Annual Report
FY2022

Promoting Patient-Oriented Research and Training
EXECUTIVE DIRECTOR’S STRATEGIC PLAN:

The CRI continues its mission, supporting clinical research interests for the faculty and trainees within the TTUHSC. The past year saw us focus our efforts in reestablishing a high-level division of biostatistics. This began with obtaining institutional approval of a full-time faculty position for the Director of the Division of Biostatistics. This faculty position is housed in the Department of Medical Education (DOME) within the School of Medicine, chair Dr. Betsy Jones. The full-time faculty position allowed us to elevate the applicant pool. I’m happy to report that this September we completed our search for the director of the division of biostatistics. We welcome Stephanie Stroever, PhD who accepted the director position. She is now actively growing the division and providing expertise in the area of biostatistics. We appreciate very much Dr. Steven Berk and his efforts helping us establish a division of biostatistics that will be able to provide not only study design and statistical analysis of clinical studies but play a major role in the educational efforts in that area of biostatistics for all of our faculty and trainees.

Over the last year CRI has also been working closely with Dr. Lance McMahon, SVP for Research as well as Dr. Kristyn Sorensen AVP for Research Integrity, working on plans to expand clinical research support efforts at all campuses in all schools.

Fiscal year 2022, with the wind-down of the pandemic, also showed a resurgence of new clinical projects both in projects reviewed and new CRI workorders submitted.

This new fiscal year, 2023, the CRI efforts will be to show significant increase in all metrics we measure, most importantly numbers of projects from all of the schools within the HSC as well as increasing clinical research activity at all of the campuses. We will be assisting Dr. Stroever in bringing in additional biostatistics staff for the new biostatistics’ division. We will be working with Dr. McMahon in the Office of Research to increase the awareness and stature of clinical research throughout the HSC.

As always, the CRI will continue to support any and all clinical research efforts by TTUHSC faculty and trainees. We hope these efforts will contribute to the improvement of healthcare for the future.

John Griswold, MD, FACS
**SUMMARY:**
2022 saw the CRI experience a 62% increase in work orders requesting support on clinical projects (243 vs 150). Work orders for Lubbock SOM increased 101% from last FY, with a total of 221. The CRI continues to provide support for IRB preparation and submission of new and on-going projects. In FY22 the CRI submitted 1295 forms to the IRB; 219 of these were initial submissions of new studies; a more than 104% increase over last FY. The percentage of new studies approved by the IRB on first submission increased from 47% to 55%. Several metrics are below those of FY21, we believe these are directly related to the CRI having no full-time biostatisticians, being short-staffed. These metrics include: statistical analysis & reporting, abstracts, presentations and manuscripts, and the number of educational presentations by the CRI.

The CRI experienced a dramatic increase in FY22 in the number of medical students supported for clinical projects; more than 90. The CRI’s research volunteer database established in 2011 to allow the general public to independently sign up to be contacted about possible clinical research participation continues to grow, up 14% to 626 volunteers this year. This database has been queried several times to help recruitment efforts for CRI facilitated projects.

The CRI’s logo includes flames; each flame represents a TTUHSC school. With the FY22 addition of the Julia Jones Matthews School of Population and Public Health, we’ve added a 6th flame to the logo to represent the 6 schools at the TTUHSC. The other schools are: Graduate School of Biomedical Sciences, School of Health Professions, School of Medicine, School of Nursing, and the Jerry H. Hodge School of Pharmacy.

**FY22 Highlights**

**Achievements**
- The CRI implemented its new organizational chart in preparation for succession planning. We did this by promoting team members from within the CRI to leadership positions.

The following coordinators obtained phlebotomy certification:

- Mariana Fiori, PhD
- Erin Smith, BS, BA
- William (Ben) Brugmann, PhD
Ben Brugmann obtained his ACRP CCRC certification October 2021

Victoria Johnson graduated with an MPH, December, 2021

Jammie Holland, LVN received the 2022 TTUHSC Distinguished Staff Award for Quality Staff as well as the 2021 CRI Service Excellence Award.

- CRI welcomed 3 new staff members:
  - Lane Young, BA
  - Erin Smith, BS, BA
  - Bailey Wheeler, BS
• 2022 Lorenz O. Lutherer, MD, PhD, Clinical Research Award

MS2 student Hannah Daniel won the 2022 Lorenz O. Lutherer, MD, PhD, Clinical Research Award for her work on “Association of Dynamic Motion of Cerebellar Tonsils in the Outcome in Pediatric Chiari I Malformation”. The project was awarded during the 34th Annual Student Research Week, which was held March 8-11, 2022.

Challenges

• CRI Lubbock office has almost outgrown its current space on the 4th floor. Not having contiguous space has been discouraging for our team---Regulatory staff are located away from the rest of the Lubbock CRI team in the link space (4AL-100).

• CRI has experienced its share of staff turnover in FY22. Some have left for personal reasons, others for career advancement. CRI leadership is committed to establishing ways to encourage staff retention, such as: competitive salaries, continuing education support, and flexible scheduling.

• Additionally, we’ve seen a big decrease in the number of statistical services provided due to not having any full-time biostatisticians or a Director of the Division of Statistical Services. We lost our full-time biostatisticians, one in the Director position, in Spring of FY21. Associated with having no statisticians, CRI had no work orders from outside the Lubbock and Permian Basin campuses this FY. Historically, work orders from those campuses were for biostatistical support.

• Permian Basin has a new Surgery Residency program. We will be working with those residents and the Permian Basin Department of Surgery to stimulate clinical research in that department.

• Ailena Mulkey, a valued team member, passed away unexpectedly in May, 2022. (See page 10)
ACHIEVED GOALS & OBJECTIVES:
The CRI continues to meet its objective for facilitating and growing clinical research activities at TTUHSC. The activities of the CRI during FY22 as compared to FY21 are summarized in the following tables/graphs:

<table>
<thead>
<tr>
<th>Table 1: Summary</th>
<th>2021</th>
<th>2022</th>
<th>%Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of New Clinical Research Studies to the IRB</td>
<td>107</td>
<td>219</td>
<td>104.67%</td>
</tr>
<tr>
<td>Number of Novice Investigators</td>
<td>29</td>
<td>28</td>
<td>-3.44%</td>
</tr>
<tr>
<td>Number of Forms Submitted to IRB</td>
<td>783</td>
<td>1295</td>
<td>65.38%</td>
</tr>
<tr>
<td>Protocol reviews</td>
<td>342</td>
<td>405</td>
<td>18.42%</td>
</tr>
<tr>
<td>Statistical Analysis &amp; Reporting</td>
<td>210</td>
<td>32</td>
<td>-84.76%</td>
</tr>
<tr>
<td>*Abstracts Presented</td>
<td>19</td>
<td>14</td>
<td>-26.31%</td>
</tr>
<tr>
<td>% Abstracts Presented – PubMed Indexed</td>
<td>5.26%</td>
<td>0%</td>
<td>-100%</td>
</tr>
<tr>
<td>*Research Presentations</td>
<td>44</td>
<td>36</td>
<td>-18.18%</td>
</tr>
<tr>
<td>*Published Manuscripts</td>
<td>36</td>
<td>24</td>
<td>-33.33%</td>
</tr>
<tr>
<td>% Published Manuscripts – PubMed Indexed</td>
<td>72.22%</td>
<td>9.09%</td>
<td>-87.41%</td>
</tr>
<tr>
<td>Educational Presentations by CRI</td>
<td>21</td>
<td>6</td>
<td>-71.42%</td>
</tr>
<tr>
<td>Total studies closed/cancelled</td>
<td>17</td>
<td>17</td>
<td>0.0%</td>
</tr>
<tr>
<td>Total studies completed</td>
<td>32</td>
<td>41</td>
<td>28.13%</td>
</tr>
</tbody>
</table>

*Number is dependent upon the CRI being notified of the abstract, presentation, and publication

FY22 approved work orders by campus

<table>
<thead>
<tr>
<th>School</th>
<th>Lubbock</th>
<th>Odessa</th>
<th>Amarillo</th>
<th>Dallas</th>
<th>Abilene</th>
<th>Total # of WO by School</th>
<th>% of Total WO for each School</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOM</td>
<td>221</td>
<td>13</td>
<td>0</td>
<td>NA</td>
<td>NA</td>
<td>234</td>
<td>96.29%</td>
</tr>
<tr>
<td>SON</td>
<td>2</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>2</td>
<td>0.82%</td>
</tr>
<tr>
<td>SOHP</td>
<td>5</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>5</td>
<td>2.05%</td>
</tr>
<tr>
<td>SOP</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>*GSBS/PH</td>
<td>0</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>UMC Nursing Research/Magnet</td>
<td>2</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>2</td>
<td>0.82%</td>
</tr>
<tr>
<td>TOTAL WO/by Campus</td>
<td>230</td>
<td>13</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>243</td>
<td>N/A</td>
</tr>
</tbody>
</table>

N/A indicates the school does not have a presence on that campus.
*FY23 Public Health will be listed as a separate school
FUNDING:
Primary funding for the CRI in FY22 came from Dr. Steven L. Berk, Dean and Executive Vice President for Clinical Affairs, through the TTUHSC School of Medicine Office of the Dean. The School of Medicine medical practice income plan (MPIP) and clinical departments in Lubbock provide additional funding support. The Department of Psychiatry, through Senate Bill 11, provides CRI with funding assistance; and CRI residual funds from previous industry sponsored research are also used. Moreover, the Dean of the School of Pharmacy contributes to the CRI overhead, along with a contractual arrangement between the CRI and University Medical Center in Lubbock for conduct of cancer studies. In the Permian Basin the School of Medicine Regional Dean’s Fund, monies chiefly generated by the CMS uncompensated care program, finance much of the budget support for the Odessa CRI office.

MEMBERS:
All faculty and trainees at TTUHSC are considered customers of the CRI. The Clinical Research Institute is governed by an Advisory Committee that met five times during FY22. It is composed of faculty representatives from all schools and campuses, the TTUHSC President and Executive Vice President for Clinical Affairs, the Senior Vice President for Research and Innovation, the Director of the TTUHSC Simulation Program, and the Executive Leadership team made up of the three Directors of the CRI: Executive Director John Griswold, MD; Thomas E. Tenner, Jr. PhD, Assistant Director; and Catherine Lovett, MSN, RN, Managing Director. The full list of CRI members is provided in Appendix A.

CRI has thirteen study coordinator positions: ten coordinators in Lubbock and three on the Permian Basin Campus. Since implementation of the succession planning organizational chart, four coordinators have dual roles as either a Director or a Manager and the study monitor is also the Director of Regulatory Affairs. There are two regulatory specialists for submissions to the IRB, an administrator, and an administrative assistant. We were not able to fill our Director of

![Total Number of WO by Participating Schools](image-url)
Statistical Services position in FY22; and still have the other full-time biostats position and the
two part-time graduate student positions vacant. We currently have two PRN/as needed
statisticians: Silvia Jakubski, MS and Hasan Al Mekdash, PhD. The full list of CRI staff
members is provided in Appendix B.

EDUCATION:
Cathy Lovett, MSN, RN remains the Chairperson of the West Texas Chapter for the Society of
Clinical Research Associates (SoCRA). Ms. Lovett recruits various speakers and topics to have
a meaningful seminar series. The topics offer 1.0 Continuing Education Unit (CEU) hours.
Further, leadership from CRI presents at New Faculty Orientation routinely. The CRI helped
students in the 2022 Medical Student Summer Research Program navigate clinical research
protocol design, IRB submission, and data analysis.

The CRI continues individual interactions with investigators and trainees. These meetings
involve protocol development, study design, conduct of the study, data analysis, presentations,
and publications. Our experienced research coordinators and study monitor are available for
clinical studies. The entire CRI team works closely with investigators to assist with study
completion with the intent to publish in MEDLINE/PUBMED journals. The CRI leadership has
contributed to the recruitment efforts of the institution by discussing the role of the CRI with
potential faculty employees.

DIRECT ASSISTANCE WITH THE STUDIES:
CRI personnel work with the investigators and trainees during each phase of a proposed study.
1. Each investigator submits a draft protocol, following the template provided on the CRI
website. The protocol includes the research question/s, the background forming the basis
for the question, objectives, the hypothesis, the study design, the methodology to be used,
the statistics for analysis, and the potential significance of the study results. Members of
the CRI team, including the biostatistician, work closely with the investigator’s team
during this process.
2. Assistance is given in developing documents such as informed consent forms, data
collection forms, surveys, the IRB application, and subsequent amendments/reports to the
IRB.
3. After IRB approval, the research coordinators consent and enroll subjects, collect
samples, data, and essentially conduct the study under the direction of the Principal
Investigator.
4. Once study accrual has been completed, the biostatisticians analyze the data, construct
tables and figures, and assist in writing the presentation/manuscript. Members of the CRI
Executive Leadership are available and often assist the principal investigators in
completing or revising the articles prior to submission to the journal of their choice.

Currently, CRI services are provided at no cost to the investigators due to the funding
mechanisms in place. This unique system allows investigators to obtain pilot data necessary to
support future funding requests. The CRI resources are invaluable to faculty with busy schedules
and help to partially offset the lack of protected time for research.
Ailena Rene Mathis Mulkey was born in Odessa, Texas and raised in Crane, Texas. Even as a young girl, she always had the heart of a caregiver, so it was no surprise when she decided to be a nurse. She got her LVN (2002) and RN (2006) from Odessa College. Ailena earned an undergraduate certificate in Healthcare Administration from Colorado Christian University in May, 2021, then went on to get her BSN from the University of Texas, El Paso in October, 2021. She would have completed the Psychiatric Mental Health Nurse Practitioner Program at the University of Texas, El Paso in 2024. She was well on her way to accomplishing her dreams of opening a hope center for those in need.

The CRI was blessed with having Ailena join the team at TTUHSC in Odessa in March of 2013. It was clear she was an extraordinary human being, giving much of herself with compassion, energy, and professionalism to her co-workers, investigators and study participants. She became an Association of Clinical Research Professionals Certified Clinical Research Coordinator in 2015, further demonstrating her commitment to excellence and knowledge of clinical research. Her passion for learning, excellence and her work led to her promotion to Director of Clinical Research Operations for the Clinical Research Institute Permian Basin office in the Fall of 2021. Further, Ailena didn’t just work full-time for TTUHSC-CRI, she also became a dedicated volunteer EMT and firefighter in 2015 for the Crane Volunteer Fire Department. She devoted countless hours to their fundraisers and events, and lost many hours of sleep going on ambulance or fire calls. She never complained, she always expressed how happy she was to be able to help others. Additionally, she was an amazing mother, making sure her children knew they were loved.

In her free time, Ailena loved to listen to rock and roll music, tend her flowers and plants, dance and spend time in nature, especially at the lake. Ailena died on May 19, 2022; leaving a piece of herself in everyone she knew and loved; never to be forgotten.

She Was There
When a calming, quiet presence was all that was needed, She was there.
In the excitement and miracle of birth or in the mystery and loss of life, She was there.
When a silent glance could uplift a patient, family member of friend, She was there.
At those times when the unexplainable needed to be explained, She was there.
When the situation demanded a swift foot and sharp mind, She was there.
When a gentle touch, a firm push, or an encouraging word was needed, She was there.
In choosing the best one from a family’s “Thank You” box of chocolates, She was there.
To witness humanity, — its beauty, in good times and bad, without judgment, She was there.
To embrace the woes of the world, willingly, and offer hope, She was there.
And now, that it is time to be at the Greater One’s side, She is there.

A poem by Duane Jaeger, RN, MSN, from the Nightingale Tribute
Appendix
A. CRI Advisory Committee Members

Alyce Ashcraft, PhD, RN, CNE, FNGNA, ANEF, School of Nursing

Steven Berk, MD, Executive Vice President for Clinical Affairs

Sharon Decker, RN, PhD, ANEF, FAAN, TTUHSC Simulation Program

John Griswold, MD, FACS, Executive Director, CRI

Ron Hall II, PharmD, MSCS, School of Pharmacy, Dallas Campus

Catherine Lovett, MSN, RN, CCRC, CCRP, Managing Director, CRI

Lance McMahon, PhD, Senior Vice President, Office of Research

Lavi Oud, MD, School of Medicine, Permian Basin Campus

Lori Rice-Spearman, PhD, President

Leslie Shen, PhD, CCRP, School of Medicine

Phil Sizer, Jr. PT, PhD, School of Health Professions

Thomas E. Tenner, Jr. PhD, Assistant Director, CRI

Gary Ventolini, MD, School of Medicine, Permian Basin Campus,
B. Clinical Research Institute Team

Lubbock:

Mhd Hasan Al Mekdash, MA, MS, PhD, PRN Biostatistician
Staci Brown, Administrative Assistant
William “Ben” Brugmann, PhD, CCRC, Clinical Research Coordinator
Mariana Fiori, PhD, Section Manager, Cancer Studies/Clinical Research Coordinator
John Griswold, MD, FACS, Executive Director
Silvia Jakubski, MS, PRN Biostatistician
Victoria Johnson, MPH, BS, Clinical Research Coordinator
Rylee Law, LVN, BS, Section Manager, Regulatory Affairs/Clinical Research Coordinator
Catherine J. Lovett, MSN, RN, CCRC, CCRP, Managing Director
Josie Martinez, Clinical Department Administrator
Amanda Romero, MS, RN, CCRC, Director of Regulatory Affairs/Monitor
Chris Scott Johnson, MSN, RNC, CCRC, CA/CP, SANE, Director of Clinical Research Operations/Clinical Research Coordinator
Erin Smith, BS, BA, Clinical Research Coordinator
Thomas E. Tenner, Jr. PhD, Assistant Director
Bailey Wheeler, BS, Regulatory Specialist
Lane Young, BA, Clinical Research Coordinator

Permian Basin

Jammie Holland, LVN, CCRC, Clinical Research Coordinator
Evangelina Santiago, LVN, CCRC, Clinical Research Coordinator
C. Dissemination of Information

Abstracts (14) *PubMed


Credo R, Pang AW, Bharadia D, Griswold J. Acute intermittent porphyria in a burn patient: Case study and review of the literature. Congress of the International Society for Burn Injuries, Brigham and Women’s Hospital Dermatology Virtual Symposium, May 25, 2022, Boston, MA


Moore D. Tummy time for your career: Strengthening your core with a departmental personal development book club. CREOG & APGO Annual Meeting, March 2022, Orlando FL

Pham T, Pang AW, Bharadia D, Griswold J. Integration of innovative burn surgical treatments to decrease length of stay. Congress of the International Society for Burn Injuries, Brigham and Women’s Hospital Dermatology Virtual Symposium, May 25, 2022, Boston, MA


Zeitouni J, Hadidi Y, Pang AW, Bharadia D, Griswold J. Late Occurrence of a Large Bilateral Pulmonary Embolism in an Electrical Burn Injury: A Case Study. CHEST. Accepted as published abstract

Journal Articles (24) *PubMed


Chol E, George A, Jakubski S, Al-Mekdash MH, Sharma P. Frailty is an independent predictor of 90-day complications following robot-assisted radical prostatectomy. The Southwest Respiratory and Critical Care Chronicles 2022;10(44):15-21 doi: 10.12746/swrccc.v10i44.1063


Presentations (36)

Abidi H, Pang AW, Griswold J. Burns at the Ballpark: A case study. Reinforcing the Importance of Sunscreen in Preventing Severe Sun Burns in Infants. 21st Congress of the International Society for Burn Injuries, August 28-September 1, 2022, Guadalajara, Mexico


Bradshaw E, Pang AW, Bharadia D. Using geography as a predictive factor of outcomes in burn care follow-up in rural West Texas. Southwestern Surgical Congress, 73rd SWSC Annual Meeting 2022, Apr 24-27, 2022, Wigwam/Phoenix, AZ

Bradshaw E, Pang AW, Bharadia D. Using geography as a predictive factor of outcomes in burn care follow-up in rural West Texas. North Texas Chapter of American College of Surgeons Annual Meeting, February 3-5, 2022, Fort Worth, TX

Bradshaw E, Pang AW, Bharadia D, Griswold J. Using geography as a predictive factor of outcomes in burn care follow-up in rural West Texas. Texas Surgical Society Annual Conference, April 22-24, 2022, Lubbock, TX


Credo R, Pang AW, Bharadia D, Griswold J. Acute intermittent porphyria in a burn patient: Case study and review of the literature. 21st Congress of the International Society for Burn Injuries, August 28 - September 1, 2022, Guadalajara, Mexico

Credo R, Corbitt S, Wall J, Brown E, Abidi H, Onuoha M, Shaw C, Huynh J, Pang AW, Bharadia D, Griswold J. Fluid resuscitation in burn patients: A retrospective analysis on methamphetamine’s role in fluid extravasation. 21st Congress of International Society for Burn Injuries, August 28 - September 1, 2022, Guadalajara, Mexico


Householder N, Rutayomba E, Agyare K, Zumwalt M. Experimental intra-articular injections for the treatment of primary knee OA. Texas Tech University Health Sciences Center Research Week, March 8-11, 2022, Lubbock, TX

Householder N, Rutayomba E, Agyare K, Zumwalt M. Literature review- experimental intra-articular injections targeting of OA pathology. Texas Surgical Society Conference, April 22-24, 2022, Lubbock, TX

Huseman K, Chapina-Guizar A, Zumwalt M. COVID-19’s impact on TTUHSC Graduate & Medical students’ exercise routines. Texas Tech University Health Sciences Center, Research Week, March 8-11, 2022, Lubbock, TX


Koshy R, Brown E, Pang AW, Bharadia D, Griswold J. Postoperative splinting vs free range of motion and effect on healing time of Recell for partial thickness burns. Joint Meeting of the North Texas Chapter of American College of Surgeons and Texas Association of Bariatric Surgery, February 3-5, 2022, Fort Worth, TX


Pang, AW, Brown, E, Bharadia, D, Griswold, J. Serial Casting for the Improvement of contractures after burn injuries, a case report. 21st Congress of the International Society for Burn Injuries. August 28 – September 1, 2022, Guadalajara, Mexico, *Podium Presentation*

Pang, AW, Pham, T, Bharadia, D, Griswold, J. Integration of Innovative Burn Surgical Treatments to Decrease Length of Stay. 21st Congress of the International Society for Burn Injuries. August 28 – September 1, 2022, Guadalajara, Mexico, *Podium Presentation*

Boswick M.D. Burn and Wound Healing Symposium, January 22-27, 2022, Wallea Beach Resort, Maui HI

Pang AW, Cole J, Perabo A, Robison K. Weight percentile and intentional burns in the pediatric population. 21st Congress of the International Society for Burn Injuries, August 28 - September 1, 2022, Guadalajara, Mexico

Perry C, Wynn A, Dowdle T, Bruce C, Bishop K. The influence of rural vs urban hometown on medical students’ knowledge and perceptions toward opioids and the opioid epidemic. University of Texas Health School of Public Health Research Beyond Boundaries Conference, April 16, 2021, Houston TX

Petrie K, Chen J, Miears H, Grimes JS, Zumwalt M. Gender differences in seeking healthcare and post-intervention pain outcomes in foot and ankle orthopedic patients. LWBIWH Sex and Gender Health Symposium, October 22, 2021, Lubbock, TX


Raghuram A, Pang AW, Zeitouni J, Tuazon C, Ronaghan C, Griswold J. Negative-pressure therapy and autologous skin cell suspension skin cell suspension in necrotizing soft tissue infection. Joint Meeting of the North Texas Chapter of American College of Surgeons and Texas Association of Bariatric Surgery, February 3-5, 2022, Fort Worth, TX

Siddiqui, K, Pang, AW, Bharadia, D, Griswold, J. Disseminated Intravascular Coagulation in Burn Injury: A case report. 21st Congress of the International Society for Burn Injuries, August 28 - September 1, 2022, Guadalajara, Mexico

Sikes DL. Expanding the PATH (Prospect, Admissions, Training, Honors) for student’s veterans in nursing. Association for Leadership Science in Nursing. April 6, 2022, [Virtual]
https://www.nursingleadershipscience.org/event-4682145

Zeitouni, J, Pang, AW, Bradshaw, E, Rizvi, M, Bharadia, D, Griswold, J. “Alkali injury with non-operative management in a pediatric patient: a case report.” North Texas Chapter of American College of Surgeons Annual Meeting, February 3-5, 2022, Fort Worth, TX