

# Narratives of Technology and Self-Determination in the STARPAHC Project

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## Introduction

From 1974 to 1978, the 2.7 million-acre O'odham Nation became a demonstration of space technology on a grand scale. The project, known as "Space Technology Applied to Advanced Rural Papago Health Care" (STARPAHC) brought telemedicine to the reservation as a potential answer for healthcare accessibility challenges faced by the nation's rural communities. Microwave relays and high-power telephone lines streamed information across the desert, connecting O'odham patients to IHS physicians at the Sells Indian Health Service (IHS) Hospital. STARPAHC was a collaboration between the National Aeronautics and Space Administration (NASA), the IHS, and the O'odham Nation. STARPAHC's space-age image was projected globally as an answer to rural health care challenges. Delegates from Italy and Iran saw the project as a model for how to provide healthcare for their own rural and isolated communities.<sup>1</sup> Despite the project's publicity, it only persisted for four years and in less than 10-years the "space technology" that gave STARPAHC its name became junk taking up space in the Sells IHS facilities.<sup>2</sup> What exactly STARPAHC said about technology was intensely contested; was it a demonstration of how space technology could be used by tribes, or how tribes could be used for America's space program?

While working on this research project, I had the opportunity to explain its premise to a friend, their judgement of STARPAHC was influential in the course of this project. In early October of 2019, I participated in the pilgrimage to *Ma:lina*, or *Magdalena de Kino*. During a break on our walk, I explained to a friend about the STARPAHC project

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Victor Braitberg provided editing and revision assistance throughout this project and helped to direct me towards resources and information. Victor is an Assistant Professor of Anthropology and the Honors College at the University of Arizona.

<sup>1</sup>This paper makes extensive use of the STARPAHC archive at the University of Arizona Health Sciences Library. All archival material is from: STARPAHC archive: records from the Space Technology Applied to Rural Papago Advanced Health Care project, 1970-1991 (bulk 1972-1978). Arizona Archive of Telemedicine; University of Arizona. Health Sciences Library: Arizona Telemedicine Program; 1970.

Tucson Daily Citizen Article "Iran Physicians study Papago Health Project." March 12, 1975. Box 19, Folder 6.5.

9.3.22. Letter from John A. Volpe of the University of Rome to Dr. James Justice, December 12<sup>th</sup>, 1974.

<sup>2</sup> Letter from Ernest J. Johnson to Darrell Rumley, IHS administrative officer. Dated September 27<sup>th</sup>, 1985. Box 19, Folder 6.5

in less words than I have here. Their response was simply the phrase “guinea pigs.” This term that described STARPAHC by their critics during its operational period as well! Even for someone who had never heard of the project, despite having lived on the reservation and was aware of the complexities of reservation politics, the imbalance of power between NASA and the tribe led to the immediate assumption that the project was exploitative. Even with a great deal of O’odham involvement in the project’s public image, as well as its day-to-day operation, the first reflex is often to see the program as an exploitative experiment on the O’odham. This paper examines the narrative conflict over STARPAHC throughout its operational period. This paper argues that the Indian Health Service and O’odham Executive Health Staff fought a pervasive assumption that the project was turning the O’odham into “guinea pigs,” a narrative that was propagated by diverse media outlets and aided by NASA’s ambiguous stance on the project, which ultimately led to the project’s dissolution and invisibility some 50-years later.



*Figure 1* The logo of the STARPAHC Project. From Simpson, Andrew. T. 2013. “A Brief History of NASA’s Contributions to Telemedicine.” From <https://www.nasa.gov/content/a-brief-history-of-nasa-s-contributions-to-telemedicine/>

## Narratives of Technology and Self-Determination

### Self-Determination in the Indian Health Service

STARPAHC's middling results in addressing O'odham health issues,<sup>3</sup> combined with its extremely high cost (a primary cause of its short lifespan) would appear to designate it as a failure. STARPAHC was more than an attempt to address O'odham health issues; it was also an attempt to demonstrate O'odham self-determination to solve their own health issues. O'odham and IHS STARPAHC administrators repeatedly worked to promote these ideals through the project's public image.

### Early Self-Determination and STARPAHC

In the early 1970s, the federal government experienced a sudden change its relationship to Indian nations. Spurred by increased Indian activism, the failures of the Indian termination policy of the 1950s and 60s, and by a recognition of centuries of mistreatment, President Richard Nixon proposed "Indian Self-Determination" as both a series of policies and as the new ideology of federal-Indian affairs.<sup>4</sup> Nixon outlined his ideals for a new Indian policy in his 1970 "Indian Message to Congress:"

"In my judgement, it should be up to the Indian tribe to determine whether it is willing and able to assume administrative responsibility for a service program which is presently administered by a federal Agency. To this end, I am proposing legislation which would empower a tribe or a group of tribes or any other Indian community to take control or operation of a Federally funded and administered programs in the Department of Interior and the Department of Health, Education, and Welfare whenever the tribal council or comparable community governing group voted to do so."<sup>5</sup>

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<sup>3</sup> The degree of success that STARPAHC achieved in its medical goals is somewhat unclear. The 1975 paper "Provider Attitudes Towards Telemedicine: Preliminary Findings," (10.3.30) which recorded the opinions of 60 healthcare providers working with STARPAHC. Their conclusions were that STARPAHC certainly increased availability of healthcare, but they thought that similar improvements could have been achieved with more general infrastructure improvements and at less cost. A second report, "Changes in Utilization of Health Services Before and After STARPAHC Services Began," from Nov 4<sup>th</sup>, 1976 (12.3.48) makes a similar finding. This report statistically suggests that the MHU mostly fulfilled the hole in medical service left by the closing of the western Pisinemo clinic.

<sup>4</sup> Castile, George Pierre. 1998. *To Show Heart: Native American Self-Determination and Federal Indian Policy, 1960-1975*. Tucson: University of Arizona Press. Pg. 178.

<sup>5</sup> Castile, *To Show Heart*, 92. The speech included many other elements in which Nixon proposed specific legislation regarding the ongoing Blue Lake land dispute (93), requesting the repeal of Termination policy (92), and proposing a "Revolving Loan Fund" for American Indians (94). However, this section of the speech makes it the clearest as to the general principles Nixon hoped his proposed legislation would achieve.

Regarding Indian Health Specifically, Nixon stated “I will request the allocation of an additional \$10 million for Indian Health programs... These and other Indian health programs will be most effective if more Indians are involved in running them.”<sup>6</sup>

These outlines the fundamental principles of self-determination as a federal policy. Namely, that Indian tribes could choose to take control and responsibility for programs within their community. Importantly, the federal policy only mandated that tribes have an option in administering programs on their reservations; longstanding federally administered programs could continue if the Indian community did not wish to direct them. Although much of Nixon’s speech was concerned with the Bureau of Indian Affairs, his brief statement about Indian health made it clear he envisioned these same principles applying to the Indian Health Service as well. Nixon’s brief outline of the New Federal Indian Policy, and the lack of clear policy precedent led to a great diversity in how Self-Determination became implemented within federal agencies.

The Indian Health Service (IHS) implemented its own interpretation of self-determination around Nixon’s address, even without federal guidelines or policy precedents.<sup>7</sup> The IHS strategy to realize self-determination in this period is well recorded in the 1974 study “of the Indian Health Service and Indian Tribal Involvement” by Daniel S. Press et al. Press’s report was contracted by the Department of Health (who oversaw the IHS) to study how self-determination was being implemented between the IHS and tribal governments. Press’s report found that the IHS functioned practically independently from the Department of Health.<sup>8</sup> Press’s findings were made through interviews with IHS staff on a variety of levels. Press found that IHS officials strongly believed that “pushing tribal takeover is a violation of the whole concept of self-determination” because Tribes should be able to choose for themselves how much involvement they have in health programs.<sup>9</sup> The IHS solution to increase direct tribal involvement in health programs without forcing unwanted involvement was through the development of Indian Health Boards (IHBs).<sup>10</sup> IHBs were formed of tribal members and

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<sup>6</sup> Castile, *To Show Heart*, 94.

<sup>7</sup> Press et al. 1974. “A Study of the Indian Health Service and Indian Tribal Involvement in Health.” A contracted study by the Department of Health Education, and Welfare, Washington D.C. Office of the Secretary. Report no. HEW-OS-72-209. 65.

Press’s report was intended to measure the effective implementation of self-determination in the Indian Health Service in the early 1970s.

<sup>8</sup> Press et al., “Study of IHS and Indian Tribal Involvement,” 13.

<sup>9</sup> Press et al., 15.

<sup>10</sup> Press et al. ,11.

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were intended to collaborate with local IHS providers (known as Service Units) to provide feedback and improvement suggestions on health programs. Problematically, many tribes lacked individuals with the required experience to administer these new projects. Many IHB staff members were not well versed enough with western medical practice to participate in decision-making regarding these programs.

The IHS Office of Research and Development (ORD) set out to address the failures of the IHB systems by funding. The ORD was one of eight Area Offices, which had been “carved” out of the larger Phoenix Area office by IHS visionary Stu Rabeau.<sup>11</sup> The ORD, unlike other area offices, was particularly dedicated to innovating Indian healthcare through collaboration with the O’odham tribe, who was its primary partner in healthcare delivery. An early project which the ORD directed was the Community Health Medic (CHM) training program at the Desert Willow facility near Tucson. Desert Willow trained CHMs, who were intended as a uniquely IHS form of medical official.<sup>12</sup> CHMs were tribal members who were trained to a similar standard as a Physician’s Assistant but were also trained and recruited for their ability to function as community leaders and intermediaries between a western medical perspective and the tribe’s they served.<sup>13</sup> CHM’s would later become an important part of the STARPAHC project, both in its execution and its public image.

The ORD during this period invested significant resources towards developing Indian Health Boards.<sup>14</sup> One IHB that received significant support from the ORD was the Papago Executive Health Staff (EHS), which served the O’odham (then called Papago) Nation in Southern Arizona.<sup>15</sup> The EHS was exceptional among tribal health boards at this time because it was formed entirely out of O’odham Health

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<sup>11</sup> Braitberg, 20. Although the ORD was originally named the “Tucson Area” and did not attain the ORD designation until 1969 when Rabeau stepped down from director of the Indian Health Service to become ORD director (Braitberg 23).

<sup>12</sup> More information about the Community Health Medic can be found in the “Community Health Medic of the Indian Health Service Progress Report as of January 1973.” The document can be found in Box 19, Folder 6.3, but is also available in entirety online through google books:  
[https://books.google.com/books?id=LBJb9UGSeEoC&pg=PP2&lpg=PP2&dq=Community+health+medic+IHS&source=bl&ots=L3S7I2EXwE&sig=ACfU3U1iR5Xr-vihbic11OpeWKVz5mXxBQ&hl=en&ppis=\\_e&sa=X&ved=2ahUKEwjM7oierbjmAhUTqp4KHtYDAT8Q6AEwDXoECAoQAQ#v=onepage&q&f=false](https://books.google.com/books?id=LBJb9UGSeEoC&pg=PP2&lpg=PP2&dq=Community+health+medic+IHS&source=bl&ots=L3S7I2EXwE&sig=ACfU3U1iR5Xr-vihbic11OpeWKVz5mXxBQ&hl=en&ppis=_e&sa=X&ved=2ahUKEwjM7oierbjmAhUTqp4KHtYDAT8Q6AEwDXoECAoQAQ#v=onepage&q&f=false)

<sup>13</sup> 8.31. “Community Health Medic to the Rescue,” interview transcript from 7/12/1972. Interview with John Gilbert, CHM, and Dr. James Justice, director of the Desert Willow Program.

<sup>14</sup> Press et al, 73.

<sup>15</sup> Press et al., 73.

Professionals. This was because, outside of the IHS, the O'odham government already ran several tribal health programs, included the Papago Nutrition Improvement, Psychological Services, Alcoholism Prevention, and Disease Control programs.<sup>16</sup> The EHS was formed out of the directors of these programs and took responsibility for overall reservation health policy, including IHS programs.<sup>17</sup> Rosemary Lopez, a member of the EHS who participated in STARPAHC's design was even a graduate of the CHM program.<sup>18</sup> The EHS of the O'odham tribe was already managing tribal health programs in the earliest years of self-determination policy due in part to the ORD's funding and support. The EHS's organizational capabilities would play an important role in the selection of the O'odham Reservation as the site for STARPAHC.

In turn, the O'odham interest in self-determination was rooted in its practicality for improving healthcare. Chris Erickson, an anthropologist who worked on the project, stated about Thomas Segundo, the tribal chairman during this period: "He was concerned that the tribe was getting these different grants and contracts and programs in the health area... He wanted some assistance in thinking how to create an integrated, functioning health organizations [sic]"<sup>19</sup> Erickson later quotes Segundo as saying "We have real decision-making capability here. There are funds now available."<sup>20</sup> Based on Erickson's recounting, O'odham interest in self-determination was driven by the increased access to funds which could be used to create a better functioning health system. Segundo also expresses interest in working collaboratively with the IHS to achieve this end. Erickson's account suggests that O'odham interest in self-determination was based on the practical needs of the tribe, which included recognition that some assistance would be necessary from the Indian Health Service.

Self-determination policy, which had been sparked from Nixon's directive, led to the IHS investing significant resources to make self-determination possible for tribes. CHMs and IHB were two of these programs designed to help tribes tailor medical programs for their own

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<sup>16</sup> Description of the Papago Executive Health Staff's Operations, Box 17, Folder 5.20.

<sup>17</sup> Press et al., 109.

<sup>18</sup> Lopez's training as CHM is the subject of a Tucson Citizen article titled "Papago Woman 'doctor' for tribe" by Margarety Kuehlthau. Lopez is listed as part of an O'odham delegation to Sunnydale, CA for a design review of STARPAHC. 9.3.18, minutes from the Nov. 15<sup>th</sup> Critical Design Review in Sunnydale in a letter from Rabeau to Belasco (Dec 3<sup>rd</sup>, 1973).

<sup>19</sup> Interview with Charles & Patricia Erickson. 2016. Interview by Jeremy Greene on March 21<sup>st</sup> and June 10<sup>th</sup> between Tucson and Baltimore.

<sup>20</sup> Missing a citation here

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needs. The IHS's Office of Research and Development worked with O'odham health professionals to create one of the nation's most capable IHB's, already managing its own health programs on the reservation. The O'odham EHS's proven ability to manage healthcare programs on the reservation would be an important part of STARPAHC's genesis.

### Technological Ideologies Collide: NASA, IHS, and O'odham Cooperation Begins

In 1971, Nixon laid out another presidential imperative. This time, Nixon asked the National Aeronautics and Space Administration and other federal agencies to create potential solutions for the nation's most pressing problems.<sup>21</sup> During this period, the extravagant spending on America's space program was criticized for being out of touch with the public's needs.<sup>22</sup> Nixon's subordinate Clay Whitehead stated in 1971 that "NASA is--or should be--making a transition from rapid razzle-dazzle growth and glamour to organizational maturity and more stable operations for the long term."<sup>23</sup> This order might be interpreted as a demand for NASA to "prove its worth" to the American public as well as to a fiscally conservative administration. NASA set its eyes on health care issues, this was likely because NASA already had significant investiture in medical technology due to its interest in extending the duration of manned space flights.<sup>24</sup> Nixon's imperative was fulfilled through NASA's increased involvement in public-facing projects as well as increased advertisement of the everyday usage of its technologies. During this period, NASA published "Technology Utilization Reports" that demonstrated how space technologies were being used in the public and commercial sectors.<sup>25</sup> Nixon's presidential request placed a burden on the Space Administration to demonstrate how its use of funds was beneficial to the American public. Although NASA could have developed new technologies expressly for this purpose, the more obvious, economical, and thus practical solution was to combine this new external qualification with NASA's existing internal goals. It is this "two birds with one stone" approach would exacerbate coming conflicts over STARPAHC's image.

In 1972, NASA had conducted the Skylab experiments, which evaluated the effects of space-flight on the human body. NASA was

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<sup>21</sup> Braitberg et al. "Innovation on the Reservation," 10. To be published in *Isis*.

<sup>22</sup> Launius. 2016. Responding to Apollo: America's Divergent Reaction to the Moon Landings in *Limiting Outer Space: Astroculture After Apollo*, edited by Alexander C.T. Geppert. 61.

<sup>23</sup> *Ibid.*

<sup>24</sup> Braitberg, 10.

<sup>25</sup> 7.2.6, 7.2.7.

interested in creating a system that could allow “a non-medically trained crewman with some specialized preflight training” to “interpret directions from ground-based medical personnel to assist in the diagnosis of spaceflight medical contingencies.”<sup>26</sup> The system implied in this statement is telemedicine, where two medical providers can communicate across significant distance (or space) to consult and direct patient care. NASA recognized that telemedicine was a potential answer to the problems of access for healthcare as well. In both impoverished inner cities as well as rural areas in Vermont and Maine, telemedicine trials were underway with promises of success. Telemedicine was a clear choice for NASA as it could address Nixon’s presidential imperative and their own internal technological needs simultaneously.

STARPAHC, originally developed under the name “IMBLMS,” was first proposed by the NASA. NASA’s call for site proposals was published in newspapers nation-wide and several communities responded, interested in the potential of telemedicine and the much-needed funding NASA would provide.<sup>27</sup> NASA had complex needs for a potential site; the location had to be isolated, and part of an extreme environment that could be made to be analogous to space for the purposes of evaluation.<sup>28</sup> Perhaps somewhat contradictorily, the site also had to have a sufficiently advanced pre-existing medical system; NASA was not interested in constructing new hospitals from the ground-up. NASA sent out a public call for site proposals for a potential location where their technology could be tested as part of a rural telemedicine program.<sup>29</sup> The IHS was immediately interested in the IMBLMS project. In March of 1972, Dr. Emery A. Johnson, the Assistant Surgeon General Director of the IHS sent a letter to NASA discussing a collaborative effort between the two agencies on the IMBLMS project. Johnson stated that the IHS was interested in the project to “determine the effectiveness of space technology in improving medical care for persons living in remote areas.”<sup>30</sup> Johnson’s letter was also distributed to Dr. Rabeau of the Tucson ORD.

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<sup>26</sup> Box 6 Folder 1.3.3, Proposed experiment from Drs Same Lee Pool (NASA), James W. Justice (IHS - ORD), and Norman Belasco (NASA).

<sup>27</sup> 8, 3.1. “IMBLMS PHASE C.” Dr. James Justice lays out in a “Research Summary Sheet” from September 1974 that 3.252 million dollars of funding came from NASA, with .535 million from the IHS. 9.3.22

<sup>28</sup> 8. 3.1 “NASA IMBLMS Project” Letter from Dr. Emery A Johnson.

<sup>29</sup>Box 8 Folder 3.1. NASA call for site proposals and contractors for the IMBLMS Project. 8.3.2 “Site Selection Considerations”

<sup>30</sup> 8. 3.1 Letter from Emery Johnson to NASA-IMBLMS Project Administrator, March 14<sup>th</sup>, 1972.

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The entry of IHS into the project benefitted NASA in several ways. Firstly, IHS's sites were well suited for the project's requirements. The Indian Health Service and its network of hospitals, which serviced rural Indian reservations (IHS did not provide services to Urban Indian populations at this time), were well poised to fulfill these requirements. Additionally, the easing of NASA's financial burden for the project was a significant advantage. In a draft paper, Dr. Sam Lee Pool of the Johnson Space Center stated that the reservation was selected "due to the community's willingness to support cost of the system."<sup>31</sup> Rice C. Leach, IHS director of the Sells service unit, states that out of 3.787 million in total funding, NASA provided 3.252 million and IHS .535 million.<sup>32</sup> However, IHS (and by extension the DHEW) involvement complicated the goals and intent of the project immediately. Johnson makes it clear in his letter that the IHS requires the agreement of any Indian community involved.<sup>33</sup> By cooperating with the IHS/DHEW, NASA also was entering into an agreement with a tribal government. Whether intentionally or unknowingly, NASA found itself and its goal of technological experimentation coexisting with IHS's goal of using the project to demonstrate Space Technology as the solution for Indian healthcare access challenges.

### Technology for the People or Against Them? STARPAHC's Image Crisis

Even after STARPAHC solidified as a collaborative project with the IHS and O'odham Nation, NASA continued to see STARPAHC's objective as to "provide data for developing health care for future manned spacecraft."<sup>34</sup> Due to the severe imbalance of power between tribes and the federal government, any relationship in which the federal government "extracts" value from a tribe, as NASA sought through STARPAHC, risked being framed as exploitative. Regardless of the potential for exploitation, the IHS and the EHS of the O'odham Nation continued to partner with NASA, due to the large amount of funding available and a serious interest in the potential of telemedicine. To

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<sup>31</sup> "Application of Space Technology to Remote Healthcare" by Sam Lee Pool, January 1974. Pg. 2. Box 9, folder 3.21.

<sup>32</sup> "Research Summary Sheet" prepared by Drice C. Leach. 9/20/74. Box 9, folder 3.22.

<sup>33</sup> 8. 3.1 Letter from Emery Johnson to NASA-IMBLMS Project Administrator, March 14<sup>th</sup>, 1972.

<sup>34</sup> "Space Technology in Remote Healthcare." NASA Publication, August 1974. 7.2.2. As early as November of 1973 the site selection progress had been completed and infrastructure was being installed, but NASA continued to make statements that their goal was to collect data, not exclusively to

insulate the project from accusations of being exploitative, project managers attempted to obfuscate any information that suggested NASA was extracting value from STARPAHC. The O'odham Executive Health Staff and Indian Health Service attempted to control STARPAHC's image to present their narrative of the project as space technology being implemented by the tribe for the tribe's benefit. At the same time NASA's ignorance of the IHS goals fed a media misconception of the project as using the O'odham for the nation's space program.

The IHS and EHS attempted to control the public image of STARPAHC to emphasize the project as using technology to benefit. This was nominally supported by NASA, but the agency often undermined these goals in its own publications. The media perception of STARPAHC was the stage where these two ideologies of technology's role on the reservation would clash.

The IHS and O'odham EHS attempted to control how NASA depicted the project. It seems that the IHS and EHS recognized that NASA, an agency not familiar with Indian policy, would complicate their narrative goals for the project. The IHS, EHS, and NASA entered an agreement/protocol regarding the release of information about STARPAHC in 1973.<sup>35</sup> An actual record of the specific details of the agreement is unavailable, however elements of it can be reconstructed from a controversy surrounding statements made by Dr. Rufus Hessburg on behalf of NASA during a Chicago American Medical Association Conference. ORD director, E.S. Rabeau, in his defense of the agreement to Norman Belasco of NASA mentions "we would like to affirm our beliefs that the review process is a valuable method."<sup>36</sup> Earlier in his letter Rabeau also mentions that "several errors of fact or exploitative statements have been revised before release."<sup>37</sup> From Rabeau's statement, it is apparent that the 1973 agreement involved an obligation where NASA public releases about STARPAHC had to be reviewed and edited by the IHS and the EHS. Rabeau also highlights that preventing "exploitative statements" was a focus of the agreement. That the O'odham EHS was involved in this review process is seen in Richard M. Farrell's memorandum to Norman Belasco he states: "please convey our apologies to Dr. Justice, Dr. Rubeau [sic], Cecil Williams and other members of the Papago Executive Health Staff."<sup>38</sup> The controversy

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<sup>35</sup> The agreement/protocol is alluded to in James Justice's August 26<sup>th</sup>, 1974 letter to Norman Belasco. 9.3.22, E.S. Rabeau's letter to Belasco on September 10<sup>th</sup>, 1974 (9.3.22), and Richard M. Farrell's September 18<sup>th</sup> Memorandum to Norman Belasco.

<sup>36</sup> 9.3.22 Letter from E.S. Rabeau to Norman Belasco, September 10<sup>th</sup>, 1974.

<sup>37</sup> *Ibid.*

<sup>38</sup> 9.3.22, Farrell's Memorandum to Belasco.

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around Hessburg's statements allow for the reconstruction of the 1973 agreement between NASA, the IHS, and the EHS and shows that avoiding projection of STARPAHC as exploiting the O'odham was a concern.

Analysis of Hessburg's statements themselves at the conference shows the sort of "exploitative statements" the IHS and EHS were interested in suppressing. Farrell's memorandum suggests that the primary issue of Hessburg's presentation was during the questions panel.<sup>39</sup> The brief one-page article was published in *U.S. Medicine*, a monthly publication distributed to Physicians working in federal healthcare. Hessburg states, in reference to STARPAHC, "It was good for us... We had a chance to evaluate our approach to space on a ground situation."<sup>40</sup> Hessburg's statement here seems to fall under the category of "exploitative statements" because he has inadvertently revealed that NASA's involvement in STARPAHC was not purely a selfless desire to improve rural healthcare, but that the agency was also extracting internal value from the program. This is the opposite of the goals STARPAHC was supposed to be fulfilling; applying proven space technology to a national health crisis. In fact, Dr. Rice C. Leach stated in a report on the project that "none of the equipment used on patients is experimental... the demonstration is the system configuration."<sup>41</sup> Leach's statement is attempting to portray STARPAHC as a "demonstration" not an experiment, but this ignores that NASA was using STARPAHC to prove its experimental equipment. An example is the Medical Information Computer System (MEDIC) system, which was an experimental digital record storage system which was getting its first testing through STARPAHC.<sup>42</sup> STARPAHC also utilized a briefcase-like device for determining blood levels that was developed by the United States Airforce that had no previous trials.<sup>43</sup> Furthermore, Norman Belasco, NASA director of the project, is recording as saying that STARPAHC could be used by NASA "to validate advances in medical technology" by "plugging-in" new technologies in STARPAHC.<sup>44</sup> Belasco's statements and the use of untested technology clearly contradict the IHS goals,

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<sup>39</sup> *Ibid*, page 2.

<sup>40</sup> 19.6.2. "Diagnoses Via Television Planned for Papago Reservation Indians," *U.S. Medicine* excerpt, 15 July, 1974.

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<sup>42</sup> "NASA Technical Memorandum: A Brief Description of the Medical Information Computer System (MEDICS)." August 1974. Box 7, folder 2.1.

<sup>43</sup> "A Portable, Self-Powered System for Rapid Determination of Blood pH and Hematocrit and Levels of Sodium, Potassium, and Chloride." Box 9, folder 3.21.

<sup>44</sup> Belasco. Undated. "Space Technology and Remote Healthcare" Box 9, folder 3.3.

expressed through Leach of STARPAHC being purely a demonstration of telemedicine. Hessburg's statements echo Belasco by implying that STARPAHC is a test of space technology and systems *before* they are used in space.

The article also introduces STARPAHC based on Hessburg's description, demonstrating how even small statements like Hessburg's could lead to a drastically different perception of the project. Hessburg is quoted as saying "HEW decided to try the system on the remote Indian reservation west of Tucson."<sup>45</sup> This statement ignores that the O'odham EHS, with IHS ORD collaboration, submitted a direct proposal for the reservation to be the site for STARPAHC, with the DHEW only involving itself later due to its organizational position over the IHS, who had approached NASA on its own as detailed earlier. Even more egregious is the article's complete lack of mention of the O'odham EHS staff's role in STARPAHC. What appears to have occurred, is that Hessburg was severely uninformed about the IHS and O'odham perspective of the project. This counterfactual has the effect of downplaying the O'odham decision to engage in STARPAHC, making it falsely appear as a top-down federal experiment on the reservation. The article again neglects to mention that the MHU, the flagship of the program, will be manned by specially trained EHS Community Health Medics (trained at the IHS's Desert Willow Center). This omission could suggest to readers that the O'odham have far less of a role in STARPAHC's operation than actually existed. Hessburg's statements, and the controversy around them, demonstrate how NASA's missteps could lead to media interpretations that depicted STARPAHC as an experiment on the O'odham, rather than a collaborative project.

Hessburg's article is not the only example of the IHS and EHS losing control of STARPAHC's public image. A 1976 *Los Angeles Times* article referred to the O'odham as "guinea-pigs for astronauts."<sup>46</sup> Again, as in the case of Hessburg, public media is interpreting STARPAHC as testing ground for NASA technology and ignoring O'odham agency and self-determination. The *Los Angeles Times'* statements led to NASA

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<sup>45</sup> 19.6.2. "Diagnoses Via Television Planned for Papago Reservation Indians," U.S. Medicine excerpt, 15 July, 1974.

<sup>46</sup> My understanding of this article is based on how it is discussed in other publications, as I have been unable to locate it within the STARPAHC archive or in the Los Angeles Times digital archive. The article is referenced in "Space-Age Medicine Aiding Indian Village," published by the Houston Chronicle on 22<sup>nd</sup> February, 1976. However, a separate letter between Richard S. Johnston of NASA Life Sciences and Jacob Escalante, Tribal Chairman, the article is described as appearing in a Tucson Newspaper. Both articles are available in 11.3.33.

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director of life sciences Richard S. Johnston apologizing to tribal chairman Jacob Escalante. Johnston takes a similar tactic as to Leach by asserting that all equipment used is “thoroughly tested” and the primary objective is to benefit O’odham healthcare.<sup>47</sup> The *Los Angeles Times* article appears to have struck a chord in the EHS, as member Ralph Antone made a public statement in reference to accusations that the Council was allowing itself to be “ripped off”: “we are getting the best health care available for free. How is that a ripoff [sic]?”<sup>48</sup> Antone publicly addressing the “guinea pig” article might be because the *LA Times* article echoed internal criticism of the project made by Vice President of the tribe, Michael Rios, in 1975.

Rios accused NASA of using the O’odham as guinea pigs and questioned if the project was bringing any real medical benefits to the tribe: “I am sick and tired of seeing my people used in different ways to benefit others.”<sup>49</sup> Rios also attests that he interrogated the tribal council on the benefits of the project and none could provide a solid answer.<sup>50</sup> Rios’s accusations appear to have missed the mark, as it was the Executive Health Staff that was primarily responsible for the project’s administration. Regardless, Rios makes several demands on NASA for what he feels is due compensation for their role as “guinea pigs,” including the purchase of Ambulances and the allocation of 10% of STARPAHC’s funding for the education of O’odham healthcare providers.<sup>51</sup> Rios demonstrates an intense skepticism of STARPAHC’s technological promises; his demands rely on proven technology over the experimental systems of STARPAHC.

The conflict outlined between Rios and Antone shows another element of STARPAHC’s technological image, namely the importance of the project’s use of “space technology.” Although Rios’s suggestions are mostly in line with the recommendations for infrastructure improvements made by medical professionals working on STARPAHC.<sup>52</sup> Asides from the fact that NASA would likely have little interest in furnishing ambulances after already providing 3.5 million dollars in funding, these proposals would throw away STARPAHC’s “Space technology” image. Antone emphasizes that STARPAHC is the “best healthcare available.” For the O’odham, STARPAHC was an opportunity

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<sup>47</sup> Letter from Johnston to Escalante. May 15<sup>th</sup>, 1975. Box 11, folder 3.33.

<sup>48</sup> Braitberg. 2019. “Innovation on the Reservation.” Pg. 47.

<sup>49</sup> April 18<sup>th</sup>, 1975 letter from Michael R. Rios to Richard S. Johnston, NASA Life Sciences. 11.33

<sup>50</sup> *Ibid.*

<sup>51</sup> *Ibid.*

<sup>52</sup> “Provider Attitudes Towards Telemedicine: Preliminary Findings,” (10.3.30).

to not only receive healthcare funding that was needed, but to receive healthcare that was beyond that which nearly any other community in the United States, or the world, could receive at that time.

Although many of these controversial statements neglected to acknowledge O'odham agency in the creation and execution of STARPAHC, they were not incorrect in supposing that NASA was using the project to test technology and systems for future spaceflights. The numerous articles and public image incidents likely represented the fears of IHS and the EHS which led to the creation of the original 1973 compact. The EHS and IHS appeared uncomfortable with allowing NASA's goals to be public because they, correctly, predicted that these goals would overshadow the project's expression of O'odham agency.

If Hessburg's statements represent a failure to control the image of STARPAHC, another preserved document demonstrates how the review and revision process was supposed to work. The review process, in of itself, was a demonstration of self-determination as the tribe was able to control how it was represented. Furthermore, the control which EHS and IHS exerted on STARPAHC's image focused on emphasizing the project as an expression of O'odham self-determination. The preserved document "A Dividend from the Space Program: NASA Technology Pays Off in Arizona," which appears to be a publication that underwent review from O'odham editors. From the onset, the edits are focused on using language that promotes images of O'odham sovereignty. The article references the general IHS definition of self-determination on page 10: "The Indian Health Service (a division of HEW) is attempting to provide options for maximum tribal involvement to the end that an updated health service may be operated by the Indians themselves." An editor proposes the following change: adding "and more responsive" after "updated." This change directly invokes the logic of President Nixon for self-determination; that tribes could administer programs that were more responsive and suited for their needs. Edits also address the issue of representation of STARPAHC, steering the article away from a potentially exploitative image. The final sentence of the article begins: "The STARPAHC program, as now being tested in Arizona..." A proposed edit changes "tested" to "conducted." This edit steers the image of STARPAHC away from an experiment to be tested towards a project that is applying already proven technologies. This indicates, along with Hessburg's comments, that the IHS and Papago Executive Health Staff were interested in downplaying STARPAHC's experimental aspects because they conflicted with their narrative of STARPAHC being technology applied for self-determination of the tribe.

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### Conclusions

STARPAHC, and the wealth of documentation surrounding the project, provides insight into how technology was an important part of realizing the policy of Indian self-determination. The project's existence was due to a unique convergence of the interests of the Indian Health Service, the National Space and Aeronautics Administration, and most importantly the Tohono O'odham Nation. For the O'odham, STARPAHC presented an opportunity to gain access to much needed funding and support for the challenge of delivering healthcare to the reservation's remote communities. The Indian Health Service and the O'odham Executive Health Staff made significant efforts to portray STARPAHC as the use of space technology by the tribe for themselves. The O'odham had the unique opportunity to be world leaders in healthcare, a possibility that only a few years earlier would have seemed impossible. NASA's mishaps and the power imbalance led to media portrayal of the project often reversing STARPAHC's use of technology. This was certainly not helped by the fact that NASA was engaging in experimental trials at STARPAHC.

As tribal governments across the United States enter a new era of Nation Building, the reconstruction of native governments, the challenges that STARPAHC faced will most likely surface again. As my experience explaining the STARPAHC project to my friend indicates, the same challenge of overcoming the assumption of exploitation in government faced nearly 50-years is still relevant today. Technology presents an opportunity for tribes to lead the nation and the world in healthcare, but it also brings the challenge of overcoming biases about the relationships between tribes and technology. The pervasiveness of "guinea pigs" in the narrative of STARPAHC highlights the challenge faced in overcoming the assumptions that a tribe could only passively receive assistance, rather than be a true agent in such relations. STARPAHC provides a unique insight into how technology intersects with tribal sovereignty.

### Methods

The majority of this paper's argument is based upon my research at the University of Arizona Health Sciences Library's STARPAHC collection. The 19 boxes of the archive (an additional 26 include images and photographs) which contain documents were surveyed. A significant limitation of the archive is that it lacks official documentation of the O'odham perspective. For this reason, the interview with Chris Erickson was used to establish O'odham interest in self-determination. The archive is rich in material from NASA, Lockheed Martin (the contractor designing STARPAHC), and the IHS and DHEW however. In addition to this

original research, I also relied on anthropologist George Pierre Castile's book *To Show Heart* for my understanding of self-determination policy's origins and motives. The inspiration for this paper, and a significant influence on it was Victor Braitberg's to-be-published article "Innovation on the Reservation," co-written with Jeremy A. Greene and Gabriela Maya Bernadett. This article is, as far as I am aware, the only other existing scholarly analysis of STARPAHC.<sup>53</sup>

*Paul Jones is a student of history at the University of Arizona with plans to graduate in Summer of 2020. His minor is in American Indian Studies. Paul's academic interests have been focused on the history of Federal-Indian policy and on tribal sovereignty today. Paul studied Tohono O'odham language with professor Ofelia Zepeda and helped with an ongoing project to create an online O'odham language dictionary. In Fall of 2019, he worked with Professor Victor Braitberg on an independent study researching the STARPAHC project, the research and work from this independent study became the paper "Narratives of Technology and Self-Determination." During that same period, Paul participated in the annual pilgrimage to Ma:lina, an experience that influenced his analysis of STARPAHC. Paul's future interest is to teach history at a High School level, with the hope to improve how Indian policy is taught in schools.*

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<sup>53</sup> Rashid Bashshur did analyze the project under contract for NASA in his 1980 paper "Technology Serves the People: The Story of a co-operative telemedicine project by NASA, the Indian Health Service and the Papago People," but as it is published by NASA and Bashshur worked on the project himself, it is more so a primary source of NASA's perspective than an academic source.