

**PLAINS INDIAN SIGN LANGUAGE CORPUS LINGUISTICS PROJECT (PSD varieties)
NSF-NEH-DEL Proposal
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PROJECT DESCRIPTION

Classified in the Sign Language family, PISL [Ethnologue code: PSD] is considered a distinct language from American Sign Language (ASL) used in Deaf communities of the U.S. and Canada. Although the extant number of PISL signers is unknown at this time, it has been reported that as many as one hundred or more North American Indians may still know and use AISL to varying degrees of proficiency. PISL transmission has dramatically declined from its widespread use in previous times, due in part to its replacement by English, and ASL in some cases. Due to this replacement, there continues to be an extreme urgency to document, preserve, and revitalize PISL and other indigenous languages now primarily used by elders and by American Indians who are deaf (Davis 2010, 2012).

The proposed project will utilize innovative linguistic technologies to create a digital corpus of signed and spoken American Indian languages, as well as a variety of cultural practices and artifacts. It will include rare and irreplaceable documentary materials of several American indigenous languages (films, photographs, and texts). Though well suited for sign language, the linguistic technologies and applied pedagogies of this project are relevant to multiple disciplines and to both signed and spoken languages; training students in field methods, linguistic analyses, emergent technologies; and engaging members of Native communities in documenting and revitalizing endangered languages. The latest linguistic findings, ranging from lexical-grammatical descriptions to discourse functions and acquisition, will be integrated into the digital corpus and research website for the project. This will offer dissemination to as broad an audience as possible and contribute to indigenous sign language preservation, revitalization, while fostering greater anthropological, linguistic, and scientific interdisciplinary research. The proposed corpus linguistics project will demonstrate how human language spans multiple linguistic modalities: written, signed, and spoken.

The project aims to: 1) transform an extensive collection of Plains Indian Sign Language (PISL) documentary linguistic materials into a digital corpus that is accessible to local Native American communities, scholars of linguistics and anthropology, and related disciplines; 2) identify and involve more American Indians who are learning and using indigenous sign language varieties in order to generate linguistic descriptions about sign language usage, lexicon, and grammar; 3) collaborate with expert signers from different American Indian nations (Assiniboine, Blackfeet, Crow, Cheyenne, and others); 4) collect additional documentary materials of indigenous signing from archival and contemporary fieldwork; 5) increase awareness about sign language in intertribal and international communities; and, 6) disseminate project outcomes to Native American communities, broader audiences, and researchers of indigenous and endangered languages.

The work to be done by this NSF-NEH fellowship project will be scheduled during two major time periods, comprising a total period of 12-months full-time work on the project (Sept 1, 2014 to May 31, 2015; and June 1, 2016 to August 31, 2016)

Linguistic environment and geographic spread

Linguistic and ethnographic documentation from both historical accounts and contemporary fieldwork indicates that signing was used for a variety of discourse purposes across the major American Indian cultural areas—the Southeast, Gulf Coast, Southwest, Great Plains, Plateau/Great Basin, Northeast, Subarctic, and Mesoamerican geographic areas (Campbell 2000; Davis 2010; Mithun 1999; Taylor 1981, 1996). Evidently, a highly conventionalized and linguistically enriched sign language emerged as a common way of communicating among various American Indian communities.

In previous times, indigenous sign language was so prevalent and widespread that it was once used among many Indian nations as a lingua franca. Plains Indian Sign Language (PISL) most likely emerged and evolved due to the central role it served historically as a widespread lingua franca (Davis *ibid*; Taylor *ibid*; West 1960). Linguistic researchers have identified and described three major Indian lingua francas: Mobilian (a variety of Choctaw-Chickasaw) of the Southeast, Chinook of the Northwest, and the Plains Sign Language of the Great Plains expanse (Taylor 1981). Additionally, several European and Indian spoken languages may have served as lingua francas at different times to varying degrees (Mithun 1999).

Plains Indian Sign Language (PISL)

Historically, PISL has been long observed and described by scholars since at least the 1800s (Dunbar 1801, Gallaudet 1848, Kroeber 1958, Long 1823, Mallery 1881, Sanderville & Scott 1934, Voegelin 1958, West 1960). Several prominent researchers have hypothesized that sign language was used among North American Indians prior to European contact; and, they distinguished the emergence of a sign language lingua franca from the pidgins, trade languages, and mixed systems used by some native groups (Campbell 2000; Mithun 1999; Goddard 1979, 1996; Taylor 1981, 1996). In previous times, the lack of a single dominant language group in the Great Plains cultural area may be the reason for the adoption of PISL over any particular spoken language to serve as a sign language lingua franca. In brief, the historical and contemporary sociolinguistic evidence suggest that indigenous sign language had already emerged prior to European contact and developed through nativization and creolization processes—that is, acquired natively and expanded lexically and grammatically (Davis *ibid*).

Traditionally and up until today, PISL has served various social and discourse functions both within and between dozens of native communities of the Great Plains cultural areas. A linguistic, cultural, and geographic area that once spanned over one and a half million square miles (4.3 million square kilometers), an area similar to that of the European Union's 27 member states combined. Although a highly endangered indigenous language, PISL has survived due to the pivotal role it played for many generations, spanning a range of linguistic communities, geographic regions, and cultural areas. With prior NSF-support (2009 – 2012), the lead researcher (PI) and Native American collaborators have conducted the first linguistic studies and ethnographic fieldwork in more than 50 years to document sign language usage by native signers among four major Plains Indian cultural groups; namely, Northern Cheyenne, Blackfeet, Crow, Assiniboine, among others. Thus far, the PISL project has filmed approximately 25 deaf and hearing signers of the PISL variety, though several were elders and passed away recently. The extant number of PISL varieties and users is unknown, but the language has not vanished. It is still used within several Native communities in traditional storytelling, rituals, legends, prayers, conversational narratives, and is still being learned by certain members of the clan, tribe, or nation, among hearing and deaf individuals alike. Its widespread use has greatly diminished from previous times and it is considered an endangered indigenous language today.

Degree of Language Endangerment

Although classified in the Sign Language family, PISL [Ethnologue code: PSD] is considered a distinct language from American Sign Language (ASL) used in Deaf communities of the U.S. and Canada. Although the extant number of PISL signers is unknown at this time, it has been reported that as few as one hundred or more North American Indians may still know and use AISL to varying degrees of proficiency (Davis *ibid*). As reported earlier, PISL transmission has dramatically declined from its widespread use in previous times, due in part to its replacement by English, and ASL in some cases. Due to this replacement, there continues to be an extreme urgency to document, preserve, and revitalize PISL and other indigenous languages that now primarily used by elders and by American Indians who are deaf.

There continues to be an urgency for the work proposed in this documentary linguistic project, as some Elders previously identified as fluent PISL users have passed away and others are in declining health. Moreover, English has become the dominant language in most public and many social contexts today, and ASL is the dominant sign language today even among deaf tribal members and their families. Still, there are hundreds of American Indians in the U.S. and Canada who know some variety of PISL. Also, many tribal members of the younger generation (including both deaf and hearing individuals) are keenly interested in learning and maintaining the language of their ancestors. In Montana, for example, PISL can be studied and taken in fulfillment of college and university second or third language requirements.

The fact that indigenous languages have survived and continue to be learned and used is remarkable, especially considering the pressures for linguistic and cultural assimilation historically imposed on Native groups—e.g., to acquire and use the dominant spoken or signed languages of the larger society or community. In former times, education policies prohibited the use of native spoken and signed languages, which were further discouraged from being used in residential school settings. A consequence of intensive language and cultural contact has been a shift towards English as the dominant or primary language of most individuals from American Indian backgrounds. Furthermore, deaf members of Native communities in the US and Canada generally attend schools for the deaf and are predominately learning American Sign Language (ASL) instead of traditional varieties Indian Sign Language (*ibid*). Further documentary linguistic work is critical to revitalization efforts and to advance our knowledge of the cognitive, cultural, and linguistic underpinnings of indigenous sign language.

Plains cultural and linguistic groups have been identified as the most adept signers; at the same time, PISL dialects and other sign language varieties have been documented among some indigenous signing communities bordering and in contact with the Plains Indian cultural groups (e.g., Plateau/Great Basin and Southwestern Indian communities). While the PISL variety or complex served a central role as one of the historical lingua francas of the Great Plains and cultural areas bordering this geographic region, we also find other American Indian signed language varieties still being used beyond the Great Plains.

For example, the PI has conducted extensive fieldwork and collaborated with other researchers in the quest to identify dialects of PISL and distinct varieties of American Indigenous sign language. Along these research lines, sign language researchers have conducted fieldwork among signing communities like the Inuit-Nunavut (Arctic, Canada), Navajo (Arizona), Keresan Pueblo (New Mexico), Maya of western Guatemala and the Yucatán, Chiapas, and Oaxaca states/regions of Mexico (Mesoamerica), and other Native communities (e.g., Davis 2010, 2012; Fox Tree 2009; Schuit 2012). Further interdisciplinary research involving linguists and anthropologists is needed to determine the current linguistic status of these indigenous sign language varieties and to illuminate the linguistic properties and degree of genetic relatedness

among the varieties and types of American Indigenous sign language documented thus far. By transforming the PISL documentary materials into a more readily and widely accessible corpus for linguistic studies, the project could serve as a model for others and would encourage further collaboration and sharing of linguistic data among scholars. The chief objectives of the proposed project are threefold: first, to transform the previously collected Plains Indian Sign Language (PISL) documentary linguistic materials into a digital corpus that will be accessible to local Native American communities, scholars of linguistics and anthropology, and related disciplines; secondly, to further collaboration with American Indians from different nations who are learning and using indigenous sign language varieties in order to identify the number of remaining signers and to generate more comprehensive linguistic descriptions at all levels of the language (patterns of use, lexicon, and grammar); and thirdly, to disseminate project outcomes to Native American communities, broader audiences, and researchers of indigenous and endangered languages; thus, increasing awareness about sign language in intertribal and international communities.

Preliminary Linguistic Findings

To summarize its current linguistic status, PISL is an endangered language, having been sustained over the past several generations primarily by (1) tribal elders, to save the language by its continued use and by teaching it to their children and grandchildren, and by (2) deaf tribal members, who have found it a fluent means of communication within their native communities.

With previous NSF-support (reported in section below), the PI has been documenting that PISL continues to be used today within Plains tribal groups and that it also continues to function as an intertribal lingua franca. Documentary linguistic work remains critical to the survival of PISL and to advance our knowledge of the cognitive, cultural, and linguistic underpinnings of indigenous and village signed language varieties. The PI has a long history of working closely with Native signers and other scholars to investigate the linguistic underpinnings and current sociolinguistic status of PISL; describing its linguistic nature and structure; and, conducting comparative linguistic analyses of varieties and dialects. Although the findings reported are preliminary, these studies offer valuable insights about PISL-ASL contact, signed language-spoken language contact, and the conveyance of human language in both signed and spoken modalities, and the linguistic underpinnings of signed and spoken languages.

The documentary linguistic fieldwork carried out thus far offers strong evidence for a history of native/first language acquisition and that PISL was acquired natively and signed fluently by both deaf and hearing American Indians in some tribes and nations. For example, we would not see PISL being used in this number of linguistic domains and adhering to linguistic rules if had it not been acquired and transmitted natively. Although some of the most fluent signers were deaf or had deaf family members, many other hearing community members also acquired PISL or its antecedents to fulfill a wide variety of discourse functions and purposes—ranging from in-group narratives to international communication.

The PI has submitted manuscripts for peer-reviewed publications to report these preliminary findings. While further linguistic analyses and collaborative research with graduate students and other scholars of linguistics, anthropology, computational linguistics, and cognitive sciences are anticipated from the proposed corpus linguistics project; preliminary, we are finding that:

- PISL is a full-fledged language that can be analyzed at all linguistic levels--phonemic, morphemic, syntactic, semantic, and pragmatic. It is typologically similar to other sign languages of the world, characterized by certain spatial-grammatical features, verb inflections, and classifier-like constructions (depicting signs in the linguistic argot).

- Tense is indicated by words comparable to adverbs – e.g., today, tomorrow, yesterday, since, etc. When occurring, time indicators are at the beginning or ending of phrases or sentences. We have also identified other lexical and grammatical features – e.g., question formation, negation, pronominal forms, and possession. There are many examples of rich use of metaphor in the PISL corpus including metonyms, hyponyms, and hypernyms.
- The data collected and analyzed thus far show PISL to have basic SOV word order (generally considered the most common among the world's languages) and, correspondingly, head-initial directionality. While seemingly predominant, this is not the only word order type evident in PISL. Further syntactic analysis of further grammatical markers is ongoing and the proposed corpus linguistics project will bolster these efforts.
- The morpho-syntactic processes identified thus far in PISL are highly productive, generating distinct lexical categories, such as nouns, verbs, adjectives, adverbs, etc.; compounds, polysemous forms, and a variety of predicates composed of indicating, depicting, and pointing signs common among sign languages. Over one thousand core PISL lexicon items have been identified and digitized from archival sources and recent fieldwork. With further support, the documentary linguistics materials of the corpus linguistics project could form the basis for an online dictionary and grammar lessons.

In brief, the PI has been conducting two types of comparative linguistic approaches: 1) PISL compared with other signed languages, and 2) PISL compared with spoken American Indian languages in the same environment (forthcoming). While further synchronic and diachronic studies are anticipated as part of the proposed project, we find that PISL is a distinct language from ASL (not genetically related). Although, Deaf Native signers code-switch between PISL (their first sign language) and ASL (their second sign language). Thus, the proposed corpus linguistics project will enable the PI and other scholars from linguistics and multidisciplinary backgrounds to compare the linguistic properties of PISL with the ambient indigenous spoken languages, which are typically polysynthetic. Paradoxically, sign languages around the world have been found to use relatively few affixes; although, they are still considered morphologically very rich (Sandler, Meir, Padden, and Aronoff 2005; Sandler and Lillo-Martin 2006). To advance further linguistic analyses, the project is examining and describing the multiple linguistic levels and sociolinguistic domains of PISL; e.g., syntax (grammar), lexicon (inventory of PISL signs), and comparative analyses to determine dialect differences and discourse types.

For example, following methods established in previous lexical similarity studies of signed languages, the PI (Davis *ibid*) has taken into account two main causes of historical relatedness: genetic and lexical borrowing/language contact. Comparisons of American Indian signs documented over a two hundred year time span (1800s – 2000s), have resulted in an 80 – 90 percent range of lexical similarity between historical and contemporary PISL varieties— suggesting these are dialects of the same language. In contrast, PISL and ASL comparisons have consistently resulted in lexical similarity in the fifty percent range.



Figure 1. Comparing historical (19th Century) and modern (21st Century) PISL lexicon

The documentary linguistic materials to be transformed as part of the proposed corpus linguistics project will give broader audiences the first-hand opportunity to explore first and second language acquisition among deaf and hearing tribal members, who use PISL in traditional roles, to converse with each other and with deaf family members, or as an alternative to speaking English or a native language. The project will make this important part of American Indian linguistic and cultural heritage accessible to broader audiences and to students and scholars most interested in studying these types and varieties of indigenous and village signed languages. Moreover, the project is well positioned at the University of Tennessee and will build

upon previously funded NSF-DEL fieldwork. UT offers an outstanding (tier-one) infrastructure and the project will utilize UT facilities, equipment, and other resources. The PI's office and existing sign language lab are equipped with the computers and other innovative technologies to be used during this project (e.g., ELAN and other resources). Digital video recording and editing equipment are readily available through the PI's College Media Services and University Studio Services in the University Library. The Library provides state-of-the-art digital recording and editing equipment. Sample of the work produced thus far can be viewed at the PISL research website developed by the PI at UTK: <http://pislresearch.com/>

Work Plan and Methods Employed

The work to be done by this NSF-NEH fellowship project will be scheduled during two major time periods, comprising a total period of 12-months of full-time work on the project:

Phase one will be carried out from Sept 1, 2014 to May 31, 2015 (nine-months)

Phase two will be completed from June 1, 2016 to August 31, 2016 (three-months)

During this NEH-NSF-DEL fellowship period, the PI will transform an extensive collection of PISL and other indigenous language documentary material into a digital corpus that is accessible to local Native American communities and scholars of linguistics and anthropology, applied and computational linguistics, psycholinguistics, sociolinguistics, and related disciplines.

During Phase One, the PI will concentrate on preparing the previously collected material for the digital corpus. The project will utilize annotation software, such as Eudico Language Annotator (ELAN), to further analyze the documentary films of indigenous sign language in the corpus and to produce subtitles for film vignettes to be featured. ELAN transcription and notation are labor intensive. For example, each minute of video recorded sign language requires approximately an hour of transcription work and involves several types of metadata, levels of linguistic analysis, and general annotation work. 50 hours of video recorded or digitized film material requires approximately 1,000 hours of transcription, annotation, subtitling and captioning work.

In addition, around 100 hours of film and video-recorded data, and over one thousand core PISL lexicon items have been identified and digitized. The PI has been collecting these materials since his post-doctoral fieldwork in the early 1990s. The project's indigenous sign language materials come from archival sources and films of naturally occurring discourse during recent NSF supported fieldwork. By phase two, the documentary linguistics materials of the corpus linguistics project will be used to develop a prototype for an online dictionary and grammar lessons.

The project will use emergent technologies to produce captions, voice-over, slow motion and detailed annotations for as much of the corpus as possible. Other researchers will be encouraged to participate and to use the corpus for comparative linguistic and descriptive purposes. The project will utilize innovative/emergent technologies to manage and analyze the AISL digital corpus. Digital technologies like FinalCut Pro, QuickTime, iMovie, iDVD and ELAN will be used to digitize, archive, annotate, and distribute PISL documentary materials. Most importantly, the corpus linguistics project will adhere to published best practices and protocols for storing, archiving, distributing, and annotating of footage and related documentary materials.

The project will create .ssa files for translations as well as glosses, so that the film is both accessible and analyzable by people unfamiliar with the language. All files will be saved in their raw form and uploaded/imported to digital form and contained in three places – two external hard drives for searching and working and one for archiving to be kept in a separate place to be used only when saving a new or amended file. File types will include the original output of any

device, as well as conversion according to the standards put forth by Electronic Metadata of Endangered Language Documentation (E-MELD) best practices guide.

Two main methods will be used to organize and store the collection of documentary linguistic materials comprising the PISL digital corpus: 1) by subject and then by file type and 2) by date and then by file type. Additionally, the project will use a standard uniform system of labeling all files based on category, date, people, content, and file type. This will allow users to accurately find any data file with a complete reference from the digital corpus. This two-method system, as well as the naming conventions developed by the project, will increase interoperability for the project to share and disseminate material with other scholars and projects and allow for easy reference checking.

The PI has already obtained IRB approval to develop the proposed digital corpus and has a 25 year history of working closely with key stakeholders from the Indian Nations, native communities, and institutions involved. Clips/images containing only those who have signed a full release with informed consent will be uploaded to the corpus and featured on the research website; clips/images containing people who have chosen a more limited option will be shared only among linguists and other researchers without public access; and clips/images containing those wishing to have their participation remain anonymous will not be shared with anyone and will be used only in the PI's own linguistic studies.

Watermarks will be included in all media files produced by the project, information concerning sharing and dispersing the materials will also accompany any materials disseminated. In the process of creating greater access to PISL documentary materials, the project will ask that if someone wishes to use the work, they should request a direct copy from the corpus linguistic project and properly cite the data if they use any material produced by the project.

The project will adhere to well established protocols to upload/import any and all data and media produced by the project; e.g., saving the files to two external hard drives for working and searching as well another external hard drive for archiving. The project's dedicated external and internal hard drive devices will be secured and maintained indefinitely in UT's sign language lab; and the PI's college and university have generously offered the project enough server space to maintain the corpus. The PI will work with the university digital librarian to create a surrogate digital collection for the project and will be submitting much of the documentary materials produced by the digital corpus linguistics project to the world's most reputable language archives. Thus, the PISL documentary materials and proposed digital archive will be secure and well maintained to the greatest extent possible. .

To ensure the greatest possible sustainability, the PI will be preparing much of the rare and one of a kind documentary material produced by the project to submit to the world's most reputable language archives – e.g., the Endangered Languages Archival Repository (SOAS, University of London), Rosetta Project (Stanford University), and the Smithsonian's National Anthropological Archive/Human Film Studies Archive. In the process, the PI will be consulting with the archivists at these digital repositories for guidance. In brief, the work of this project and all research outcomes will adhere to the highest standards advanced by NSF and published by professional organizations – e.g., E-MELD, Linguistic Society of America, American Anthropological Association, among others.

All phases of the project will involve collaboration with American Indians from different nations who are learning and using indigenous sign language varieties and help identify additional Native signers, as well as generating more comprehensive linguistic descriptions at all levels of the language (patterns of use, lexicon, and grammar). Major findings will be disseminated via

the corpus linguistics project; and made accessible to Native American communities, broader audiences, and researchers of indigenous and endangered languages, encouraging further scholarship and increasing awareness about sign language in intertribal and international communities. The PI will collaborate with other researchers and encourage comparative linguistic studies of distinct varieties of American Indigenous sign language and other types of sign language (e.g., urban and village types of signing). The PI will prepare research papers to submit to research journals and for international presentations (e.g., LSA, MLA, AAA, and NSF-NEH venues). In brief, the fellowship will enable the PI to work full-time for 12 months to integrate, systematize, and make the linguistic findings widely available according to the objectives, methods, and work details outlined herein.

Significance and Need

The proposed digital corpus linguistics project will feature the documentation of language, culture, geography, and ethno-histories, encompassing historical and contemporary uses of American indigenous signed and spoken languages. It is grounded in documentary linguistics, intensive ethnographic fieldwork, and extensive archival research. Thus, the PISL digital corpus encompasses rare and fragile legacy materials documenting traditional uses of AISL, cultural traditions, and artifacts. The methods and emergent technologies employed are relevant to multiple disciplines and many audiences.

The PISL project aims to create digitized information of indigenous signed languages of Native Americans through the computational analysis of a digital corpus and disseminate the information in a meaningful way to researchers in fields such as anthropology, linguistics, and semiotics. Cultural, cognitive, and linguistics underpinnings of indigenous signed language varieties are of scientific value and therefore should be preserved for current and future generations to research. The inherent knowledge of expert/skilled Native American signers is endangered; therefore, involving members of Native American communities and raising awareness about the possible extinction of indigenous languages will generate interest in the collaborative effort of revitalization and preservation between the Native American signers and researchers.

For these purposes, the project will be transforming hundreds of hours of video, digitizing the footage for long-term preservation, and for computational linguistic analysis. To ensure these materials are rendered more accessible, the PI will be using state of the art technologies for cataloguing, annotating, transcribing, translating, and subtitling/captioning. These documentary films and educational materials (such as vocabulary lists and grammar lessons) will help mediate the dramatic decline in native or indigenous signed and spoken languages, raise awareness language endangerment, and enhance the scholarship of others. The proposed Corpus Linguistics project could become one of the largest known collections of American Indian signed and spoken documentary materials. The corpus could also be expanded to include other indigenous and village sign languages. Most importantly, the project involves members of culturally and linguistically diverse communities and prepares students to be involved with multicultural/multiethnic communities globally.

Prior documentation and description of PISL linguistic properties had been carried out by anthropologists in the mid-1900s, but involved few women and did not include Native American Deaf signers. Whereas earlier researchers had focused on the alternative or ad-hoc role of signing among hearing members of indigenous communities, the PI has been examining both alternative and primary patterns of acquisition and use among deaf and hearing community members. Previously, indigenous sign language was generally overlooked, understudied, and often considered a primitive, emblematic or dying language.

Further research that brings together signed and spoken language linguists and PISL community members is needed. The proposed project will engender such collaboration and build upon the linguistic data collected during recent NSF-DEL supported fieldwork (2009 – 2012) that made possible the first fieldwork to document PISL in more than 50 years, and the first to include the signing of Native American women and deaf tribal members.

Results from Previous NSF Support

During intensive ethnographic fieldwork, meetings, and conference (NSF-BCS-DEL support; 2009 – 2012) the PI conducted the following documentary linguistic activities:

2009 fieldwork documented PISL use among the Northern Cheyenne [Tse'tsehestahese] members of the Algonquian language family of southeastern Montana, including three Siouan language groups of northern Montana: Assiniboine [A'aniinen], Nakoda and Lak'hóta [Tetonwan], and Mandan-Hidasta [Moennitarri] at various locations, including tribal colleges.

2010 DEL fieldwork, meetings, and workshops on the N. Cheyenne Reservation and Chief Dull Knife College to document the sign language of the Crow [Apsaalooke] a Siouan people of southeastern Montana, the N. Cheyenne [Tse'tsehestahese] also of southeastern MT, and the Blackfeet [Aamsskáápipikani] an Algonquian people of Northern MT.

2012 Conference at the Blackfeet College and Reservation included the Crow [Apsaalooke] and Northern Cheyenne [Tse'tsehestahese], as well as members from the four tribes comprising the Blackfoot Nation (aka Blackfoot Confederacy or Niitsítapi): namely, the Káínaa [Blood], Aapátóhsipikáni [Northern Piegan], and Aamsskáápipikani [Southern Piegan or Montana Blackfeet], and Siksiká [Alberta, Canada Blackfoot] .

- **NSF Research Grant (BCS-1160604)**, \$56,106.00 awarded to Jeffrey Davis, University of Tennessee (PI)

Project title: American Indian Sign Language Conference 2012 (April 2012 – March 2014)

The 2012 American Indian Sign Language NSF-DEL Conference was the first time in over eighty years that native signers from different nations had convened to share their Indian Sign Language skills and stories. It featured the first to be carried out in over 50 years to concentrate on the linguistic status of American Indian Sign Language. During the conference, the project filmed a large amount of signed and spoken language data from more than twenty-five native signers from among Northern Cheyenne [Tse'tsehestahese], Blackfeet [Amskapi Pikuni], Crow [Apsaalooke], Assiniboine [A'aniinen], Nakoda, and Lak'hóta [Tetonwan] Nations. Conference participants reported during the conference that they know of at least one hundred additional signers in the US and Canada.

To organize the DEL conference, Dr. Jeffrey Davis (PI), Professor of Sign Language Linguistics, The University of Tennessee collaborated closely with the Friends of the Museum of the Plains Indian and Blackfeet Community College. All stages of the 2012 Conference (pre/during/post) involved stakeholders from Native communities with a history of sign language and Tribal Colleges such as, Blackfeet Community College, Chief Dull Knife College, Little Big Horn College, and Fort Belknap College, as well as with individuals at the University of Montana and Montana State University. In brief, the 2012 NSF-DEL Conference held on the Blackfeet Reservation in Browning, MT was the first occasion in several generations that AISL signers

convened to share their knowledge of Native American histories, cultures, and languages; both signed and spoken documentation was accomplished.

Over 300 individuals attended the conference representing at least 20 tribes from the U. S. and Canada; concurrently, the NSF-funded project identified, filmed, and documented a range of dialectical differences from the most adept to novice signers. Presentations during the conference covered a wide range of culturally relevant subjects and different types of discourse. At least a dozen Indian signers gave presentations that were filmed during the conference, resulting to a major one of a kind language corpus being produced. Most significantly, the conference identified and brought together individuals who still know, use, or remember AISL from several sovereign Indian nations in the U.S. and Canada.

The Conference featured AISL presentations and workshops for signers of all ages and skill levels (youth to elders; novice to adept); and roundtable/sign language circle discussions with AISL signers and educators about signed communication in traditional Native societies among both hearing and non-hearing Native peoples. The conference program included tribal variations in signs and signed phrases, with traditional stories. It involved Native signers describing and discussing in sign and spoken language the artifacts in the Museum of the Plains Indian and their place in traditional Native life in the region. The conference engaged presenters/leaders who are fluent signers and recognized as such among the Indian nations, reservations, and communities involved. All conference sessions were filmed and recorded for documentary linguistic purposes.

- **NSF Research Grant (BCS-0853665)**, \$120,210.00 awarded to Jeffrey Davis, University of Tennessee (PI) and M. McKay-Cody, William Woods University (co-PI)
Period of support: Sept 1, 2009 - August 31, 2010

Project title: “EPSCOR: Plains Indian Sign Language: Fieldwork and Digital Archive Project.”

With support of NSF’s DEL program, co-PIs and sign language linguists Dr. Jeffrey Davis (University of Tennessee) and Melanie McKay-Cody (Chickamauga Cherokee/Choctaw, William Woods University) conducted the first fieldwork in over 50 years to focus on the linguistic status of Plains Indian Sign Language (PISL). During the one-year DEL funded project (2009 – 2010), the CPIs identified and filmed more than 25 native signers, including women and deaf tribal members, from among the Northern Cheyenne, Crow, Blackfeet, and Assiniboine.

The research project documented the current sociolinguistic status of PISL; conducted comparative linguistic analyses of PISL varieties; and, described the linguistic nature and structure of PISL. This fieldwork has produced an extensive inventory of PISL lexical signs; collected and digitized previously unknown legacy materials; provided annotations and captions of various documentary materials and films; and, contributed to the revitalization of PISL. The project is making these documentary materials available to communities where PISL once thrived; and, ensuring that this important yet often overlooked part of American Indian linguistic and cultural heritage is accessible to broader audiences. The project’s findings have been published in peer-reviewed publications and integrated into the project’s digital archive of American Indian Sign Language documentary materials previously collected in collaboration with the Smithsonian’s National Anthropological Archives.

- **NSF-funded (BCS-1027735)** \$49,669.00 awarded to Jeffrey Davis, University of Tennessee (PI) and Melanie McKay-Cody, William Woods University (co-PI)

Period of support: 07/01/10 - 6/30/11

Project title: Plains Indian Sign Language DEL Project: Summer 2010 Meeting and Workshops

The 2010 Plains Indian Sign Language (PISL) Documentation Workshops was held on the Northern Cheyenne reservation, August 11 – 15, 2010. The CPIs collaborated with PISL stakeholders from American Indian communities and tribal colleges to organize, publicize, and conduct this historic four-day meeting. Thirty participants registered for the workshops, which brought together sign language linguists and Deaf and American Indian individuals for the first time of which we are aware.

In collaboration with Chief Dull Knife College, the project filmed more than one dozen PISL signers. Working with Native signers, the CPIs are transcribing/glossing and translating PISL using language documentation technologies (e.g. ELAN); and, identifying lexical-grammatical categories and conducting comparative syntactic analyses that will contribute to the compilation of a PISL dictionary and descriptions of its grammar.

The summer 2010 meeting and workshops demonstrated that Indian Sign Language continues to serve a role as an intertribal *signed lingua franca*. We believe this finding that it is still used as a lingua franca, ties well into why the proposed 2012 Conference as tribal members from separate nations are involved and the current use of AISL was demonstrated and videotaped. Over twenty hours of videotaped data were produced during the meeting, which have been digitized and secured in the project's digital archive maintained at UT. The filmed and photographed highlights of this meeting and workshops are being integrated into the project's website/online digital archive of American Indian sign language

- **NSF Research Grant (BCS-0853665)**, \$19,845.00 supplemental award to Jeffrey Davis, University of Tennessee (PI)

Period of support: Sept 1, 2010 - August 31, 2011

Supplemental Award: "EPSCOR: Plains Indian Sign Language: Fieldwork and Digital Archive Project."

Davis (PI) worked with Native American PISL signing experts; and mentored graduate and undergraduate linguistic students trained in RCR protocols and ELAN notation technologies to provide translations, linguistic transcriptions, and captions for the PISL corpus filmed/collected during 2009 – 2010 fieldwork.

In brief, the UT PI's NSF-funded AISL research is highly collaborative and productive—involving American Indians, deaf Natives, and others in linguistic research, training, and teaching. The research is informed by Davis' background in sign language, linguistics, interpretation, and translation, as well as many years in the field as researchers and educators.

Research website and blog maintained by the PISL project: <http://pislresearch.com/>

NSF's *Science Nation* special on-line report featuring the work of the project: http://www.nsf.gov/news/special_reports/science_nation/indianhandtalk.jsp

Publications produced with NSF support:

Davis, J. 2013. Plains Indian Sign Language: The legacy of documentary linguistics. In Jones, M.C., & Ogilvie, S. (Eds.) *Keeping languages alive: Documentation, pedagogy, and revitalization*. Cambridge: Cambridge University Press.

----- 2013. American Indian Sign Language (AISL) Digital Corpus. In R. McBride & M. Searson (Eds.), *Proceedings of Society for Information Technology & Teacher Education International Conference 2013* (pp. 1503-1508). Chesapeake, VA: AACE. URL: <http://www.editlib.org/p/48339/>.

----- 2011. Discourse features of American Indian Sign Language. In C. Roy (Ed.), *Discourse in Signed Languages; Sociolinguistics in Deaf Communities, Volume 17*. Washington, DC: Gallaudet University Press (pp. 179-217).

----- 2010. *Hand Talk: Sign Language among American Indian Nations*. Cambridge University Press, Cambridge.

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----- 2006. A Historical Linguistic Account of Sign Language among North American Indians. In *Multilingualism and Sign Languages; From the Great Plains to Australia*, edited by Ceil Lucas, pp. 2-35. Gallaudet University Press, Washington.

Davis, Jeffrey E., and Melanie McKay-Cody. 2010. Signed Languages of American Indian Communities: Considerations for Interpreting Work and Research. In *Interpreting in Multilingual and Multicultural Contexts*, edited by Rachel Locker McKee and Jeffrey E. Davis. Gallaudet University Press, Washington.

Native PISL signers have generally recognized and embraced the need to record and preserve their sign language traditions and cultural practices for this and future generations. As long as the documentary materials are studied and treated with respect when made available outside of American Indian communities. The project will adhere to the highest standards for storing, archiving, distributing, and annotating the linguistic materials. The PI brings to the project a strong background collaborating with Native American community leaders and stakeholders.

Intellectual Merit

PISL and other indigenous language varieties in the corpus are considered highly endangered. Additional documentary linguistic work is critical to advance our knowledge of the cognitive, cultural, and linguistic underpinnings of signed language and to the revitalization of these indigenous languages. The project will generate further linguistic descriptions to be published in peer-reviewed venues and documentary linguistic findings integrated into the corpus developed and maintained by the project. The corpus will include rare and irreplaceable documentary materials of several American indigenous languages; thus, offering individuals and audiences the opportunity to explore Native American languages and cultures. This corpus linguistics project will utilize the latest technologies to show how language conveyance spans multiple linguistic modalities: written, signed, and spoken.

Broader Impacts

Linguistic findings, ranging from lexical-grammatical descriptions to discourse functions and acquisition, will be integrated into the digital corpus and website for the project. This will be of great interest to members of Native communities where signed language like PISL once thrived; to broader audiences, and researchers of linguistics, anthropology, and other scholars documenting signed and spoken languages. This corpus could be one of the largest known collections of American Indian signed and spoken documentary materials, and could also be expanded to include other indigenous and village sign languages. The project involves members of culturally and linguistically diverse communities and prepares students to be involved with multicultural/multiethnic communities globally.

The corpus will contribute to training students in field methods, linguistic analyses, emergent technologies, and engage members of Native communities in documenting and revitalizing their languages. Though particularly well suited for sign language, the linguistic technologies and applied pedagogies of this project are relevant to multiple disciplines and to both signed and spoken languages. Finally, the project will offer dissemination of research outcomes to as broad an audience as possible and contribute to indigenous sign language preservation, revitalization, while fostering greater anthropological, linguistic, and scientific interdisciplinary research.

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