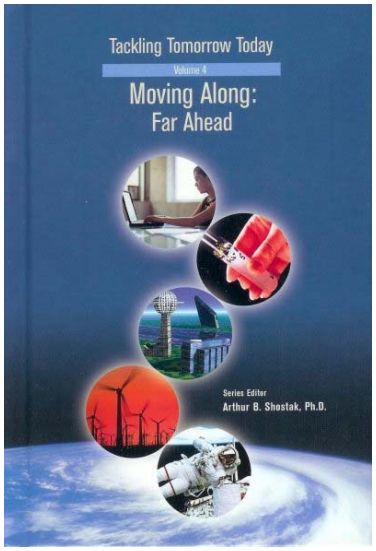
Under review. *Pipeline to Terror.* Sole authored. Details Dr. Dudley-Flores' criminal justice experiences with agents and teams connected to the U.S. Justice Department's Organized Crime Strike Force from the late 1970s through the 1980s that investigated racketeering, narcotics smuggling, and human trafficking in Trans-Alaska Pipeline Alaska. Praeger/Greenwood.

Submitted. "Glad Moon Rising – A World-Systems Perspective of the World in Space," (With Thomas Gangale) For *The Handbook of World-Systems Analysis: Theory and Research,* Salvatore Babones (University of Sydney) and Christopher Chase-Dunn (eds.), Abingdon, U.K.: Routledge, 2011.

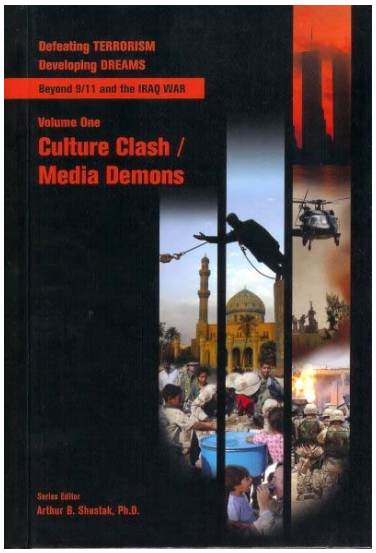
In progress. Two chapters in *Launching Astrosociology,* Jim Pass (ed.), one sole-authored on the astrosociological perspective on social problems and the other (on space policy) with Thomas Gangale.

"Future Tense: War and Peace 2015." With Thomas Gangale. *Moving Ahead.* Volume 2 of the *Tackling Tomorrow Today* textbook series. Ed. Arthur B. Shostak. Philadelphia, Pennsylvania. Chelsea House Publishers. 2004.

"Romancing the Clone: The Future of the Family and Related Issues." Sole-authored. *Moving Along: Far Ahead.* Volume 4 of the *Tackling Tomorrow Today* textbook series. Ed. Arthur B. Shostak. Philadelphia, Pennsylvania. Chelsea House Publishers. 2004.

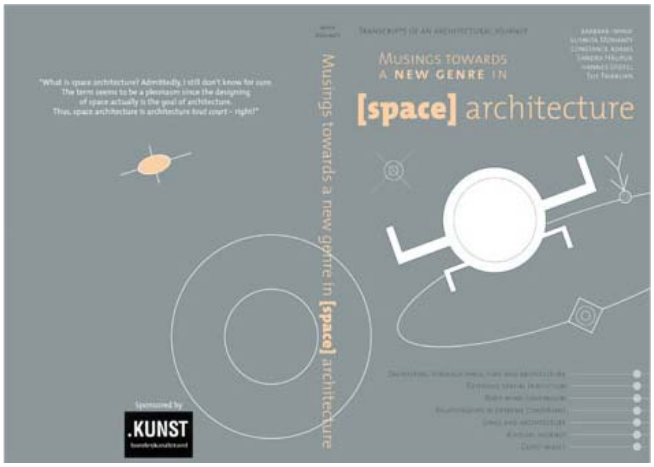


"The Culture of Elitism in the American Intelligence Community and the Transnationalization of Jihad." With Thomas Gangale, published in hard cover by Chelsea House Publishers, Philadelphia: Vol. 1 in the series *Defeating Terrorism/Developing Dreams: Beyond 9/11 and the Iraq War*, 2004. (A book series for high school and college students.)

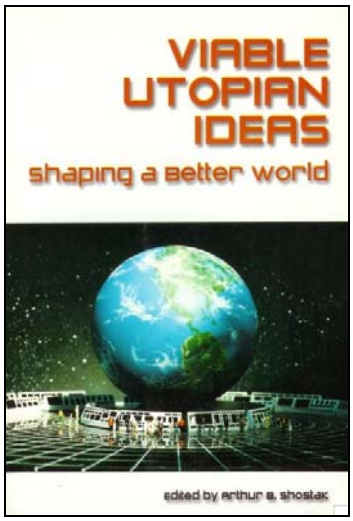


First Year Experience Guide for Success. Elisa Velasquez-Andrade, Catherine Freund, Brent Boyer, Ruben Arminana, Karen Brodsky, Lorna Catford, Katharyn Crabbe, Leslie Deming, Marilyn Dudley-Rowley, Ann Greenblatt, Pat Hansen, Catherine Kroll, Louis R. Mills, Gerryann Olson, Bruce Peterson, Janet Swing. Pearson, Sonoma State University. Rohnert Park, California.18 August 2004.

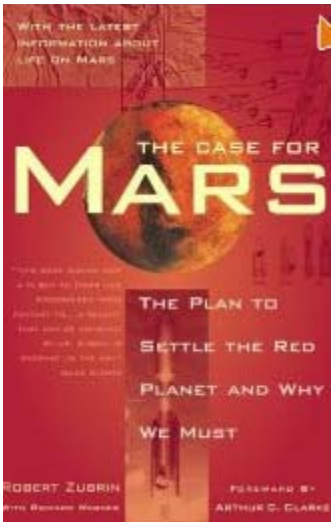
Commentators. While not contributing authors, my co-author, Tom Gangale and I, were cited extensively within the book (cover below) on sociological issues and I was termed a "guest muser" who had been invited to make commentary for inclusion in the book *Transcripts of an Architectural Journey: Musings Towards a New Genre in [Space] Architecture*. Editor: Sue Fairburn. Initiators and authors were: Barbara Imhof, Susmita Mohanty, Hannes Stiefel, Sandra Häuplik, Constance Adams. The project was financed by the Austrian Chancellery of Art .KUNST 2004.



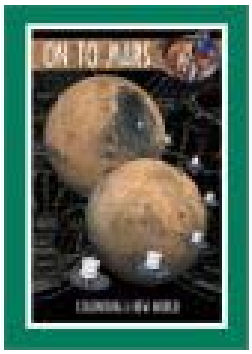
"The Outward Course: The Dystopias and Utopias Inherent in the Expansion of the Human Ecology," published as a shorter chapter that my editor renamed "The Outward Course: Dystopias and Utopias in Outer Space" in *Viable Utopian Ideas*, Ed. Arthur B. Shostak, Armonk, New York: M.E. Sharpe, 2003. Hard and soft covers.



Editor and author of preface with Vadim I. Gushin, Russian Edition, *The Case for Mars* by Robert Zubrin, originally published by the Free Press, 1997, finally published in soft cover in Russia in 2002.



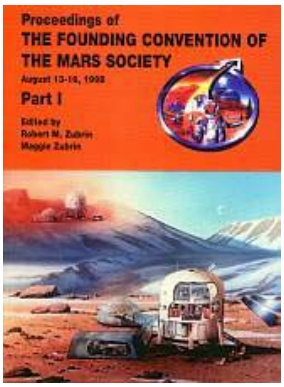
"Ten Missions, Two Studies: Crew Composition, Time, and Subjective Experience in Mars-Analog Expeditions," by Marilyn Dudley-Rowley, Patrick Nolan, Sheryl Bishop, Kristin Farry, and Thomas Gangale, presented August 2000, Toronto, Ontario, Third International Convention of the Mars Society. Published in *On to Mars: Colonizing a New World*, ed. by Robert Zubrin and Frank Crossman, Apogee Books, Burlington, Ontario, 2002.



"The Martian Time Poll: One Martian Year of Data," by Thomas Gangale and Marilyn Dudley-Rowley, presented August 2000, Toronto, Ontario, Third International Convention of the Mars Society. Published in *On to Mars: Colonizing a New World,* ed. by Robert Zubrin and Frank Crossman, Apogee Books, Burlington, Ontario, 2002.

"Dysfunctional Behavior and Performance of Team Personnel in Space and Analog Polar Environments: Implication for Mars Missions," presented August 1999, Boulder, Colorado, Second International Convention of the Mars Society. Published in *On to Mars: Colonizing a New World,* ed. by Robert Zubrin and Frank Crossman, Apogee Books, Burlington, Ontario, 2002.

"How the Mars Movement Could Achieve Solar System Exploration: a Mathematical and Structural Conceptualization," presented August 1999, Boulder, Colorado, Second International Convention of the Mars Society. Published in *On to Mars: Colonizing a New World,* ed. by Robert Zubrin and Frank Crossman, Apogee Books, Burlington, Ontario, 2002.



Two of my papers have been fully published in dual volumes of proceedings:

"The Outward Course of Empire: the Hard, Cold Lessons From American Involvement in the Terrestrial Polar Regions," presented August 1998, Boulder, Colorado, Founding Convention of the Mars Society. Published in *Proceedings of the Founding Convention of the Mars Society*, *Part I,* Univelt, Incorporated, San Diego, 1999.

"On Our Best Behavior: Optimization of Group Functioning on the Early Mars Missions," with Vadim I. Gushin, Institute of Biomedical Problems, Moscow, Russia, presented August 1998, Boulder, Colorado, Founding Convention of the Mars Society. Published in *Proceedings of the Founding Convention of the Mars Society*, *Part II,* Univelt, Incorporated, San Diego, 1999.

Guide to the Episcopal Church in Alaska Records. Book. Co-author/Contributor. A book project of the Elmer E. Rasmuson Library, University of Alaska, Fairbanks. Annotates Mission and Church Records from the 1800s to present and addresses white church workers in cultural isolation among Alaska Native peoples. (I worked intermittently with these records from 1985-1989.)

The Bibliography of Alaska Archaeology by C. Eugene West, Indexer/Editor, University of Alaska Press, 1989. (I also worked intermittently on this project in the mid-to-late 1980s with the Elmer E. Rasmuson Library faculty and staff.)

Das Ren Als Haustier (The Reindeer as a Domesticated Animal) by Wolf Herre. Translator and editor, Institute of Arctic Biology and University of Alaska Press, University of Alaska, Fairbanks, 1981. A book about not only the animals, but about the societies that rely on them. (In the end, the book may not have been published in English owing to my supervisor's, Dr. Jack Luick's, death.)

Alaska --Energy Lands. Book (technically still in press). Co-authored with Patricia M. Ivey and Helen Bailey, two other members of Alaska Chapter, National Press Women. The manuscript galleys helped tailor the Alaska Lands Bill apportioning public lands in Alaska. The galleys were read from on the floor after multiple copies were pre-ordered by the U.S. Congress in 1980. Representative Don Young, Alaska's sole Congressman, read from the book in front of C-SPAN cameras. The legislation was a precedent in public lands legislation for all western and Pacific Northwest states of the United States.

Reflection:

Strangely, as Energy Lands' popularity zoomed, people demanding to buy copies, and to get the copies they had already pre-ordered, the Alaska-based publisher began dragging his feet on bringing the book out in its intended hard cover format. After being "tomorrow'd and tomorrow'd," the co-authors filed a lawsuit to get the book published and to get their royalties from many thousands of dollars of pre-sales that the publisher had made to libraries around the world. Then, even more strangely, our lawyer next disappeared with the records documenting the lawsuit. Author Pat Ivey thought that someone had bought off at least the publisher to keep him from bringing the book out. We don't know which special interest might have done that. We interviewed a wide array of interests for the book (i.e., environmentalists, oil men, hunting and fishing groups, et al.). We also had an appendix of contributions from differing viewpoints, including a piece from Milton Friedman, the great neo-classical economist. The 35-year book contract with the publisher will not run out till 2015.



Above. Dr. Marilyn Dudley-Flores and Congressman Don Young reconnect on Capitol Hill where Dudley-Flores and Gangale went in July 2006 to introduce the American Plan to American Representatives and Senators.

It just may have been that Publisher Welmon Walker was not very good at the publishing business. Before the debacle with the Energy Lands book, he had successfully been sued by another of his authors, Edith C. Rohde, for pre-selling her book, Letters From Alaska: Hazards and Humor of Life in Subrrrbia and then not handing over the royalties due her. Before Walker's foot dragging became so apparent with Energy Lands, I agreed to edit the book of another Walker author. I have described the backstory on this as:

A Lynching From the Inside

Editor. 1980. *From the Inside Out: A Lynching in the North* by James Cameron (later followed by identical-topic'd books entitled *A Time of Terror: A Survivor's Story* [James Cameron] and *A Lynching in the Heartland* [James Madison], the latter published by Indiana University. At least two of these versions are African-American James Cameron's personal account of being rescued from a 1930s lynch mob in Indiana. The incident produced one of the most iconic lynching photographs in American history. After I edited the original Cameron manuscript, Cameron yanked his manuscript from Publisher Welmon Walker because of the same complications that most of Walker's authors suffered in getting Walker to publish and promote them in a timely manner.



A Catalog of Rural Teacher Resources in Environmental Studies, Communications, and Cultural Anthropology. Book. Editor. University of Alaska, Center for Cross-Cultural Studies, a book production of the National Small High Schools Project, 1979.

"Discovering Alaska: Maritime Exploration and Diplomacy," Section 2, Chapter 1 of the Alaska High School History Book, Contributing Author, Alaska Historical Commission, 1979.

Shakespeare and All Those Guys. A treatment of Renaissance English language, culture, and society for college freshmen. Author. Submitted for Special Studies Credit, English Department, Washington State University, 1978.

Journal Articles, Reports, and Technical Papers/Related Presentations

Accepted for publication. "Public Moods Toward Space Through Analysis of Popular Music: An Astrosociological Application," for an upcoming *Highlights* article of *Aerospace America.*

"The Rise of the Transnational State: Space Logistics, Sovereignty, and Diaspora Off the Earth," (with Thomas Gangale). For *American Institute of Aeronautics and Astronautics Space 2010 Meeting Papers on Disc* [CD-ROM], AIAA-2010-(TBA), Reston, Virginia.

Submitted. "The Political Economy of the Inner Solar System: A Forecast," (with Thomas Gangale), in *Astropolitics, The International Journal of Space Politics and Policy,* Spring 2011, Eligar Sadeh and Christopher Hearsey (eds.)

"Manufactured on the Moon, Made on Mars – Sustainment For the Earth Beyond the Earth," (with Thomas Gangale). *American Institute of Aeronautics and Astronautics Space 2009 Meeting Papers on Disc* [CD-ROM], AIAA-2009-6428, Reston, Virginia.

"Critiquing Rationales in Space Policy Proposals: Developing a Methodology for Evaluating Space Policy," Christopher Hearsey, Thomas Gangale, and Marilyn Dudley-Flores. *American Institute of Aeronautics and Astronautics Space 2009 Meeting Papers on Disc* [CD-ROM], AIAA-2009-6819, Reston, Virginia.

In progress, "*Pashtunwali* and Women: With a Focus on Their Public Life and Use of Space," Marilyn Dudley-Flores. Originally researched for the Human Terrain System, US Army, Fort Leavenworth, Kansas.

"Ghazni Mission After-Action Report -- 9-21 December 2008," Marilyn Dudley-Flores. On file at the Research Reachback Cell (RRC) for Afghanistan, Human Terrain System, US Army, Fort Leavenworth, Kansas.

"Timing is Everything: Disparate Temporal Regimes in Space Operations," (with Thomas Gangale). Originally published in part in *American Institute of Aeronautics and Astronautics Space 2008 Meeting Papers on Disc* [CD-ROM], AIAA-2008 –7612, Reston, Virginia.

Sole-authored. "Global Warming, Earthly Disasters, the Moon and Mars: Transfers of Knowledge (TOK) – The American Problem," *46th AIAA Aerospace Sciences Meeting Papers on Disc* [CD-ROM], AIAA-2008-1464, Reston, Virginia.

"Why America is Becoming a Second-World Nation (and California Is In the Crosshairs)," Parts I-IV, Marilyn Dudley-Flores, *California Progress Report,* 2-5 December 2007.

"The Globalization of Space - The Astrosociological Approach," Marilyn. Dudley-Flores and Thomas Gangale, *American Institute of Aeronautics and Astronautics Space 2007 Meeting Papers on Disc* [CD-ROM], AIAA-2007-6076, Reston, Virginia.

"An Astrosociological Approach to Defining Indigenous Martian Architecture," Adam Aaron Wapniak, Marilyn Dudley-Flores, and Thomas Gangale, *American Institute of Aeronautics and Astronautics Space 2007 Meeting Papers on Disc* [CD-ROM], AIAA-2007-6284, Reston, Virginia.

"Space and Perceptions of Space in Spacecraft: An Astrosociological Perspective," Jun Okushi and Marilyn Dudley-Flores, *American Institute of Aeronautics and Astronautics Space 2007 Meeting Papers on Disc* [CD-ROM], AIAA-2007-6069, Reston, Virginia.

Sole-authored under Marilyn Dudley-Rowley. "The Mir Crew Safety Record: Implications for Space Colonization." *American Institute of Aeronautics and Astronautics Space 2006 Meeting Papers on Disc* [CD-ROM], AIAA-2006-7489.

"Sustainability Public Policy Challenges of Long-Duration Space Exploration," Marilyn Dudley-Rowley and Thomas Gangale, *American Institute of Aeronautics and Astronautics Space 2006 Meeting Papers on Disc* [CD-ROM], AIAA-2006-7314, Reston, Virginia.

"The Social Construction of Time on Mars Results of Martian Time Survey v1.0 and v2.0-2.2 Compared," Thomas Gangale and Marilyn Dudley-Rowley, *American Institute of Aeronautics and Astronautics Space 2006 Meeting Papers on Disc* [CD-ROM], AIAA-2006-7490, Reston, Virginia.

Proposal. "The Transnationalization of Terror – a Human Factors Approach to Networks of Personnel, Materiel and Technologies, and Locations," A proposal submitted to the NATO Manfred Woerner Fellowship, 2004-2005 Programme, NATO Academic Affairs, January 2005. $30,000+, not funded.

"Habot Mobile Lunar Base Crew Skill Mix—Crew Time Model" by Marilyn Dudley-Rowley, Thomas Gangale, Lawrence Lemke, and Marc M. Cohen. Published as a SAE Technical Paper (2005 01-2792) in the SAE Technical Series and on CD, *Global Mobility Database*, 2005.

"To Build Bifrost: Developing Space Property Rights and Infrastructure," Thomas Gangale and Marilyn Dudley-Rowley, *American Institute of Aeronautics and Astronautics Space 2005 Meeting Papers on Disc* [CD-ROM], AIAA-2005-6762, Reston, Virginia.

Online Report. "Time for Two Worlds: The Effects of Disparate Temporal Regimes on Mars Rover Mission Control Crews." Marilyn Dudley-Rowley, Constance Adams, Sheryl Bishop, John Austin, Thomas Gangale, Charlotte Linde. OPS-Alaska. 13-Aug-2004. A Notice of Intent to the National Aeronautics and Space Administration. http://pweb.jps.net/~md-r/mars/NASA_NOI_TimeForTwoWorlds.pdf

Online Report. "Safety in Space: Predicting and Mitigating Safety Hazards Aboard Spacecraft and Space Stations." Marilyn Dudley-Rowley, Marc M. Cohen, Constance Adams, Sheryl Bishop, Pablo Flores. OPS-Alaska. 13-Aug-2004. A Notice of Intent to the National Aeronautics and Space Administration.
http://pweb.jps.net/~md-r/spaceEx/NASA_NOI_SafetyInSpace.pdf

"The Robosphere: The Conceptual Expansion of the Human Factors," Marilyn Dudley-Rowley and Silvano Colombano, *American Institute of Aeronautics and Astronautics Space 2004 Meeting Papers on Disc* [CD-ROM], AIAA-2004-5842, Reston, Virginia.

"The Architecture of Time: Design Implications for Extended Space Missions," Thomas Gangale and Dudley-Rowley, a publication in the hard-copy *Journal of Aerospace, Section 1 of the Transactions of the SAE, 2004.*

Online Report. "The New Kitty Hawk." Marilyn Dudley-Rowley, Thomas Gangale.
OPS-Alaska.
22-Jun-2004.
http://www.ops-alaska.com/spaceEx/SpaceShipOne.htm

Online Report. "From the Earth to the Moon and Beyond: Transnationalizing Space." Marilyn Dudley-Rowley. OPS-Alaska. 18-May-2004. A response to a National Aeronautics and Space Administration Request for Information, "Vision for Space Exploration." http://pweb.jps.net/~md-r/spaceEx/NASAISTC.pdf.

Online Report. "To Mars: Assured Communication With Mars (MARSSAT)." Marilyn Dudley-Rowley, Thomas Gangale.
OPS-Alaska.
18-May-2004. A response to a National Aeronautics and Space Administration Request for Information, "Vision for Space Exploration."
http://www.ops-alaska.com/mars/NASA_RFI_To_Mars.htm

Online Report. "From LEO to the Moon and Beyond: Human Factors Safety Concerns of Space Stations and Other Human Environments Away From Earth." Marilyn Dudley-Rowley.
OPS-Alaska.
18-May-2004. A response to a National Aeronautics and Space Administration Request for Information, "Vision for Space Exploration."
http://pweb.jps.net/~md-r/spaceEx/NASAISTC3.pdf

Online Report. "From the Earth to the Moon and Beyond: Transnationalizing Space." Marilyn Dudley-Rowley.
OPS-Alaska.
18-May-2004. A response to a National Aeronautics and Space Administration Request for Information, "Vision for Space Exploration."
http://pweb.jps.net/~md-r/spaceEx/NASAISTC.pdf

"1985 NASA Rockwell Space Station Crew Safety Study: Results From *Mir*," Marilyn Dudley-Rowley, Marc M. Cohen, and Pablo Flores, March 2004, in *The Journal of Aerospace and Environmental Medicine* (Moscow, Russia).

Proposal. "Needle-in-a Haystack Analysis of SIGINT Archives for Proximal Real-Time Response: Integrating Human Systems With Technology." A proposal to the Office of Naval Research and other federal agencies, by Marilyn Dudley-Rowley and Thomas Gangale (with Claudio Maccone), OPS-Alaska and George Edward Seymour, Navy SPAWAR Systems Center, San Diego, $698,000, not funded. Fall 2003.

"Design Implications of Latent Challenges to the Long-Duration Space Mission," Marilyn Dudley-Rowley, Jun Okushi, Thomas Gangale, Pablo Flores, and Eduardo Diaz, *American Institute of Aeronautics and Astronautics Space 2003 Meeting Papers on Disc* [CD-ROM], AIAA-2003-6239, Reston, Virginia.

"Extended Mission Systems Integration Standards for the Human-Environment and Human-Human Interfaces," Marilyn Dudley-Rowley and Sheryl Bishop, *World Space Congress Papers on Disc* (CD-ROM], AIAA-2002-6110, AIAA Space Architecture Symposium.

"Crew Size, Composition, and Time: Implications for Exploration Design," Marilyn Dudley-Rowley, Stewart Whitney, Sheryl Bishop, Barrett Caldwell, Patrick D. Nolan, and Thomas Gangale. *World Space Congress Papers on Disc* (CD-ROM], AIAA-2002-6111, AIAA Space Architecture Symposium.

Co-Editor with Scott Howe, "A Flexible Interior Design Concept for Space Applications," by Kenji Nozaki. (Team Leader, Space Systems Group, Institute of Technology, Shimizu Corporation, Tokyo, Japan), Hernan Lorenzo, (Research and Development Division, IACSA), Shinji Matsumoto (CSP Japan, Inc.), Toru Mitsuhashi (Design Division, Shimizu Corporation), Kenji Takagi (Space Systems Division, Shimizu Corporation), and Serkan Anilir (Department of Architecture, University of Tokyo). *World Space Congress Papers on Disc* (CD-ROM], AIAA-2002-6117, AIAA Space Architecture Symposium.

"Crew Size, Composition, and Time: Implications for Habitat and Workplace Design in Extreme Environments," Marilyn Dudley-Rowley, Stewart Whitney, Sheryl Bishop, Barrett Caldwell, and Patrick D. Nolan, Published as a SAE Technical Paper (2001-01-2139) in the SAE Technical Series and on CD, *Global Mobility Database*, 2001.

Proposal. "Extended Mission Systems Integration Standards for the Human-Environment and Human-Human Interfaces," a cooperative agreement proposal with NASA-Ames and NASA-Johnson Space Center and technically reviewed by the Defense Advanced Research Projects Agency (DARPA). March 2001. (Would enhance the NASA Man-System Integration Standards [MSIS] and related products.) Our paper on this topic was later published (above).

Proposal. "The Globalization of Space in the 21st Century: Implications for the National Aeronautics and Space Administration," Submitted to the Pricewaterhouse Endowment for The Business of Government, $15,000, January 2001-June 2001, not funded.

Proposal. "Murder in the Department: Factors of Organizational Deviance in Graduate School-Related Homicide, An Offer-to-Propose An Exploratory Study," offered jointly to The United States Federal Bureau of Investigation and The United States Department of Education by OPS-Alaska, with Marilyn Dudley-Rowley, 29 August 2000. (The proposal has been used several times by others in their courses on deviance and by doctoral students writing dissertations on graduate school-related homicide.)

"A Social States Index for Multi-national Crews Co-Contained in the ISS Simulator, Moscow, Russia," Marilyn Dudley-Rowley, Vadim Gushin, and Tom Gorry. Published as a SAE Technical Paper (1999-01-2101) in the SAE Technical Series and on CD, *Global Mobility Database,* ISSN 0148-7191, 1999.

"Medical Interrogatories for Assessment of Candidates for Participation Aboard the Russian Space Station Simulator," published on an Institute for Biomedical Problems website, July 1998.

"Procedures for Feminine Hygiene Aboard the Russian Space Station Simulator: a Technical Note," Institute for Biomedical Problems (IBMP), Moscow, Russia, October 1998.

Editor, "Some Problems of Psychological Interaction in Prolonged Space Flights" by O.P. Kozerenko, V.I. Gushin, A.D. Sled, V.A. Efimov, and J.M. Pystinnikova, State Scientific Center, Institute for Biomedical Problems, Khoroshevskoye shosse, 76A, 123007, Moscow, Russia, for *Journal of Human Performance in Extreme Environments*, 1998.



Dr. Dudley-Flores aboard the fully mocked-up International Space Station at NASA-Johnson Space Center in Houston, Texas. Mock-ups are used in situations where back-up teams on the ground must "work a problem" being faced by crews on orbit aboard the actual flight article.

"Deviance Among Expeditioners: Defining the Off-nominal Act Through Space and Polar Field Analogs," Marilyn Dudley-Rowley, *Journal of Human Performance in Extreme Environments,* Vol. 2, No. 1, pp. 119-127, June 1997.

"Modeling Social Interaction for the Nauvik Project - A Closed Ecological Life Support System, Fairbanks, Alaska," American Institute of Aeronautics and Astronautics Technical Series, AIAA-1995-1061.

"Directions in Elementary Theory," published in the Proceedings of the Alpha Kappa Delta (International Sociological Honor Society), 1990.

"A Review of Construction and Maintenance Techniques in a Permafrost Environment, Fairbanks, Alaska USA," Marilyn Dudley-Rowley and Leonard Weingarth. Abstract published in the *Proceedings* of the International Symposium on Cold Regions Development (ISCORD), Friendship Palace, Harbin, China, August 1988.

"*Rangifer Tarandus* in the Symbolic Record From Earliest Times to the Present," *Acta Zoologica Fennica*, 1983.

"The Emergency Locator Transmitter," training documentary for the U.S. Air Force. Co-produced with George Miller and Takotna Video, Anchorage, Alaska, 1978.

"Voices From the Antiquities," radio program special, producer and host, for Mutual Radio Network affiliate KIAK, Fairbanks, Alaska, addressing Alaskan homesteaders living in isolation in areas designated Antiquities Act lands by President Carter, 1978.

Note: This list does not include my main repertoire of newspaper articles and radio/TV credits on clinical, scientific, education, and ethical topics spanning 1973 onward.

Presentations and Briefings Only

Reflections:

Most professional society meetings where I participate and/or present usually saw my additionally actively working on various committees that do the work of the professional society.

Caveat: *This section is still being recouped from multiple records. Missing are entries relating to two NASA workshops and all Contact Conferences, one in which I was a panel chair. I also gave a third paper in Santorini, Greece.*

Presenter. American Institute of Aeronautics and Astronautics *Space 2009* Conference and Exposition, Pasadena, California, Sep. 14-17, 2009.

Participant. American Sociological Association Annual Meeting, San Francisco, California, August 2009.

Invited Participant. Foreign Service Association of Northern California Meeting, 2009.

Presenter. 46th American Institute of Aeronautics and Astronautics Aerospace Sciences Meeting and Exhibit, Reno, Nevada, Jan. 7-10, 2008.

Daily Briefer. Human Terrain Analysis Situation for Commander, 3rd Heavy Brigade Combat Team 1st Cavalry Division, Colonel Gary Volesky, Desert Training, Fort Irwin, California. 12- 29 Sep 2008.

Presenter. American Institute of Aeronautics and Astronautics *Space 2008* Conference and Exposition, San Diego, California, Sep. 9-11, 2008.

Presenter. American Institute of Aeronautics and Astronautics *Space 2007* Conference and Exposition, Long Beach, California, Sep. 18-20, 2007.

Presenter. California Sociological Association. 2007 Annual Meeting, Berkeley, CA. Presentations included:

- "The Core – the World System of Societies in Space," Marilyn Dudley-Flores and Thomas Gangale.
- "Storm and Transformation: Climate Change and the Rise of Socially Progressive Values," Marilyn Dudley-Flores and Thomas Gangale

Participant. 45th American Institute of Aeronautics and Astronautics Aerospace Sciences Meeting and Exhibit, Reno, Nevada, January 2007.

Session Chair. Annual Meeting of the Pacific Sociological Association (PSA). Session: Pirate Professors, Deviant Departments, and Disappearing Programs. March-Apr 2007. Oakland, California.

"Interfacing With Transnational Deviant Actors: Sociological, Criminal Justice, and Human Factors Methods," M. Dudley-Flores. Accepted for podium presentation selected for the International Studies Association, March 2007, Chicago.

"Transformational Recruitment for a Transformational Diplomacy: Beyond the American College Testing Model," M. Dudley-Flores. Accepted for podium presentation selected for the International Studies Association, March 2007, Chicago.

Invited Presenter, 56th Meeting of the U.S. Department of Defense Human Factors Engineering Technical Advisory Group, Naval Postgraduate School, Monterey, CA, 6-9 November 2006. I briefed this U.S. DoD technical advisory group over the following several presentations:

- "The Altman Scale Revisited -- Lessons Learned From the Russian Space Station Simulation," Marilyn Dudley-Rowley and Thomas Gangale, Test and Evaluation Sub-Technical Advisory Group Session
- "The Mir Crew Safety Record -- Implications About Hazards and Survivability From Space," Marilyn Dudley-Rowley and Thomas Gangale, System Safety, Health Hazards, Survivability Sub-Technical Advisory Group Session
- "Mir: Workload and Stress -- Lessons Learned," Marilyn Dudley-Rowley, Workload and Stress Sub-Technical Advisory Group Session
- "Human Factors Considerations for Timekeeping for Mars Surface Operations," Thomas Gangale and Marilyn Dudley-Rowley, Modeling and Simulations Sub-Technical Advisory Group Session

Presenter. *Space 2006,* San Jose, California, Sep. 19-21, 2006.

Presenter. "Public Sociology From Below," Pacific Sociology Association, 77th Annual Meeting, Universal City, Hollywood Hills, California, April 2006. (The theme of the conference was: Playing With Sociology: Pedagogy, Postmodernism, and Popular Culture.)

Invited Presenter. "Preliminary Findings of American Sociological Association Members' Attitudes Toward Astrosociology and the Study of Space," Astrosociology Session, California Sociology Association, 11 November 2005. (Among the purposes of this survey, which has only been reliability-tested at present, is to determine what sociologists know about the social aspects of the aerospace industry and the space exploration enterprise.)

Invited Presenter, "Claiming Geostationary Orbit and Owning Planets: the International Legal Perspective," Thomas Gangale and Marilyn Dudley-Rowley, for New Trends in Astrodynamics and Applications II, Princeton University, June 2005. (This presentation was meant for potential publication in the *Annals of the New York Academy of Sciences.)* However, portions of our presentation went on to be included in Gangale's upcoming book *What No One Has Owned Before: International Legal Issues of Sovereignty and Property Rights in Outer Space* (Praeger Security International).

Invited Participant. Foreign Service Association of Northern California Meeting, Anthony Holmes presenting, June 2006.

Presenter. California Sociological Association, 11 Nov 2005.

Invited Participant. Foreign Service Association of Northern California Meeting, Ambassador Wong, November 2005.

Presented. "Space Synapse System and the Symbiotic Sphere: Proxemics in Space and Feedback Through Cultural Diversity on Earth," Anna Hill, Marilyn Dudley-Rowley, and Jun Okushi, for the International Astronautics Congress, Cultural Dimensions of Space Session, Fukuoka, Japan, October 2005.

Presenter. Space 2005, Long Beach, CA Space 2005, Long Beach, California, Aug. 30-1, 2005

Presented. At the 35th International Conference on Environmental Systems, SAE, July 11-14, 2005, Rome, Italy.

Invited Presenter. "Sustainability Issues of Long-Duration Exploration of the Moon and Mars," with Thomas Gangale for New Trends in Astrodynamics and Applications II, Princeton University, June 2005.

Invited, presented. "Claiming Geostationary Orbit and Owning Planets: the International Legal Perspective," Thomas Gangale and Marilyn Dudley-Rowley, for New Trends in Astrodynamics and Applications II, Princeton University, June 2005.

Presented. "Enculturating the Overview Effect: The Space Synapse System and the Symbiotic Sphere," Anna Hill and Marilyn Dudley-Rowley, Space: Planetary Consciousness and the Arts, 9th Workshop and Symposium on Space and the Arts, Switzerland, May 2005.

Participant. Contact: Cultures of the Imagination, 22nd Annual Conference, NASA-Ames Conference Center, Mountain View, CA, 20 March 2005. An interdisciplinary conference began by anthropologists.

Invited Participant, Foreign Service Association of Northern California (FSANC), 1 March 2005, San Francisco, Keynote speaker: Ambassador Robert Pearson, Director-General of the Foreign Service, U.S. State Department.

Invited Participant, Robosphere 2004: Self Sustaining Robotic Systems, 9-10 November 2004, NASA-Ames Research Center, Mountain View, California. (A workshop dedicated to the advancement of a Robotic Systems Science for long-term robotic presence and human robotic interaction on planetary surfaces and in space systems.) http://robosphere.arc.nasa.gov

Invited, presented (with Marc Cohen) on human factors relating to safety aboard shuttle and space stations, NASA-Ames Human Factors Conference, Mountain View, California, 20 Oct 2004.

Presenter. California Sociological Association, 16 Oct 2004, Session Chair, "Sociology's Lost Horizons, Regaining Ground." Also presented in the Astrosociology Session ("The Great Divide: Sociology and Aerospace").

Presenter. *Space 2004* Conference and Exhibit, San Diego, California, Sep. 28-30, 2004.

Participant. 58th Annual World Affairs Council of Northern California Conference at Asilomar, 30 April-2 May 2004, Pacific Grove, California.

Participant and Committee Work, Design Engineering Technical Committee, 42nd Aerospace Sciences Meeting, Reno, Nevada, 6-8 Jan 2004.

Presented. "1985 NASA Rockwell Space Station Crew Safety Study: Results From *Mir*," by Marilyn Dudley-Rowley, Marc M. Cohen, and Pablo Flores, for a conference hosted by the Institute for Biomedical Problems, devoted to the 40th anniversary of the Institute of Biomedical Problems, Russia's leading research institution in space biology and medicine: Living Beings and Environment: Adaptation to Extreme Conditions, Session 12: Reserve Capacities of the Human Body and Occupational Risks, Presidium of Science, Moscow, Russia, 4 Nov 2003. Published, March 2004, in *The Journal of Aerospace and Environmental Medicine* (Moscow, Russia).

Presenter. AIAA Space 2003 Conference and Exposition, Long Beach, California, Sep. 23-25, 2003 Presented in the Human Factors Support for Long Duration Missions I Session, in Long Beach, CA, 24 Sep 2003.

Participant, 57th Annual World Affairs Council of Northern California Conference at Asilomar, 2-4 May 2003, Pacific Grove, CA.

Moderator/Facilitator. "What Does It Mean 'Support Our Troops'?" Panel, Teach-In: Teaching and Learning in a Time of War, 29 April 2003, Sonoma State University, Rohnert Park, California.

Invited Presentation and Committee Work, Design Engineering Technical Committee, 41st Aerospace Sciences Meeting, Reno, Nevada, 6-9 Jan 2003.

Invited Briefing, "Crew Size, Composition, and Time: Effects on Behavior and Performance of Team Personnel in Expeditionary Environments," Marilyn Dudley-Rowley, Sheryl Bishop, Stewart Whitney, Patrick Nolan, and Thomas Gangale, 48th U.S. Department of Defense Human Factors Engineering Technical Advisory Group Meeting, Tri-Service Workload Coordinating Sub-TAG session, 6 Nov 2002

Presenter/co-organizer. World Space Congress and AIAA Space Architecture Symposium, Houston, Texas, Oct. 10-11, 2002

Chair, panel entitled: "Space Architecture as a Discipline." First AeroSpace Architecture Symposium, World Space Congress, October 2002, Houston.

Chair, session entitled: "Space Architecture as a Discipline." First AeroSpace Architecture Symposium, World Space Congress, October 2002, Houston.

Co-Organizer, First AeroSpace Architecture Symposium, World Space Congress, October 2002, Houston.

Participant. California Faculty Association, Lecturer Council Planning Meeting, 13-14 Sep 2002, Sacramento.

Presenter. 47th U.S. Department of Defense Human Factors Engineering Technical Advisory Group Meeting, 29 Apr-2 May 2002, San Diego.

Faculty Senator, Faculty Senate Meetings, 2002-2004, Sonoma State University.

Co-Organizer (with other SSU Lecturer Faculty Senators and the California Faculty Association), Sonoma State University, various lecturers' meetings, (17 Oct 2002+), Sonoma State University.

Presenter, Teach-In on the War in Iraq, "A Conspiracy of Idiots." This lecture was the basis for the chapter in the Chelsea House book on "Transnationalization of Jihad."

Invited Presenter. Requested lecture on behavior and performance in extreme environments in the "Mars 2012" course, Planetary Sciences Department, University of California-Berkeley, 3 April 2002.

Invited Presenter. "Afghanistan Primer," a requested presentation for the War and Peace Lecture Series, Sonoma State University, 6 Nov 2001, Rohnert Park, CA. Material to be included in *Northern Exposure.*

Invited Presenter. "Transnationalization Processes of Terror," a requested presentation for the Jewish Town Hall Meeting, Beth Amie, Nov 2001, Sonoma, CA. Material to be included in *Northern Exposure.*

Presenter. 31st International Conference on Environmental Systems (ICES), Orlando, Florida, paper presentation published as a SAE Technical Paper, July 2001 (see publications above), July 2001.

Presenter. "The Globalization of Space", was presented at the Pacific Sociological Association in San Francisco, 30 March 2001. Roundtable.

Invited Presenter. 30 Jan 2001. "Behavior and Performance in Extreme Environments," 3-hour presentation to the Washington, D.C. Chapter of the Mars Society, Old Town Alexandria.

Participated. American Criminology Association meetings, 2000, San Francisco.

Presenter. October 2000. "Annual Mars-on-Earth Tour, Devon Island, Eastern Arctic," presented to the joint NASA-Mars Society Haughton Mars Project Management Team, NASA-Ames, Bldg. 245, Moffett Field, California, 9 Oct.

Participated. September 2000. AeroSpace Architects Technical Subcommittee Meeting, Design Engineering Technical Committee Meeting, American Institute of Aeronautics and Astronautics Conference, Long Beach, California, 19-21 Sep.

Presented. August 2000. "Effects of Organizational Structure on the Behavior and Performance of Polar and Space Work Teams," Patrick Nolan and Marilyn Dudley-Rowley, Washington, D.C., annual meeting of the American Sociological Association.

Presented. "The Effects of Size, Heterogeneity of Crew and Mission Duration on the Deviant Behavior and Performance of Team Personnel in Space and Polar Environments," Patrick Nolan and Marilyn Dudley-Rowley, presented 22 May 2000, Santorini, Greece, the 13th Man in Space Symposium, International Academy of Astronautics and the Greek Aerospace Medical Association. Following, submitted to *Acta Astronautica* as "Factors Affecting Rates of Deviance/Conflict Among Crews in Extreme Environments: A Pilot Study."



In the photograph above, depicted are my major sociology professor, Pat Nolan, with his wife and me on Santorini Island, Greece where we presented one joint paper at the 13th Humans in Space Symposium on my dissertation- and NSF-related work on the behavior and performance of expeditioners in extreme environments. One of our key findings was that, counterintuitively, expeditions containing both genders, different nationalities, a wider span of ages, and a variety of skill sets had less deviance, dysfunction, and conflict (see Figure 2 below). I also presented two other papers over similar findings, including one reporting on recommendations for joint Russian and Western teams in field situations, such as combined peacekeeping efforts.

Presenter/Session Chair. "The Long-Duration Mission: Not Just Duration," by Marilyn Dudley-Rowley, Sheryl Bishop, Kristin Farry, and Thomas Gangale, presented 21 May 2000, Santorini, Greece, the 13th Man in Space Symposium, International Academy of Astronautics and the Greek Aerospace Medical Association. Submitted to *Acta Astronautica*.

Presenter. 12-15 July 1999, Denver, Colorado, at the 29th International Conference on Environmental Systems (ICES) Meetings, NASA-Johnson Space Center's Psychological Services Group Session.

Participant, National Space Society meetings, May 1999, Houston, Texas.

Requested Presenter .May 10-13, 1999. "Team Optimization in Joint Russian and Non-Russian Extreme Environments Expeditions and Missions," Department of Defense Human Factors Engineering Technical Advisory Group, Alexandria, Virginia.

Requested Participant, Steering Committee meetings, Stanford University Campus, Mars Society, March 13-14, 1999.

Requested Participant, NASA Space Human Factors and Engineering Advisory Workshop, NASA Mars Reference Mission, Human Behavior and Performance Group, Houston, Texas, Mid-January 1999. (Thomas Gorry and I provided consultation on social and behavioral issues.)

Guest Honors Lecturer. "Return to Utopia Planitia: Long-duration Spaceflight, Psychosocial Human Factors of Extreme Environments, and Human Evolution," Utopian Societies, Sociology 345, Ron Maris, University of South Carolina, Columbia, November 17, 1998.

Participant, "Pushing the Envelope III: Mountains, From the Earth to the Moon", Space Medicine Meetings sponsored by the U. Texas-Medical Branch, Houston, Texas, 1-3 October 1998.

Session chair/co-chair, various sessions of the Founding Convention of the Mars Society, University of Colorado, Boulder. 13-16 August 1998. Sessions chaired/co-chaired were Human Factors; Philosophical Implications of Mars Exploration.

Participant, Meetings, Aerospace Medical Association, Seattle, May 1998.

Participant, Pushing the Envelope II: Medicine on Mars and in Other Challenging Environments. University of Texas -Medical Branch and the Center for Advanced Space Studies (CASS), University of Houston-Clear Lake, 25-27 Sep 1997.

Participant, Meetings, American Sociological Association, Southern Sociological Association, South Carolina Sociological Society, Alaska Anthropological Association, American Association for the Advancement of Science, 1977-1997.

Presenter. "Deviance Among Expeditioners: Defining the Off-nominal Act in Space and Polar Field Analogs," presented at the 12th Man in Space Symposium, International Academy of Astronautics and NASA, Human Factors Session, Washington, D.C., June 1997.

Presenter. April 1997. "Deviance in Extreme Environments: Defining the Off-nominal Act," Southern Sociological Society Meetings, New Orleans.

Presenter. 5 April 1995. Life Sciences and Space Medicine Conference, sponsored by NASA, America Institute of Aeronautics and Astronautics, National Institutes of Health, and the United States Air Force, Human Factors Engineering and Habitability II Session, Houston, Texas, April 3-5, 1995.
Disaster Conference, South Carolina Sociological Society, Winthrop College, SC. Featured Speaker: Russell Dynes. Spring 1993.

Presenter. 22 Feb 1990. "Directions in Elementary Theory," presented at the Alpha Kappa Delta (International Sociological Honor Society) Sociological Research Symposium, Micro Theory Session, Greenville, North Carolina.

Participant, a Siberian-Alaska medical conference meeting to plan and detail joint projects to be undertaken by Alaskan and Siberian life sciences and medical institutions, Spring 1988.

Participant. NASA Mars Conference, Washington, D.C., Anniversary meetings of the Viking Mars Missions. National Academy of Sciences, July 1986.

Presenter. September 1985. "Arctic Ocean Shoals: the Use of Satellite Imagery in Unresolved Problems of Prehistory and History," the American Association for the Advancement of Science, Arctic Regions Conference, Remote Sensing Symposium, University of Alaska, Fairbanks, Alaska,

Presenter. August 1982. The Third Theriological Symposium, Reindeer-Caribou Conference, Helsinki and Saariselka, Finland.

Participant, U.S. Frontiers Conference, University of Alaska, Fairbanks, Spring 1982.

Appointed Presenter. Spring 1979. "The Alaskan Independence Movement From 1790 to Present," Alaska State Legislature-Appointed Presenter, Future Frontiers of Alaska Conference, Epsilon Committee, Anchorage, Alaska, sponsored by the Brookings Institution, Washington, D.C. Featured fellow speaker and table-mate: R. Buckminster Fuller.

Participant, Midnight Sun Writers' Conference, University of Alaska, Anchorage, Spring 1977.

Participant, Western Governors' Conference, Anchorage and Prudhoe Bay, Alaska, standing in for Governor Thomas Judge of Montana at the latter site; joined U.S. Interior Secretary Cecil Andrus' entourage for a tour of Resurrection Bay bird rookeries. Spring 1977.

Participant, Annual Alaska Advertising Association Conference, Anchorage, Alaska. December 1976.

Reflections:

I am, and continue to be cited, in an increasing body of literature that I can track over the Internet. One that I recently found is as follows:

Barrett, Robert S. 2009. "Borrowing From Security Strategy: Can Red Teams Help Astronauts Prepare for Crew Conflict in Space?" ***Canadian Military Journal,*** **Vol. 9, No. 4.**

The author cited me for my research on extreme environmental teams working and living in space. Little did he know as he was preparing his article that I had had a training segment over red teaming with the U.S. Army's Human Terrain System and served shortly after in Afghanistan.

HONORS, GRANTS, BOARD MEMBERSHIPS, AND CIVIC PARTICIPATION

- Boardmember, People's Lobby Educational Foundation.
- Boardmember, Astrosociology Research Institute.

- $1000 grant, School of Social Sciences, Sonoma State University, to study the "transnationalization of terror" using a human factors approach; 2003.

- "Deviance Among Team Personnel in Space and Analog Polar Field Environments: the Effects of Size and Heterogeneity of Crew and Mission Duration of Behavior and Performance," $60,000 by the National Science Foundation ($50,000 + $10,000 undergraduate research supplement, SBR-9729957 and SES-9944042, respectively.). (An expansion of my Ph.D topic that started in advance of my finally earning my Ph.D.) 1998-2000. Final report tendered in March 2005.

- Society of Women Geographers, nominated by pioneering Antarctic explorer, Edith "Jackie" Ronne for membership for contributions to geographical knowledge, 1997. (Discovery and mapping of shoals in Arctic Ocean shelf seas in oil-rich regions on which semi-submersible oil rigs could be mounted and protected from floebergs.)

- Palmetto Society, United Way, 1995-1996.

- Credentials requested by South Carolina Governor Carroll Campbell for the Executive Policy and Programs talent bank, 1993.

- Provided invited expert testimony to a South Carolina legislative committee considering the feasibility of no-fault auto insurance in South Carolina, providing data from Alaska, a no-fault state, 1992.

- Titular Offers, The Order of Charles V, the Knights Hospitalers of Spain; the Spanish Imperial College; and the Eastern Orthodox Church for my early Afghanistan work of the 1980s, 1990.

- Otto Geist Fund grant for archaeological remote sensing research, $800, 1986.

- Nominated to the Alaska Statehood Commission by Alaska state legislators (as described above).

- Nominated by Alaska legislators Don Bennett (Fairbanks) and Terry Gardiner (Ketchikan) as a Commissioner on the Alaska Statehood Commission, a group empowered by the voters of Alaska to examine Alaska's continued role as a state of the United States.

- Selected for the Alaska State European Trade Office, Copenhagen, Denmark by Democratic Governor-Elect Bill Sheffield, mid-1980s. (My position evaporated when the Alaska State Legislature de-funded the office before the Governor-Elect took office.)

- Authored, nine requested legislative commentaries for the Alaska Mining Association and the Alaska Placer Mining Association, 1981-1983.

- Nominated to the Board by the Executive Director, Anchorage Mental Health Association, 1982.

- Cultural Survival, Inc., Harvard University, operating expenses grant for the Kirghiz work, $300, 1981.

- Founded and funded, The Rowley Prize, an annual research grant of $1000 to Kurdish and other Middle Eastern/Southwest Asian female students attending Washington State University and meeting the "UN University" criteria of doing work in world economics, environmental sustainability, and nutrition, 1980. (My family and I discontinued the prize when we discovered the money was being shell-gamed to American women students who did not fit the ethnic and cultural criteria we had laid down.)

- *World's Who's Who of Women*, 1980.

- Alaska State Legislature-Appointed Presenter (appointed by Senator Clem Tillion [Halibut Cove]), The Brookings Institution-sponsored "Future Frontiers of Alaska Conference", Epsilon Committee, Anchorage, Alaska. In committee, drafted and tailored state legislation about public lands, fisheries and wildlife, and public works for action by Alaska State Legislature; and presented a paper on efforts for Alaskan independence, 1979.

- U.S. Department of Energy Scholarship for Secondary Teachers in Alaska, 1979.
- Bill Waughaman, Sr. grant for Alaska public lands research, $3000, 1978.
- Air Force Officers Qualification Test, **Maximum Score**, 1977.
- National Math Exam, scored top ten percentile in South Carolina, 1971.

ACTIVE IN THE FOLLOWING PROFESSIONAL SOCIETIES:

- Local, regional, and national/international sociological societies
- American Institute of Aeronautics and Astronautics (AIAA)
- Public Diplomacy Alumni Association (PDAA)
- Foreign Service Association of Northern California (FSANC)
- United States Department of Defense Human Factors Engineering Technical Advisory Group (U.S. DoD HFE TAG), by invitation only
- Association of Former Intelligence Officers (AFIO)

PAST PARTICIPATION IN PROFESSIONAL AND OTHER ORGANIZATIONS

- Commonwealth Club
- World Affairs Council of Northern California
- Mensa
- AeroSpace Architects Technical Subcommittee of the Design Engineering Technical Committee, American Institute of Aeronautics and Astronautics, Co-founder of the first AeroSpace Architecture Symposium held at the World Space Congress, Houston, Texas, 10-12 Oct 2002
- Liaison, from the Design Engineering Technical Committee to the Life Sciences and Systems Technical Committee of the American Institute of Aeronautics and Astronautics
- Aerospace Medical Association (affiliated organizations include Army Flight Surgeons, Space Medicine Branch, and Human Factors)
- Society of Human Performance in Extreme Environments, founding member and former editorial board/reviewer position with the journal.
- Human Factors and Ergonomics Society (including the Aerospace and Macroergonomics Task Groups)
- Women's Quarterly Network of Counselors, State of South Carolina, Department of Alcohol and Other Drug Abuse Services
- South Carolina Alcohol and Drug Abuse Commission
- NAADAC
- Mars Society (as described above)
- Space Frontiers Foundation
- Moon Society
- Alaska Anthropological Association
- National Federation of Business and Professional Women. Chairman, Finance, Publicity, and Legislative Committees, Organizer, Political Action Committees, National Federation of Business and Professional Women, Fairbanks Chapter, 1978-1989.
- National Press Women
- The American Association for the Advancement of Science
- The American Society of Photogrammetry and Remote Sensing
- The Society of American Military Engineers
- American Civil Liberties Union
- The Society of Scientific Exploration
- Society of Physics Students and the American Institute of Physics
- University of Alaska Quaternary Society
- Alaska Visitors Association
- Society of Industrial and Applied Mathematics (SIAM)

ACTIVE IN CURRENT FACULTY SERVICE COMMITTEES AND ORGANIZATIONS

'Atenisi University Faculty Senate
'Atenisi Institute Member

PAST FACULTY SERVICE COMMITTEES AND ORGANIZATIONS

- Faculty Senator, Sonoma State University
- Member and Donor, *Ad Hoc* Committee for the Sonoma State University Community Solidarity Fund
- Member, *Ad Hoc* Committee for the Sonoma State University April 2003 Teach-In "Teaching and Learning in a Time of War."
- Member, California Faculty Association (CFA)
- Member, CFA Lecturer Planning Council
- Member, Sonoma State University's Long-Range Planning Committee for the School of Social Sciences
- Member, Educational Mentoring Team Steering Committee,
- Faculty Sponsor, Cannabis Awareness Society for Education (C.A.S.E.), a Sonoma State University student on-campus organization
- Faculty Sponsor, NORML, Sonoma State University State University
- Interviewer, E.B. Kennedy Scholarship, Erskine College, Dec 1997.

Other Professional Associations

- The International Science and Technology Center, ISTC, Moscow, Russia, Partner-Collaborator
- Member of editorial team, under the supervision of Dr. Ken Shin, *The Korean Journal of Population and Development.* 1991-1995.

Technical Licenses Held

Federal Communications Commission Third-Class Broadcasting License (with Element 9).
Class A, CDL (I have held the Hazardous Materials certification)

REFERENCES – UPON REQUEST

A Specialized ORSA Appendix follows

Appendix: Operations Research and Systems/Statistical Analysis/Pattern Analysis Qualifications

I am equivalent to an interdisciplinary operations research and systems/statistical analysis scientist. I have proven my scientific eminence in this practical disciplinary area on many ORSA and pattern analysis-related projects. The way I was educated while grappling with many different categories of real-world problems across a number of professional domains (as broken out in my CV and/or resume) gives me an innovative edge that new graduates in ORSA programs will not possess. In other words, I have a great deal of *substantive* experience in addition to a familiarity with analytical methods used in ORSA/pattern analysis concerns.

ORSA bears a close relationship with engineering specialties. In some quarters, such as the American Institute of Aeronautics and Astronautics and within the U.S. Department of Defense Human Factors Engineering Technical Advisory Group, I am regarded as a Human Factors Engineer from the reputation of my professional work. But, I was not educated at colleges and universities where I could either major in Operations Research or Human Factors Engineering. Where I was educated had less to do with choice as it did with what jobs or professional work I was doing in the locale of the schoolhouse. But, there is a happy coincidence with the way I was educated. I would like to make the point that the way I was educated is very appropriate to counterterror and counterinsurgency problems. Though it is true that I do have a good deal of hard science and math background, a lot of that background had to do with how people were using their physical environments and how they transacted a host of interactions. I am a social scientist with a hard science and a

considerable mathematics background. Because of that, I have been an ORSA/Pattern Analysis pioneer in some of the projects I have engaged.

While I may not be intimately familiar with your specific company's work OCONUS, I am familiar with various pattern analysis problems and methods that are at the heart of ORSA. JIEDDO,1 COIC,2 and HTA3 jobs. I was a pioneer in bringing social structural methods to pattern analysis. I am talking about my humble beginnings with the types of analyses I made for federal and state criminal justice agencies in the Pipeline construction economy of Alaska that lured IRA and PLO operatives, Balkan nationalists, and Latin American Contras to the 49th state, to the more sophisticated methods that I created for the Kuwait Victimization Assessment Data Base (KVAD) of the Gulf War Era (described below). Since then, I have been able to design a host of methodologies that bear on counterterror/counterinsurgency through my company, OPS-Alaska. I describe a couple of those projects at the end of this document. They are:

- **A KLT Application For Needle-in-a Haystack Analysis of SIGINT Archives for Proximal Real-Time Response**
- **Development of a comprehensive human factors methodology for assessing terror networks of personnel, materiel and technologies, and locations and how they spread**

I have continued my pattern analysis career in the Human Terrain Systems, U.S. Army

I, *dba* OPS-Alaska, was recently under contract with a BAE subcontractor to the Army's Human Terrain System. I was a GS-15 equivalent social scientist whose duties involve finding patterns in data to provide operationally relevant information to military commanders. That includes embedding myself with military troops and engaging the mission environment and indigenous people in order to obtain the data. Some of the technological applications available to me are:

The MAP-HT toolkit, resources found over NIPR and SIPR nets: Analyst Notebook, Link Analysis, UCINET, ANTHROPAC, etc.

Before deploying to Afghanistan, I trained for the Army's Human Terrain System program on Fort Leavenworth, Kansas and at other locations. Our Human Terrain System MAP-HT computer applications that I trained over contain many applications that are desired for ORSA, JIEDDO, COIC, and HTA positions. During the mission that I went on to Ghazni Province in Afghanistan, I could see the utility of these applications and those who could use them in the exploration of the following issues:

- Emergence of insurgency in Malistan
- The control and movement of chromite
- Links between opium and chromite trades
- The Taliban and insurgent control of schools and clinics
- Wally Karzai's links
- Infiltration into Ghazni Province by Taliban commanders and sub-commanders
- Iranian influence and Hazari self-defenders
- Ghazni as a hub of a drug war between northern and southern regions
- Tajik smuggling networks and linkages to Pakistan
- How the United States inadvertently funds insurgencies by being the biggest cash cow around
- Links among the Tajiks and the Hazari to the HiG
- Relationships between the Tajiks and the Taliban
- Key leaders of local shadow governments and their networks and nodes of influence

I have a skill set that exceeds the current requirements of the Human Terrain System. I am an experienced methodologist and am capable of creating other methods, instruments, and applications useful for counterterror/COIN endeavors. My quantitative and multidisciplinary background is an asset for tasks that require an ability to overlap multiple substantive data sets to recognize patterns, discern linkages among persons, organizations, and other actors, and to derive

1 Joint Improvised Explosive Device Defeat Organization
2 Counter-IED Operations Integration Center
3 Human Terrain Analysis

comprehensive views of situations. I have much to lend to the usage and the improvement of computer intelligence systems. I enjoy working on teams and have a long background managing projects among a diversity of disciplinary others. I am an experienced at putting together and delivering briefings to federal executives and military personnel. I have knowledge of Improvised Explosive Device (IED) types, characteristics, Tactics, Techniques, and Procedures (TTPs) and I have Counter-Improvised Explosive Device (C-IED) experience.

Relevant Education

I entered college with recognition from the Mathematical Association of America for my high scores on the National Mathematics Exam. I began my college studies as a mathematics major and physics minor. However, pushing for early graduation, I wound up not taking my major in those fields. I entered the U.S. Army on active duty soon afterwards.

Following my active military duty, however, I enrolled in graduate programs while at the same time working in a variety of professional fields and on projects that made use of the topics and techniques that I was learning from the coursework. I was in and out of graduate programs for over 20 years. As a result, I completed two weighty Master's programs and a doctorate. Colleagues tell me that I have the equivalent of three doctorates. In the late 1970s, I began to establish a natural and social scientific research firm and policy-making collaborative, OPS-Alaska, that has evolved from businesses and an NGO that I co-founded while in Alaska. I have engaged in fairly sophisticated research since the late 1970s and research-managed the research of others since that time.

My second Master's degree was in anthropology. I had some previous experience with linguistic anthropology at Washington State University. When I signed onto my second Master's program, I intended to study mostly social and cultural anthropological topics. With Dr. Louis Dupree, I had already motivated the rescue and relocation of the Kara Kirghiz Afghans from the Wakhan not long before. But, my major professors in the anthropology department at the University of Alaska-Fairbanks (UAF) were more interested in developing me as a geoarchaeologist – though they had no clear idea what that curriculum should entail -- and I was made to take an almost double major course load in geology and geological analytical techniques from the UAF's Geosciences Department. By the time I graduated, I was so far away from a traditional anthropology curriculum, that most colleagues viewed me as a geoscientist. I was already getting known for my geological satellite and aerial remote sensing work and making presentations at scientific conferences. I was stuck with a non-standard degree and knew I would never work in anthropology with it, and my diploma did not read "geology" or "planetary science," either, so I could not use it to work in the geosciences. Toward the end of my second Master's program, I was refreshing myself in mathematics and physics coursework with the intent of entering a doctoral program in geophysics or a similar field. **This is among the reasons why I have so much mathematics and quantitative analytical background. But, there are other reasons as well.**

Increasingly more, my criminal justice work of the years before (as described in my CV) had become a detriment for my first husband and me and the necessity to move from Alaska gave me an opportunity to make some changes. I moved back to Columbia, South Carolina where I had been born. The University of South Carolina (The USC) had no doctoral program in anthropology, but they had just convened one in anthropology's sister science, sociology. Thinking that my anthropology degree was standard, the choosing professors with the new sociology doctoral program at The University of South Carolina (The USC) let me into that program. The sociology department at The USC was on the cutting edge of **social network analysis (SNA) and other social structural analytical applications.** I immediately fit in for several reasons:

- I had used the basic ideas of SNA and related techniques in my professional criminal justice research work from the late 1970s through the 1980s.
- Not long before I had studied several mathematical topics with mathematician Robert Piacenza and had developed an intellectual discourse with mathematician Edwin Hewitt who gave some lectures at the UAF. I had a good grounding in graph and network theory by the time I left the UAF.
- Dr. David Willer, a network exchange theorist, had been hired about eight months' before my arrival in the sociology department at The USC, and needed someone mathematically astute – especially in graph and network theory -- to help run his and Dr. John Skvoretz's laboratory.

The postgraduate, Master's, and Doctoral Level quantitative and other analytical coursework that I earned from all my university programs, and what I learned on-the-job, match much of the coursework that is found in the

Operations Research curricula at the University of Texas-Austin, the University of North Carolina at Chapel Hill, and North Carolina State University. From my transcripts from five colleges and universities and my "hands on" professional projects, I made a comparison among my substantive coursework taken and what I learned from On-the-Job Training and three Operations Research graduate programs.

The comparison is as follows.

From My Postgrad and Grad Programs and/or Professional Projects	**University of Texas-Austin** **From their Operations Research and Industrial Engineering doctoral program**	**University of North Carolina at Chapel Hill** **From their Operations Research doctoral program (STOR) and North Carolina State University from their Operations Research graduate programs (OR)**
Postgraduate mathematical statistics and probability courses from the UAF: Distribution of random variables and functions of random variables, interval estimation, point estimation, sufficient statistics, order statistics, and test of hypotheses including various criteria for tests. Probability spaces, conditional probability, random variables, continuous and discrete distributions, expectation, moments, moment generating functions, and characteristic functions. **SOCY 730 -- Statistical Analysis in Sociology. From The USC** Introduction to statistical analysis in sociology, including bivariate and multiple regression, correlation and analysis of variance. **Special topics studied with mathematician Robert Piacenza at UAF** **Applications of mathematics in modern society.** Topics include voting systems, probability and statistics and applications of graph theory in management science; uses of probability and statistics in industry, government and science; and applications of geometry to engineering and astronomy.	**390R. Statistics and Probability.** Concepts of probability and mathematical statistics; application of these analytical methods to planning and evaluation of research and industrial experimentation. **Topic 1: Applied Probability.** Basic probability theory, combinatorial analysis of random phenomena, conditional probability and independence, parametric families of distributions, expectation, distribution of functions of random variables, limit theorems. **Topic 2: Mathematical Statistics.** Sampling distributions, properties of estimators, point and interval estimation, hypothesis testing, introduction to multivariate and nonparametric statistics. **Topic 3: Time-Series Analysis.** Classical techniques in time domain forecasting Box-Jenkins univariate, transfer function, and multivariate time-series analysis. **Topic 4: Reliability Theory and Modeling.** Theory of probabilistic and statistical models of aging elements, reliability, replacement, and repair maintenance, and their integration in surveillance, quality control, and manufacturing problems. **Topic 5: Applied Stochastic Processes.** Poisson process, renewal theory, discrete and continuous-time Markov chains, queueing and reliability applications.	**STOR 555** Mathematical Statistics **STOR 664** Applied Statistics **OR 501 - Introduction to Operations Research** **OR 502 - Introduction to Systems Theory** **STOR 641** Stochastic Models in Operations Research I **STOR 642** Stochastic Models in Operations Research II **STOR 743** Stochastic Models in Operations Research III

Topics in Discrete Mathematics

Logic, counting, sets and functions, recurrence relations, graphs and trees. Additional topics chosen from probability theory.

Topics in Abstract and Modern Algebra

Theory of groups, rings and fields.

Introduction to category theory, module theory, homological algebra and Galois Theory.

Anthropology and geosciences courses studied at UAF:

ANTH F624 Analytical Techniques, (formerly ANTH 421)

Classification, sampling, collection and analysis of data: parametric and nonparametric significance tests and measures of association, analysis of frequency data, estimating resemblance using multiple variables, computer simulations and analysis.

I gained much hands-on experience with statistics and data analysis in geology from several geology courses that follow:

These techniques comprised computer-supported geologic applications of elementary statistics, Markov chains, time-series analysis, trend-surface analysis, factor analysis, cluster analysis, discriminant analysis, and multiple regression.

GEOS 609B. Advanced Geomorphology – Landscape and Fluvial Processes

Topics included:

Flow and Sediment Transport in Rivers:

Fluid Flow and Boundary Layers Incipient Motion

Topic 6: Regression and Analysis of Variance. Fitting equations to data; joint confidence regions; partial correlation analysis; general linear hypotheses; dummy variables; diagnostics and remedial measures; design of experiments; fixed, random, and mixed models; factorial and nested designs.

Topic 7: Statistical Techniques in Image Processing. Statistical techniques for transformation, enhancement, restoration, segmentation, and classification of digital image data.

Topic 8: Queueing Theory. Introduction to the classical and modern theories of queueing systems. Simple Markovian queues; the M/G/1 and G/G/1 queues; Jackson and Kelly networks; multiclass networks; stability, scheduling, and routing in queueing networks; fluid and diffusion approximations.

Topic 9: Systems Simulation. Random number generation, simulation experiments, statistical verification, clock routines, simulation language applications, industrial problems.

Topic 10: Statistical Design of Experiments. Introduction to statistical design of experiments based on both classical analysis of variance and modern heuristic techniques.

Topic 11: Advanced Stochastic Processes. Markov renewal processes, generalized semi-Markov processes, marked point processes, Martingale theory, Brownian motion, Levy processes, and stochastic calculus.

Topic 12: Multivariate Statistical Analysis. Theory and applications of multivariate statistics, including multivariate parametric distributions, estimation, hypothesis testing, principal components analysis, canonical correlation, multivariate regression, and classification.

Topic 14: Special Topics in

OR 760 - Applied Stochastic Models in Industrial Engineering

OR 761 - Queues and Stochastic Service Systems

OR 772 - Stochastic Simulation Design and Analysis

OR 773 - Stochastic Modeling

Turbulent Flow Sediment Transport Mechanics Bedforms and Flow Resistance River Channel Form and Process: Hydraulic Geometry and Regime Theory Bedforms and Channel Geometry Alluvial Channel Patterns Flow in Meander Channels Confluences and Networks Confluences and Networks Longitudinal Profiles and Downstream Fining Sediment Yield Catchment Processes Adjustments of the Fluvial System: Mechanics of Bank Erosion Adjustments of the Fluvial System River Channel Change Fluvial Geomorphology and Vegetation River Restoration Conceptual and Numerical Models Fluvial Models **GEOS 414. Issues of Glaciomarine Environments** **GEOS 694B. Historic Arctic Ocean Basin/Ice Cover** The above two courses comprised various topics including: 1. Survey of remote sensing methods for mapping and monitoring the various components of the cryosphere. Focus is on the application of optical and microwave satellite data for the study of snow, lake ice and frozen ground. Demonstration and use of field techniques and image analysis field techniques and image analysis. 2. Glaciers and their geological processes. Emphasizes recognition and understanding of glacial landforms, sediments and stratigraphic relations, and implications for paleoclimatology and paleogeography. Includes non-glacial	**Probability, Stochastic Processes, and Statistics.** Study of specialized topics, such as advanced stochastic processes, Bayesian statistics, simulation, and stochastic optimization, intended to introduce and stimulate further research.	

techniques and methods for interpreting Quaternary sediments. 3. A survey of the physics of ice. Topics included the crystal structure and properties of ice, high pressure phases, hydrogen bonding, mechanical, thermal, electrical and acoustic properties, nucleation and growth, and optical and surface properties (adhesion, friction). 4, A study of sea ice in the natural environment including sea ice properties and processes on the micro-scale and the macro-scale, freezing processes and sea ice growth, ice decay and ice dynamics. 5. Study of the occurrence, thickness, environmental problems, and mass and energy transport of permafrost, including soil and ice interaction, freezing and thawing processes, and mechanical and electrical properties and processes. 6. The mechanisms responsible for the existence, motion and variations of present-day glaciers and ice sheets, the paleoclimate information they contain and their role in engineering hydrology. **I additionally took a number of satellite and aerial remote sensing courses:** **GEOS 408. Map and Air Photo Interpretation** **GEOS 422. Geoscientific Applications of Remote Sensing** **ALR 641. Natural Resources Applications of Remote Sensing** Topics/concerns covered by these courses included: ▪ Use of topographic maps, geologic maps, aerial photographs and satellite imagery in interpretation of geological structures,		

landscapes, landforms and geomorphic processes. Techniques included are map compilation, photo mapping, statistical treatment of map data and composite mapping for planning.

- A multidisciplinary and theoretical understanding and hands-on experience with acquiring field data; processing of remote sensing data acquired from airplanes and satellites; concept of data integration in GIS mode; database management; cartographic visualization of final product.
- Remote sensing and its applications to geologic, environmental and physical sciences. Includes nomenclature, a review of sensing systems and forms in which data is available. Emphasis on use of LANDSAT, radar imagery, thermal imagery and color infrared photograph.
- In-depth coverage of the principles, physics, sensor technology, processing and applications of remote sensing in the visible and infrared region, including but not limited to electromagnetic spectrum, radiation laws, spectral signatures, atmospheric interactions, temperature emissivity estimation, analysis and feature extraction from data sets. The laboratory part of the course will provide hands-on experience on special processing techniques, and the possibility of using these techniques for a student-defined term project in areas of geology, volcanology, glaciology, hydrology, environmental sciences, etc.

All of this geoscientific work resulted

381. Deterministic Methods for Operations Research. Theory and algorithms for deterministic operations research methods. Algorithms for solving linear, integer, and nonlinear optimization models.

382. Stochastic Methods for Operations Research. Theory and algorithms for stochastic operations research methods. Algorithms related to stochastic processes: Markov chain analysis; queueing theory; stochastic inventory theory and decision analysis.

391Q. Optimization. Mathematical optimization techniques with

OR 726 - Theory of Activity Networks

OR 766 - Network Flows

OR 565 - Graph Theory

OR 862 - Scheduling and Routing

in several geographic, geological, and archaeological discoveries, as described in my CV. I performed a preliminary network analysis over the 100+ Alaskan coastal archaeological sites I discovered through remotely sensed imagery and made cultural inferences for many of them. **In July 2008, I had a chance to reprise my role as a geoscientist when the US Army sent me to study the geography and geology of Afghanistan in July 2008 with Dr. Jack Shroder who identified Tora Bora as Osama bin Laden's hideout.** **SOCY 739 -- Selected Topics in the Quantitative Analysis of Sociological Data.** Topics in graph theory and network theory. In-depth discussion of theory underlying deterministic activity networks and probabilistic activity networks. SOCY 759 -- Selected Sociological Topics in Social Structures. **It was either in SOCY 739 or 759 that I ran a three-day computer simulation with Dr. John Skvoretz over transactions in even- and odd-numbered networks that were differently configured networks in all the ways they could be, that numbered in the many thousands of nodes, to determine characteristics of those networks, such as which produced more equal transaction opportunities among its nodes and which did not.** **Several of my sociology doctoral courses were concerned with the issues of optimization and constructing algorithms to describe, explain, and predict human and societal behaviors:** SOCY 790A Special Topics	applications to engineering and industrial problems. May be repeated for credit when the topics vary. Prerequisite: Graduate standing and a course in operations research methods. **Topic 1: Nonlinear Programming.** Theory and solution techniques for nonlinear, continuous optimization problems. Topological properties of functions, general convexity, optimality conditions, line search methods, unconstrained techniques, and algorithms for constrained formulations. Lagrangian duality theory and bundle methods for nondifferentiable optimization. **Topic 2: Dynamic Programming.** Systems that require sequential decisions. Problem modeling and solution algorithms for deterministic and stochastic systems. **Topic 3: Network Flow Programming.** Optimization problems related to network flows, shortest path, maximum flow, minimum cost flow, generalized networks, nonlinear costs. Modeling, theory, and computational methods. **Topic 4: Integer Programming.** Models, theory, and computational methods for problems with discrete decision alternatives. Greedy algorithms, branch and bound, cutting plane methods, Lagrangian relaxation, and heuristics. **Topic 5: Linear Programming.** Models, algorithms, and theory of linear programming. Linear programming geometry, primal, dual and revised simplex algorithms, duality theory, optimality conditions, sensitivity analyses, interior point methods, and computer implementations. **Topic 6: Algorithms for Mixed Integer Programming.** Methods and software for solving large-scale mixed integer programming problems: intelligent heuristics, decomposition, lower bounding schemes, limited	**OR 505 - Linear Programming** **OR 506 - Algorithmic Methods in Nonlinear Programming** **OR 705 - Large-Scale Linear Programming Systems** **OR 706 - Nonlinear Programming** **OR 708 - Integer Programming** **OR 790 - Advanced Special Topics System Optimization** **OR 527 - Optimization of Engineering Processes** **OR 719 - Vector Space Methods in System Optimization**

SOCY 790B Special Topics

SOCY 791 Special Topics

SOCY 891 Topic/Reading and Research in Sociology

Because of the requirements of these studies, while with The USC sociology department, I developed regular intellectual discourse with members of the Mathematics and Statistics Departments. Dr. Holmes Finch of the Statistics Department was a member of my doctoral dissertation committee. Topics that I continued to study through these relationships were:

Linear algebra including eigenvalues, eigenvectors and inner products in finite dimensional spaces. Infinite series. Hilbert spaces and generalized functions. Complex analysis, including Laurent series and contour methods. Applications to problems arising in physics. Selected additional topics, which may include operator and spectral theory, groups, tensor fields, hypercomplex numbers.

Optimization: Linear and nonlinear programming, simplex method, duality and dual simplex method, post-optimal analysis, constrained and unconstrained nonlinear programming, Kuhn-Tucker conditions. Applications.

Applied Combinatorics and Graph Theory: Combinatorial and graphical techniques for complexity analysis including generating functions, recurrence relations, theory of counting, planar directed and undirected graphs, and applications.

Taught With David Willer:

SOCY 522 -- Power and Authority Structures in Groups. Analysis of personal, social and organizational networks, their structural patterns, practical consequences, and principles

enumeration, and simple methods for quickly finding good feasible solutions. Numerous examples taken from industry.

Topic 8: Combinatorial Optimization. Optimization of combinatorial structures; computational complexity; stable marriages, shortest paths, maximum flows, minimum-cost flows, matching problems; approximation algorithms for NP-hard problems.

Topic 9: Large-Scale Systems Optimization. Mathematical programs with special structure, Dantzig-Wolfe decomposition, partitioning and relaxation procedures, duality and decomposition, compact inverse methods, applications in engineering and management.

Topic 10: Stochastic Optimization. Optimization of mathematical programming models under uncertainty; model formulations; exact, bounding-and-approximation, and Monte Carlo sampling–based solution techniques that exploit special structures; applications; use of algebraic modeling language.

Topic 11: Advanced Mathematical Programming. Advanced topics in modeling and algorithms for linear, integer, nonlinear, and network programming. Model formulation considerations, decomposition algorithms, interior point and active set methods, duality, modern optimization software. Additional prerequisite: Operations Research and Industrial Engineering 391Q (Topic 5).

Topic 12: Metaheuristics. Reactive and adaptive tabu search methods, simulated annealing, genetic algorithms, and greedy randomized adaptive search methods. Emphasis on theoretical context of methods and on similarities and distinguishing characteristics.

of formation and change.

Hands-on Work running the Willer/Skvoretz Lab

See a description of my **innovations** to Willer's graph theoretic-based power index below.

Undergraduate Linear Algebra (from Winthrop University)

Linear equations, finite dimensional vector spaces, matrices, determinants, linear transformations and characteristic values. Inner product spaces.

SOCY 739M – Log-Linear Models

Analyses based on log-linear models do not appear to be taught in The USC sociology department any longer. But, the department used to be a center of instruction for this type of analysis. I was required to have a course in it for my sociology doctorate. My class project analyzed data from satellite imagery of Hurricane Hugo's path, meteorological data, and data from insurance archives to counter the common misperception that the most damage wrought by Hugo in South Carolina was in the coastal counties. That was not true. Most of Hugo's damage was done to the interior counties of South Carolina.

What is log-linear analysis? Log-linear, logit, and probit models are special cases of general linear models (GLM, which includes regression and ANOVA models) to better treat the case of dichotomous and categorical variables. *Log-linear analysis* deals with association of categorical or grouped data, looking at all levels of possible main and interaction effects, comparing this saturated model with reduced models, with the primary purpose being to find the most parsimonious model which can account for cell frequencies in a table. That is, log-linear analysis is a non-

dependent procedure for accounting for the distribution of cases in a crosstabulation of categorical variables. Log-linear analysis is a type of *multi-way frequency analysis* (MFA) and sometimes log-linear analysis is labeled MFA.4

Among the courses I taught while on faculty contracts with the sociology department at The USC:

SOCY 523 -- Social Processes of Deviance Control. A systematic analysis of the interrelation among the creation, involvement, recognition, and control of deviance.

I demonstrated the content of the following course during my Special Comprehensive exam when I presented a number of professional papers I had published:

SOCY 721 -- Topics in Scaling and Measurement Methods. Selected topics in scaling and measurement of social science data emphasizing exploratory and descriptive techniques such as correspondence analysis, proximity scaling and contingency table representations.

Among the papers I offered for my Special Comp (one of three comprehensive exams)5 was:

"A Social States Index for Multi-national Crews Co-Contained in the ISS Simulator, Moscow, Russia," Marilyn Dudley-Rowley, Vadim Gushin, and Tom Gorry, presented during 12-15 July 1999, Denver, Colorado, at the 29th International Conference on Environmental Systems (ICES) Meetings, NASA-Johnson Space Center's Psychological Services Group Session. Published as a SAE Technical Paper (1999-01-2101) in the SAE Technical Series and on CD,

4 http://faculty.chass.ncsu.edu/garson/PA765/logit.htm

5 I passed at a high level a total of three comprehensive exams in The USC's sociology doctoral program. The main one was in social structures, to include social network analysis (SNA), the second subdisciplinary one was in social psychology, and the third one was the special comp where I could offer recent relevant publications in lieu of standing an exam.

Global Mobility Database, ISSN 0148-7191, 1999.

It was in this publication that I demonstrated the construction of the Altman Scale, which I discuss below.

Several years before I had to demonstrate my facility with scaling and measurement of data, I had completed **ED 332 (Tests and Measurements)** at the University of Alaska-Fairbanks.

Among the topics that I had to demonstrate competence in during my main comprehensive exam in structured and networked data for my doctorate, can be found in these course descriptions from The USC's sociology department:

SOCY 751 -- Topics in the Analysis of Social Networks. Selected topics in the theory, measurement, and analysis of social networks.

SOCY 761 -- Network Exchange Theory. Theory growth and competition in network exchange; how theory is best constructed, how it is tested, and how it is extended.

By the early 2000s, I was supervising and otherwise assisting on other Master's and doctoral thesis/dissertation projects across several different disciplines as described in my CV. My work in this regard came about either through academic or aerospace professional linkages. Among them was assisting in the construction of a fundable doctoral dissertation project on aerospace industry production in Sweden and its socioeconomic and environmental impacts on that nation: **The Dynamics of Management and Production in the Aerospace Sector: The Socioeconomic Impact on Sweden -- New Strategies for Research and Development.**

To help in the construction of the doctoral student's project, I studied

390Q. Industrial Engineering. Industrial engineering techniques for quantitative solution of contemporary systems and management problems.

Topic 1: Project Management. Methods for organizing, coordinating, and controlling resources to minimize risk and conflict and to maintain budgets and schedules. Topics include evaluation of competing alternatives, organization of a project, scheduling of tasks and resources, and the role of management over time.

Topic 2: Production and Inventory Control. Issues in inventory control with known and unknown demand, materials requirement planning, just-in-time, pull control systems, operations scheduling, dispatching and aggregate planning, and the basic dynamics of production and inventory control.

Topic 3: Facility Layout and Location. Layout of operations within a facility, design of the material flow, choice of flexible manufacturing systems and/or cellular manufacturing, location of facilities within a geographic region, and distribution using mathematical models and optimization.

Topic 4: Modeling and Analysis of Manufacturing Systems. Applications of analysis to manufacturing processes, using mathematical models, optimization, and stochastic analysis. Economic evaluation, identification of bottlenecks, estimation of resources requirements, and system design.

Topic 5: Scheduling Theory and

OR 531 - Dynamic Systems and Multivariable Control I

OR 731 - Dynamic Systems and Multivariable Control II

OR 709 - Dynamic Programming

OR 710 - Advanced Dynamic Programming

OR 722 - Decision Analytic Modeling

STOR 612 Models in Operations Research

STOR 614 Linear Programming

John de S. Coutinho's 1977 book *Advanced Systems Development Management* (New York: John Wiley & Sons, Inc.) That is because the student came out of a Russian engineering education background that was short on the topical concerns Western industrial engineers have. Among the things I had to communicate to him were the topics in the middle column to right from the UT-Austin Operations Research and Industrial Engineering Program. **Calculus Sequence** I took calculus sequence courses during my Bachelor's degree years and took refresher courses in the calculus again at The UAF just prior to my entering my sociology doctoral program. Course descriptions from The UAF catalog are as follow: **MATH F200X Calculus I** Limits, including those with indeterminate form, continuity, tangents, derivatives of polynomial, exponential, logarithmic and trigonometric functions, including product, quotient and chain rules, and the mean value theorem. Applications of derivatives including graphing functions and rates of change. Antiderivatives, Newton's method, definite and indefinite integrals, methods for substitution in integrals and the fundamental theorem of calculus. Applications of integrals include areas, distances, and volumes. **MATH F201X Calculus II** Techniques and applications of integration. Integration of trigonometric functions, volumes including those using slicing, arc-length, integration by parts, trigonometric substitutions, partial fractions, hyperbolic functions, and improper integrals. Numeric integration including Simpson's rule,	**Applications.** Modeling, analysis, and solution techniques for production and service scheduling problems, machine scheduling in deterministic and stochastic settings, exact and heuristic algorithms, and industrial applications, including semiconductor manufacturing and airlines applications. **Topic 6: Multicriteria Decision Making.** Techniques for problems involving more than one criterion measured on incommensurate scales, such as dollars, reliability, and quality of life. Topics include methods for generating nondominated solutions, interactive procedures for continuous problems, goal programming, multi-attribute utility theory, and the analytic hierarchy process.	**STOR 762 Discrete Event Simulation**

first order differential equations with applications to population dynamics and rates of decay, sequences, series, tests for convergence including comparison and alternating series tests, conditional convergence, power series, Taylor series, polar coordinates including tangent lines and areas, and conic sections. During my "math refresher year," I studied with mathematician Robert Piacenza and additionally took an **Honors Calculus Lecture** with him in which I earned a grade of A. **Other Useful Courses and Experiences** **MilS 301. Theory and Dynamics of Tactical Operations** (from the University of Alaska-Anchorage) **PS 480. Organizational Theory** (from the University of Alaska-Anchorage, taught to me by Dr. Garth Jones, a senior US Foreign Service officer) **ANTH 350. Language in Culture** (from Washington State University, taught to me by Dr. John Goss and which entailed much field research over Middle Eastern and South Asian respondents) **ANTH 630. Anthropological Field Methods** (from the UAF) **SOCY 720 -- Critical Survey of Research Methods** (from The USC) Survey of data-gathering techniques used in sociology including questionnaires, interviews, surveys, archival searches, experiments, and observational techniques. **Population Dynamics Pertinent to the Reunification of the Koreas** I gained a grounding in the population dynamics of North and South Korea when I assisted Dr. Eui-Hang "Ken"		

Shin edit *The Korean Journal of Population and Development* from 1991 to 1995. From this substantial and long-running experience with this major thinker on the reunification of the Koreas, I gained much of the core subject matter of the following course: **SOCY 814 -- Theories of Population Dynamics.** Systematic theories of population dynamics, demographic change as a cause/consequence of other social processes, inherent momentum of population dynamics. **Sociology Dissertation Work** Many semester hours in SOCY 899, Dissertation Preparation. As described below, quantitative analyses used were: ▪ Index of Qualitative Variation (IQV) or **"**Blau's H" ▪ The G-Study ▪ ANCOVA with nested terms ▪ "Canned" applications that assisted in analysis were SAS, SPSS, and Excel		

Issues of optimization and combinatorics approximately represent the upper-limit of my mathematical knowledge to date. I have, however, had to familiarize myself with other mathematical concerns for particular projects. In this vein, I had to come up to speed on the Fourier Transform, the Fast Fourier Transform, and the Karhunen-Loève Transform (FT, FFT, and KLT, respectively) in order to work on a signal intelligence project proposal in the last several years, as follows:

In 2003, with Thomas Gangale, George E. Seymour, and Claudio Maccone, I designed and proposed to government agencies the methodology for "Needle-in-a-Haystack Analysis of SIGINT Archives For Proximal Real-Time Response" This was a joint OPS-Alaska and Space and Naval Warfare Systems Command (SPAWAR) project proposal. In short, we recommended the application of a mathematical transform used in radio astronomy for rapid identification of terrorist users of electronic communication, for archived and incoming traffic. More on this below where I discuss ORSA/pattern analysis projects I have managed.

Other Innovations in Social Structural Analyses. To sum up my highly quantitative educational and related professional experiences during the late 1980s through the early half of the 1990s, after studying with mathematician Robert Piacenza and developing an intellectual discourse with mathematician Edwin Hewitt at the University of Alaska-Fairbanks, I became a doctoral student and intermittent visiting instructor in The University of South Carolina's Sociology Department. I made several social network analytical innovations while in residence there, especially from 1989-1994. I ran the Willer-Skvoretz small groups social network laboratory for a time, taught courses with David Willer, and assisted and studied with both men. However, I decided against completing my dissertation over SNA and related theoretical and methodological topics because David Willer was appropriating my innovations without proper attribution to me and doing it in such a way that would embarrass John Skvoretz if I spoke up. Skvoretz had been instrumental in accepting me into

my doctoral program, he was my benefactor in some other ways, and would become the second-most important of my dissertation professors on another topic. So, I kept quiet and wrote my dissertation on that other topic, a social psychological topic that has some structural bearing on size and demographics of extreme environmental work teams. However, my innovations changed the direction of David Willer's research.

Specifically, I re-worked the way power relations are computed in David Willer's Graph-Theoretic Power Index (GPI) to make it more mathematically rigorous and robust by bringing it more in line with actual mathematical graph and network theories. A central tenet of my innovations were weighting opportunities for transactions according to their places in variously configured networks for nodal actors (individuals, organizations, etc.) to transact with one another.

These innovations may be viewed in many publications where I am sometimes thanked in a footnote or referred to obliquely. Some are as follow:

Willer, D. Ed. 1999. *Network Exchange Theory.* Greenwood.

Willer, D. and J. Skvoretz. (1997). "Games and Structures. " *Rationality and Society* 9: 5-35.

Willer, D. and J. Skvoretz. (1997). "Network Connection and Exchange Ratios: Theory, Predictions, and Experimental Tests." *Advances in Group Processes* 14: 199-234.

Lovaglia, M.J., J. Skvoretz, B. Markovsky, and D. Willer. (1996) "Automated Theoretical Analysis of Exchange Networks: Prerequisites and Prospects." *Connections* 19:38-52.

Lovaglia, M., J. Skvoretz, B. Markovsky, and D. Willer. (1995). "Assessing Fundamental Power Differences in Exchange Networks: Iterative GPI." *Current Research in Social Psychology* 1: 8-15.

Skvoretz, J. and M. Lovaglia. (1995). "Who Exchanges with Whom: Structural Determinants of Exchange Frequency in Negotiated Exchange Networks." *SociaJ Psychology Quarterly,* 58: 163-177.

Lovaglia, M., J. Skvoretz, D. Willer, and B. Markovsky. (1995). "Negotiated Exchanges in Social Networks." *Social Forces* 75: 123-155.

Skvoretz, J. and D. Willer. (1993). "Exclusion and Power: A Test of Four Theories of Power in Exchange Networks." *American Sociological Review* 58: 801-818.

Skvoretz, J., D. Willer and T.J. Fararo. (1993). "Toward Models of Power Development in Exchange Networks." *Sociological Perspectives* 36: 95-115.

Markovsky, B., J. Skvoretz, D. Willer, M. Lovaglia and J. Erger. (1993). "The Seeds of Weak Power: An Extension of Network Exchange Theory." *American Sociological Review* 58: 197-209.

Skvoretz, J. (1991). "Theoretical and Methodological Models of Networks and Relations." *Social Networks* 13: 275-300.

Skvoretz, J. and D. Willer. (1991). "Power in Exchange Networks: Setting and Structural Variations." *Social Psychology Quarterly* 54: 224- 238.

Though moving further away from the Willer research program, I continued to work with social structural concerns. The KVAD project developed after I became relatively independent of the Willer "shop." As a graduate assistant, and then later on faculty off and on, I worked alongside a junior professor, Dr. Steve Borgatti. I helped beta-test an early version of ANTHROPAC that I urged Borgatti to market. Borgatti went on to do just that. And, he did a great deal more besides. He also designed and marketed UCINET. UCINET like several software applications now in use by the military and in industry can be made to conceptualize specific data in network configurations. These networks can be examined for who/which nodes in the network are central, most powerful, how tightly bound the nodes are, how densely populated the network is, which parts of the network cluster together, etc. Those of us in the Sociology Department at The University of South Carolina in the 1990s led the development of these concepts and envisioned their potential applications. Among the

professors in our department were those who had had some association with the University of California-Irvine (UCI) and some other campuses where their social sciences departments valued social structural conceptualizations, developments, and the finding of applications. Those professors and those departments helped comprise a creative "great group." I was privileged to be on the trailing edge of that great group.

ANTHROPAC and UCINET are now part of the MAP-HT package of software applications that we use in the Human Terrain System (mentioned above).

At The University of South Carolina in my dual roles as doctoral student and faculty member in the Sociology Department, I continued to operate OPS-Alaska, the network collaborative of scholars and scientists that grew out of the organizations I founded and the projects I worked on dating from the late 1970s. I was able to run **OPS-Alaska** projects out of my office at The University of South Carolina and then later out of my office at Erskine College. Those projects were:

- The Kuwait Victimization Assessment Database (KVAD) -- 1990 - 1992
- The Russian Space Station Simulation – 1997 - 1999
- Homogeneous and Heterogeneous Extreme Environmental Groups: Their Behavior and Performance Patterns – 1998 – 2000 and ongoing

The Kuwait Victimization Assessment Database (KVAD) -- 1990 - 1992

I had started a couple of direct Army commission efforts while in Alaska (Reserve and Guard). One was still in progress when I reported to my doctoral program in South Carolina. I was prepared to come back to Alaska when I would receive word that I had received a commission. But one obstacle had come up after another. The last straw was when my would-be unit was called into the Gulf War and my direct commissioning paperwork appeared to have been lost in the system. I got tired of trying to track it among know-nothing staff personnel left behind. Thwarted at every turn to re-enter and serve the US Army as an officer providing scientific and technological know-how preceding and during the Gulf War, I pulled together a civilian team of social scientists, statisticians, jurists, and former military professionals, including former members of the Special Forces, in order to bring science to bear to help liberated Kuwait. Our project was the Kuwait Victimization Assessment Data Base (KVAD).

By this time, I was a regular feature in The USC Sociology Department, doing research and teaching. We had lost our primary social structural scientist, Dr. Bruce Mayhew, just eight months before I had arrived. But, our department was still on the forefront of social structural innovation, part of the "Great Group" of social scientists from other social scientific departments throughout the United States making big strides in social network analysis and other analytical concepts. I worked alongside the creator of UCINET and ANTHROPAC, Steve Borgatti, during this timeframe At its height, about half of our small sociology department was involved in some fashion on the KVAD team. The KVAD teammates worked alongside some of the seminal SNA thinkers in our university jobs, and those of us in graduate programs studied with them as well. I was studying doctoral-level research methods with Dr. Katie Faust in the Spring of 1991 who was writing a major statement on SNA.6

Anticipating an international criminal tribunal would be convened to bring justice and reparations to Kuwait, and having made the appropriate connections, my team expected to deploy to liberated Kuwait to perform the KVAD research. For this research, we designed a methodology combining survey research methods, social network analysis (SNA) and other social structural techniques, statistical applications, and satellite and aerial remote sensing and GIS applications to serve the tribunal to determine personal and organizational damages and, thus, reparations in the wake of Iraq's invasion of Kuwait.

After several months, when the tribunal was not convened, I turned our Kuwait Victimization Assessment Data Base (KVAD) methodology over to the UN research division to which we were collegially tied. Not long afterwards,

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6 Wasserman, Stanley, & Faust, Katherine. (1994). *Social Network Analysis: Methods and Applications.* Cambridge: Cambridge University Press.

colleagues began bringing to my attention news of our same methods being used to pinpoint war crimes and perpetrators in the Balkans. Our methods and what we tried to do for Kuwait foreshadowed the use of social network and other analytical concepts in military environments that are featured in their basics in Appendix B of FM 3-24 (MCWP 33.3-5) *Counterinsurgency,* which was not published till December 2006.

There is no doubt that the give-and-take of intellectual discourse and our attempts to find practical applications for these concepts during this time period at The University of South Carolina and at our sister locations, to include The USC's Geography Department,7 are part of the evolution of SNA and related analyses for military use. The social structural concepts and methods used in various MAP-HT applications (Analyst Notebook, ANTHROPAC, UCINET, ArcGIS, etc.), used by the US Army's Human Terrain System, are part of the evolutionary lineage downstream of what we tried to do over a decade and a half ago.

I used many of the analytical concepts from my association with Borgatti and Skvoretz, and through Skvoretz and Dr. Patrick Nolan, those analytical concepts of the deceased Bruce Mayhew, in the methods I designed for the Kuwait Victimization Assessment Database (KVAD) for the Government of Kuwait. I invited several of the professors in our Sociology Department at The USC to be part of the KVAD team. They comprised what we in the Human Terrain System would now call a "Reachback Cell" today.

One reason I was drawn to sign on for the Army's Human Terrain System was because it resembled what my team tried to do with the KVAD in 1991. Like the HTS in recruiting and assigning people to Human Terrain Teams, I also pulled together a hybrid team of scientists, recent military veterans, and ex-Special Forces personnel – a team I would have been able to field had the special international criminal tribunal for Kuwait not been stalled. Other projects beckoned.

Russian Space Station Simulation – late 1997 - 1999

I was in on the ground floor on a Russian space station simulator study. I played several roles concerning this simulation, SFINCSS-99 (the "Simulation of Flight of an International Crew in a Space Station"). See the following for a description of that project:

http://www.space.com/news/spacestation/isolation_russia_000412.html
http://hfetag.com/briefs/56-t-e-Dudley-Rowley.pdf

My main study inside the various modules of the space station simulator emplaced 12 video cameras trained on crew activity areas. The different crews knew that they were subject to being sometimes surveilled for data. But, to offset their awareness of being observed, I had each camera turned on according to its own random schedule, a schedule to which no one inside containment was privy, but that everyone knew would be random. The randomly-generated video clips offset the emergence of the Hawthorne Effect and the lack of enough funds to hire Russian staff and to buy enough video cassettes. These video clips constituted the documents that would be content-analyzed over several studies, but most especially over the following study that would look for the increase and decrease of six crew behaviors over time.

The Altman Scale

I am the creator of the Altman Scale that is based on the work of Dr. Irwin Altman, a Navy scientist, who made a number of qualitative social psychological/human factors studies that informed the creation of the nuclear submarine fleet. I took those diagnostic factors that verged on the quantitative from Altman's work and invested them with mathematical rigor to design a robust instrument for the assessment of how well extreme environmental groups function over time. The Altman Scale featured six dimensions useful for assessing extreme environmental group functionality.

The full paper that describes the construction and use of the Altman Scale is:

"A Social States Index for Multi-national Crews Co-Contained in the ISS Simulator, Moscow, Russia," Marilyn

7 Dr. David J. Cowen in The USC's Geography Department was a major innovator in the integration of GIS and remote sensing techniques.

Dudley-Rowley, Vadim Gushin, and Tom Gorry, presented during 12-15 July 1999, Denver, Colorado, at the 29th International Conference on Environmental Systems (ICES) Meetings, NASA-Johnson Space Center's Psychological Services Group Session. Published as a SAE Technical Paper (1999-01-2101) in the SAE Technical Series and on CD, *Global Mobility Database,* ISSN 0148-7191, 1999.

From the paper (p. 5):

For descriptive purposes, the Altman dimensions whether they change or are stable over time would be best displayed as stanine scores. The advantage of the stanine score is to simply state the values of a distribution from a scale of 1 (low percentile) to a mean of 5 (50^{th} percentile) and 9 (high percentile). This would make a comparison between a norm group score and a sample score readily apparent. How meaningful the difference between an observed sample and a norm group depends entirely on the size and the sample of the norm group (baseline). Raw scores are easily converted into stanines by arranging the original scores in order of size and then matching stanines in accordance with the normal curve percentages. For example, if an indicator, over the course of the simulation, consists of exactly 100 instances from observational sampling, the 4 lowest counts receive a stanine score of 1, the next 7 a score of 2, the next 12 a score of 3, etc. (Figures 2 and 3). Each standardized score will be graphed as a scale in which normal ranges are plotted. Profiles of each indicator will be made at regular intervals (every sixth part of the mission duration; every quarter; etc.). Owing to this, off-nominal indices on each of the indicators can be plotted and used to anticipate problems in group functioning during the mission, to provide an early effort at prediction as this simulation is running.

Stanine scores made pencil-and-paper group functionality assessments relatively easy. However, to suit an editor who wanted something more sophisticated in the paper, I introduced the potential of repeated measures of multivariate analysis (RM-MANOVA) (p. 5):

For data recorded on a quarterly basis, the tabulation will be arranged in a table with four time periods as columns and six Altman indicators as rows. The data will be recorded for each indicator for each time internal for individuals, groups, and tasks. The analysis for the six core hypotheses will be a repeated measures multivariate analysis of variance (RM-MANOVA). This would address both the problem of correlated observations across groups, and the intercorrelations among dependent variables. This analysis will collapse all the dependent variables and maximize the effects of the independent variable (time). The result of the MANOVA would represent the summary of the social state of the mission over time.

My Altman Scale paper is in stock over:

http://www.sae.org/technical/papers/1999-01-2101

It is featured without its illustrations over:

http://pweb.jps.net/~gangale/opsa/SocialStatesIndex/SAE_frm.htm

And, it is presented in its stripped down version, a U.S. Department of Defense Human Factors Engineering Technical Advisory Group briefing, over:

http://hfetag.com/briefs/56-t-e-Dudley-Rowley.pdf

My involvement with the Russian space station simulation was more than a scientific venture on my part, but was also a counterterror public diplomatic effort that I engaged in when I agreed to substitute for the requested NASA researcher(s).

The Relationship of the Russian Space Station Simulation to the International Science and Technology Center and the Center for Global Security Research, Lawrence Livermore Laboratory

The Russian space station simulator was funded by Japan with the funds funneled through the International Science and Technology Center (ISTC). The ISTC is a transgovernmental organization that amasses funds from many different nations and certain agencies and companies. For example, the U.S. State Department and Boeing provides funds to the ISTC. Then, the ISTC funds peaceful projects to employ scientists and engineers from Russian and other components of the former Soviet Union. Such projects are in the realm of civil space endeavors, improved agricultural production, the creation of new vaccines, etc. Without this work, these scientists and engineers would be desperate and would sell

weaponizable materiel and expertise to rogue nations and terror warlords in order to put beans on the table. So, ISTC is a global security organization. And, that is why it is unsurprising that Ambassador Ronald Frank Lehman II, Director, Center for Global Security Research, Lawrence Livermore Laboratory, is the Chairman of the Board of this organization. Because of my involvement with the Russian space station simulation, I was later named a collaborator-partner of the International Science and Technology Center, ISTC, Moscow, Russia.

A Word on Doctoral Dissertation Topics

The richness of research activity during my time in The USC's Sociology Department (1989-2000) was incredible and I could have written my dissertation on a number of different topics all things being equal. I did feasibility studies toward and could have chosen among several doctoral dissertation topics, but all things were not equal. Some topics could not be pursued further for a lack of funding and these were:

- The KVAD project (the lack of funding only stemmed from the fact that the expected tribunal was not convened)
- A human factors examination into the wreck, spill, rescue/clean-up, and follow-up recovery of the *Exxon Valdez* disaster (methods combined remote sensing and geoscientific and sociological analyses)

Deemed "too psychological" and rejected as a "structural" sociology dissertation topic by my major professor was:

- My main study ensconced aboard the Russian space station simulator that would make use of the Altman Scale

- Having made innovations over the Willer Graph-Theoretic Power Index, I could have applied the index to compute the outcomes of experimental trials or actions from the historical record in order to determine if the GPI, as an instrument, was robustly predictive of who and what organizations were the power brokers among linked persons and organizations, etc.

However, as described above, I voluntarily disconnected myself from the Willer "shop" when he started claiming my discoveries as his own and implicated unsuspecting co-authors to cover his claims. I continued to make social network innovations throughout the 1990s, but shared them with other colleagues, such as my KVAD teammates, some of whom were from other universities, and some of whom were connected to the United Nations research division.

The NASA Connection

And, then, quite suddenly, a single conference opened new research avenues and changed the course of my doctoral dissertation studies and opened up new OPS-Alaska project opportunities. In the mid-1990s, NASA, the U.S. Air Force, the National Institutes of Health, and the American Institute of Aeronautics and Astronautics (AIAA) convened a landmark medical and life sciences and systems conference in Houston. I wrote a paper about a study I had advised on in the late 1980s concerning the containment of a team of people in Alaska in a closed habitat simulating a long-duration space mission. I received so much positive feedback at the meeting that I returned to The USC with new research topics to explore. And, ultimately, one of these became the topic that earned me my PhD and which earned OPS-Alaska substantial grant funding from the National Science Foundation.

Homogeneous and Heterogeneous Extreme Environmental Groups: Their Behavior and Performance Patterns – 1998 – 2000 and ongoing

Analytical methods have been:

- Content analysis from diaries, logs, narratives, and other records from Antarctic, Arctic, Russian space missions, American space missions, submarine cruises, and mountainclimbing expeditions
- Index of Qualitative Variation (IQV) or **"**Blau's H"
- The G-Study
- ANCOVA with nested terms
- "Canned" applications that assisted in analysis were SAS, SPSS, and Excel

National Science Foundation Research Project

OPS-Alaska began receiving funding for a more expanded research project prior to my actually completing the writing of my PhD dissertation on this topic. The dissertation covers stratified samples of polar and space missions. The expanded study examined many more polar and space missions, submarine cruises, and mountainclimbing expeditions.

Nearing receipt of my doctorate, while I taught on short-term contracts in colleges and universities, I continued to run OPS-Alaska with the help of several colleagues (www.ops-alaska.com). And, I began to function more like a human factors engineer with the following organizational ties that have instigated many OPS-Alaska aerospace projects ever since:

- The American Institute of Aeronautics and Astronautics (AIAA) Design Engineering Technical Committee
- The Society of Automotive Engineers International (SAE), and
- NASA

AIAA -- 1998 - present

The American Institute of Aeronautics and Astronautics is one of the United States premier engineering societies and, at once, an international organization 30,000 members in number. It is comprised of various technical committees (TCs). I am a founding member of the AeroSpace Architecture Technical Committee that began life under the Design Engineering Technical Committee in which I held membership. I left the Architects to found a technical subcommittee under the Society and Aerospace Technology Technical Committee, and I am recently active with the Space Operations Technical Committee and the Space Logistics Technical Committee. My paper for *Space 2008* in San Diego this past September for a Space Operations session was about the many timing and temporal issues concerning Mars surface operations and problems for unmanned mission ground controllers. The Space Logistics TC has invited a paper from me to be presented at *Space 2009* in Pasadena in September. That paper is about the logistics of space-based energy systems. I am a frequent contributor to the annual *Space* conference and Aerospace Sciences Meeting and submit papers and presentations upon popular demand.

SAE – 1999 – 2006

I was a contributor for several years of the SAE's International Conference on Environmental Systems (ICES) that was also supported by the AIAA. My Russian space station simulation studies benefited from the feedback of conferees, as did my reportage of extreme environmental research, and my contribution to the design of the NASA Habot moon mission profile.

NASA

Through my connections with the AIAA and the SAE and their international aerospace community membership in which Lockheed and Boeing play key roles, I have done a good deal of work on what NASA calls "bootleg" projects – projects that get scientists and engineers to work on portions of larger NASA projects for very little in return. We do it because it puts us in line for larger NASA grants and contracts.

Major examples of my aerospace projects through the AIAA, SAE, and NASA venues are:

- The NASA Habot moon mission profile. Habots are maneuverable robotic modular habitats, laboratories, and workspaces. NASA has invested in using these as a feature of its Return-to-the-Moon initiative. As the principal investigator for the following features, for NASA, I and my frequent co-author/co-researcher, Thomas Gangale reworked the mathematics concerning the Habot mission, as it was originally conceptualized for Mars. We:

    - Reconfigured the Habot Mars mission profile for the Return-to-the-Moon profile
    - Optimized the allocation of crewmembers, resources, and time for the duration of a moon mission for crews numbering 4, 6, and 8 members over varying permutations of extra-vehicular activities (EVA)

Ref. Dudley-Rowley, Marilyn; Gangale, Thomas; Lemke, Lawrence; Cohen, Marc M. (2005 July). "Habot Lunar Crew Size, Skill Mix, and Time Model," (SAE 2005-01-2792). 35th International Conference on Environmental Systems (ICES), Rome, Italy, 11-14 July 2005. Warrendale, Pennsylvania, USA: Society of Automotive Engineers.

- The Mir Crew Safety Record

The human factors assessment I made for NASA of the NASA-Mir missions over 2003 took nearly the same time and effort for a Master's thesis, as I reflected later. My main job was to find out if the Rockwell study of 1985 had been sufficiently predictive of human factors events over several Mir space station missions undertaken by joint American and Russian crews.
Ref. "1985 NASA Rockwell Space Station Crew Safety Study: Results From *Mir*," by Marilyn Dudley-Rowley, Marc M. Cohen, and Pablo Flores, for the space conference hosted by the Institute for Biomedical Problems, Devoted to the 40th anniversary of the Institute of Biomedical Problems, Russia's leading research institution in space biology and medicine: Living Beings and Environment: Adaptation to Extreme Conditions, Session 12: Reserve Capacities of the Human Body and Occupational Risks, Presidium of Science, Moscow, Russia, 4 Nov 2003. Published, March 2004, in *The Journal of Aerospace and Environmental Medicine* (Moscow, Russia).
Ref. Dudley-Rowley, Marilyn. 2006. "The Mir Crew Safety Record: Implications for Space Colonization," *AIAA Space 2006 Meeting Papers on Disc* [CD-ROM], AIAA-2006-7489, Reston, Virginia.

My frequent co-researcher and co-author, Thomas Gangale, and I were recently asked by an official at NASA-Ames Research Center to help with graduate student projects on timing issues of space operations. We are primary authorities on that subject.

U.S. Department of Defense Human Factors Engineering Technical Advisory Group

I am a technical advisor with the U.S. DoD Human Factors Engineering Technical Advisory Group. When I am not deployed and have the time, I can meet with that group upwards of three times a year. I am on a variety of subject matter expert lists, at Hamilton Booz Allen and SAIC, for example, and it is because of my reputation in the human factors engineering sphere.

Subject Matter Expert Agreements/Lists

- Human Systems Information Analysis Center (HSIAC http://iac.dtic.mil/hsiac), a Department of Defense Information Analysis Center, sponsored by the Defense Technical Information Center, technically managed by the USAF Research Laboratory's Human Effectiveness Directorate and operated by Booz Allen Hamilton. (I have a subject matter expert agreement with them.)

- SAIC

Continuing OPS-Alaska Projects

- A KLT Application For Needle-in-a Haystack Analysis of SIGINT Archives for Proximal Real-Time Response
- Development of a comprehensive human factors methodology for assessing terror networks of personnel, materiel and technologies, and locations and how they spread
- The Gangale Orbits
- The American Plan (Graduated Random Presidential Primary System)
- "Storm and Transformation" policy publications
- A Project Management Application in Two-Dimensional Time

Moving into the 2000s, I have research-managed several other highly quantitative ORSA- and pattern analysis-related projects for OPS-Alaska. These projects require a good deal of understanding of applied mathematics on my part to manage.

An analytical application I thought would be uniquely marketable after 9/11 and during the hunt for Saddam Hussein was:

- A KLT Application For Needle-in-a Haystack Analysis of SIGINT Archives for Proximal Real-Time Response. The OPS-Alaska proposal and/or research team was me, Thomas Gangale, Dr. George Seymour, and with Dr. Claudio Maccone

The core document on this project was:

"Needle-in-a Haystack Analysis of SIGINT Archives for Proximal Real-Time Response: Integrating Human Systems With Technology." A proposal to the Office of Naval Research and other federal agencies, by Marilyn Dudley-Rowley and Thomas Gangale, OPS-Alaska and George Edward Seymour, Navy SPAWAR Systems Center, San Diego, 2003.

We requested federal funding to adapt an astronomical software program based on the Karhunen-Loève Transform (KLT) so that it could provide signal intelligence (SIGINT) analysts with a powerful means to allow proximal real-time response to threats to national security who communicate electronically. We knew that astronomical software programs that search the Cosmos for unusual signals, using algorithms that are designed to look for the proverbial "needle in a haystack," were where we would find the backbone for our application. Adaptation of this software would comb the NSA's and similar electronic archives for "unusual signals" originating from the likes of Osama bin Laden and his associates. Incoming signals could be identified, perhaps within a matter of minutes or hours, rather than weeks and months later when they are not actionable. Dr. Claudio Maccone is one of the world's premier experts on KLT applications. Using the KLT for pattern recognition of visual data (like photographs of facial features) was a relatively simple problem. Audiographic data presented a more difficult problem. However, Dr. Maccone thought it could be done. I continue to "shop" this pattern recognition project.

- Development of a comprehensive human factors methodology for assessing terror networks of personnel, materiel and technologies, and locations and how they spread.

Ref. "The Transnationalization of Terror – a Human Factors Approach to Networks of Personnel, Materiel and Technologies, and Locations," A proposal submitted to the NATO Manfred Woerner Fellowship, 2004-2005 Programme, NATO Academic Affairs, January 2005.

From the above, I wrote:
The methods that would best elaborate on the transnationalization of terror come to us from human factors engineering. The comprehensive conceptualization of the human factors interfaces is:

1. the *human-human* interface,
2. the *human-technology* interface, and
3. the *human-environment* interface.

The term "environment" does not only pertain to issues of biophysical ecology, but other, more expansive, ecological issues like time usage, the networks of cyberspace, and sociocultural venues – all human-environment issues that have overlap with the human-human and human-technology interfaces. Any methods that iterate over these three human factors interfaces would be expected to produce a comprehensive picture about transnationalized terrorism that is at once embraceable in its broad outlines by policymakers and students, but detailed enough to help drive processes of actionable intelligence.

Why are these methods the best? Because, the methods of human factors engineering are closely allied to the solutions to problems of advanced systems projects management. Advanced systems projects that most people are familiar with come to us from aerospace transportation and the computer industry. The problems of a globalizing, interdependent world -- a world that is precisely made more global and interdependent through rapid transportation and communication and computational capacity -- are characteristic of advanced systems. *The main idea behind the methodology is to use the right tool for the job.*

I was still on a teaching contract during this period. Prior to submitting my request for funding to NATO, my students and I had done some preliminary studies developing my methodology over 37 terror and deviant groups bearing on Central Asia and the South-to-North drug smuggling routes.

OPS-Alaska is a "for-profit" research firm. But, some of OPS-Alaska's mathematical production seem more like "gifts to the public good." They drive policy, but are not cash cows. These are:

- The Gangale Orbits
- The American Plan (Graduated Random Presidential Primary System)
- "Storm and Transformation" policy publications

The Gangale Orbits

An issue of a human Mars mission is that the crew would be out of touch with communications with Earth for upward of three weeks during solar conjunction with Earth, which would be the case with a mission profile that depended on the Hohmann Transfer inbound and outbound. The Gangale orbits help solve this problem. The basic Gangale orbit's period is one Martian year, but whose eccentricity and inclination both differ from that of Mars. As with an in-plane oscillating satellite, this out-of-plane orbit mimics the motion of a satellite in orbit around Mars, although the satellite is not bound by Mars's gravity, but is actually in solar orbit. This means that the change in the orbit's eccentricity makes it appear to orbit around Mars as it rises above and falls behind the planet.

Ref.: Byford, Dorothy, James Goppert, and Thomas Gangale. 2008. "Optimal Location of Relay Satellites for Continuous Communication With Mars," *AIAA Space 2008 Meeting Papers on Disc* [CD-ROM], AIAA-2008-7919, Reston, Virginia.

The American Plan (Graduated Random Presidential Primary System)

A graduated random algorithm is at the heart of this method to repair the presidential nomination process. It accomplishes what the Vanishing Voter Project, Kennedy School of Government, recommends:

- "A nominating process that remains competitive for a longer period of time in order to give the public a greater opportunity to engage the campaign and to become informed about the candidates."
- "A briefer interval between the decisive contests and the conventions in order to help people sustain the levels of public engagement and information they had attained when the nominating campaign peaked."
- "A system that increases the likelihood that voters in all states will have an effective voice in the selection of the nominees."

The American Plan preserves "retail politicking" in small states early in the season. It gives an underfunded grass-roots campaign a chance to catch fire and take off. It gives candidates a chance to bounce back from early defeats.

A gradual weeding-out process occurs, as less-successful candidates drop out of the race. The goal is for the process to produce a clear winner in the end, but only after all voices have had a chance to be heard. The system features a schedule consisting of ten intervals, generally of two weeks, during which randomly selected states may hold their primaries. In the first interval, states with a combined total of eight congressional districts would hold their primaries, caucuses, or conventions. This is approximately equal to the total number of congressional districts in Iowa (5) and New Hampshire (2), thus preserving the door-to-door "retail politicking." Any state or combination of states amounting to a total of eight congressional districts could be in the first round of primaries proportions of people of color. The District of Columbia, Guam, Puerto Rico, and the Virgin Islands, which also send delegates to both national conventions, are each counted as one district in this system. In the second period--two weeks later--the eligibility number would increase to 16 (8 x 2). In the baseline design of the American Plan, every two weeks, the combined size of the contests would grow by eight congressional districts, until a combination of states totaling 80 congressional seats (8 x 10) -- nearly one-fifth of the total--would be up for grabs in the tenth and last interval toward the end of June.

Because our biggest states are much more populous than the other states, this baseline design would allow California, which has 53 districts, to vote no earlier than the seventh interval, in which the eligibility number is 56 (8 x 7). To put California on equal footing with the other populous states, the order of Rounds 4 through 10 is staggered: 8, 16, 24, 56, 32, 64, 40, 72, 48, 80. With this adjustment, the four most populous states are all eligible to vote by the fourth of ten rounds. Since only eleven percent of the American electorate votes in the first three intervals, these large states can figure early enough in the delegate selection process to have as meaningful an input as any state. The American Plan treats all states even-handedly,; on average, the smallest states are scheduled at random to vote after 32.5% of the country has voted, but for the largest states this figure is no higher than 45.5%, a spread of only 13 points.

Gangale authored a book about the American Plan, *From the Primaries to the Polls: How to Repair America's Broken Presidential Nomination Process* (Praeger 2008). That affiliation led to Praeger publishing another of his book manuscripts on international law concerning aerospace issues that I have sometimes co-authored with Gangale on. Senior NASA officials and The Aerospace Corporation have used our prior papers on that topic to advise national aerospace policy.

Similarly, I think we are having an impact with our several "Storm and Transformation" publications concerning the linkages and dynamic among climate change, decline side of oil, 30+ years of a dumbed-down, tenure-starved American Academe, space technology and green technology, deficiencies in the national infrastructure, global electrification, and America's ability to remain a core nation in the world system of societies. We were able to swing a congressperson's vote on the recent NASA appropriation bill by explaining how the space effort creates green technologies. The congressperson had *never,* in decades of serving in Congress, voted positively for the NASA budget.

Ref.: Dudley-Flores, Marilyn. 2008. "Global Warming, Earthly Disasters, the Moon and Mars: Transfers of Knowledge (TOK) – the American Problem," *46th AIAA Aerospace Sciences Meeting Papers on Disc* [CD-ROM], AIAA 2008-1464, Reston, Virginia.

OPS-Alaska's most marketable project at this time is

- A Project Management Application in Two-Dimensional Time

When Thomas Gangale told me about this project that he had shelved by the late 1990s, I told him to dust it off, because what he had was an important ORSA tool.

From Gangale, Thomas. 2007. "The Architecture of Time, Part 3: Project Management in Two-Dimensional Time," *AIAA Space 2008 Meeting Papers on Disc* [CD-ROM], AIAA-2007-6073, Reston, Virginia:

The Gantt chart depicts the current prediction of how the future is going to unfold, but it does not adequately tell the history of the project's efforts to get to that future. This is because the Gantt chart is really a series of charts, each of which has only one dimension—time—running from left to right across the page. The vertical dimension does not signify a continuum, but is simply a means of compiling the schedule of individual albeit interdependent milestones onto one visual display. It is today's snapshot of how those milestones relate to each other in the overall schedule, but it does not show very well how those milestones have influenced each other over time.

It would be valuable to have some way of displaying all of yesterday's schedule snapshots as well as today's on a single chart. Then one could see at a glance the nature of the trends for each milestone and how they feed into the trend of the master schedule. This can be done by reformatting the chart so that a second dimension of time is displayed. The time axis on a conventional schedule chart isn't real time in the sense of showing the occurrence of actual events with respect to the passage of time; it is only projected time—the pseudo-temporal axis along which a manager positions his best guesses of when he will achieve his milestones. In a chart that not only contains the pseudo-temporal axis but also a second axis corresponding to the actual passage of time, one can see the *history* of a program's perception of the *future*—how schedules have been influenced by the course of events, and how they have evolved with time. Presentation of schedules in this new two-dimensional format provides managers an extra dimension of information, enabling them to make better subjective judgments on how realistic the current schedule is, and how it may change in the face of possible future events.

There are two distinct product lines that will come out of this project: 1) A two-dimensional time treatment of the world's manned space programs and 2) a software application that we can actually package and sell to biotechnology, aerospace, maritime, and pharmaceutical companies, etc.

Research Methods – Qualitative and Quantitative – Teaching (1989 – 2007)

I have intermittently taught in colleges and universities for many years. Departments have requested me because of my facility in teaching qualitative and quantitative research methods.

Among my last teaching posts was tutoring International Relations graduate students at San Francisco State University at the request of their "Master's of International Relations" (MIR) group. These students have gone on to fill Foreign Service and diplomatic positions or work in international business in a number of countries.

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