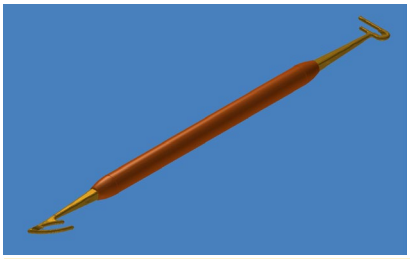
The Defense Health Agency is a joint, integrated Combat Support Agency that enables the Army, Navy, and Air Force medical services to provide a medically ready force in both peacetime and wartime.

- **Patent**
  Patent Application No. PCT/US2023/0333782
  Filed on 27 September 2023

  Provisional Application No. 63/377,613
  Filed on 29 September 2022
- **Title**
  Cutting Dural Hook
- **Trademark**
  DELTA HOOK™
  Filed on 13 March 2024
- **Inventor**
  Villahermosa, A.J.
- **Laboratory**
  Univ. of Texas Health Science Center at San Antonio Neurosurgery, San Antonio, TX
- **Nonexclusive License Available**



Dural Cutting Hook

Delta Hook™

DHA Research and Development Command seeks a partner interested in commercializing this technology.

The Technology

A common process for opening the dural mater during brain surgery requires two sets of hands using the current dura mater surgical knives. This new device is useful for opening the dura mater brain surgery when access to the subdural space is needed e.g., trauma surgery or tumor removal surgery by one pair of hands while reducing time. This surgical device is suitable to reduce the likelihood of damaging the underlying brain while reducing the time to open the dura. The blade is designed in such a way that it provides a safe and easy way to cut through the dura mater only as needed by a single surgeon, (Note: image is an early draft)

Applications

1. Opening the dura mater during brain surgery
2. Trauma and General Surgery when performing fasciotomies.
3. Cutting any tissue plane when isolated

Competition/Collaborators

- Global Surgical Device Manufactures including:
- Medtronic
- Stryker
- Boston Scientific
- Johnson & Johnson (Ethicon)

Highlighted Benefits

- Opening the dura mater by a single surgeon
- Time efficiency, increased safety, and ease of use.
- Applicable to Trauma and General Surgery procedures
- Does not require power source

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DHA Research and Development, Office of Medical Technology Transfer, Fort Detrick MD 21702

Defense Health Agency
MEDICAL TECHNOLOGY TRANSFER

The Defense Health Agency is a joint, integrated Combat Support Agency that enables the Army, Navy, and Air Force medical services to provide a medically ready force in both peacetime and wartime.

Intubation Guidance Device

DHA Research and Development seeks a partner interested in commercializing this technology.

The Technology

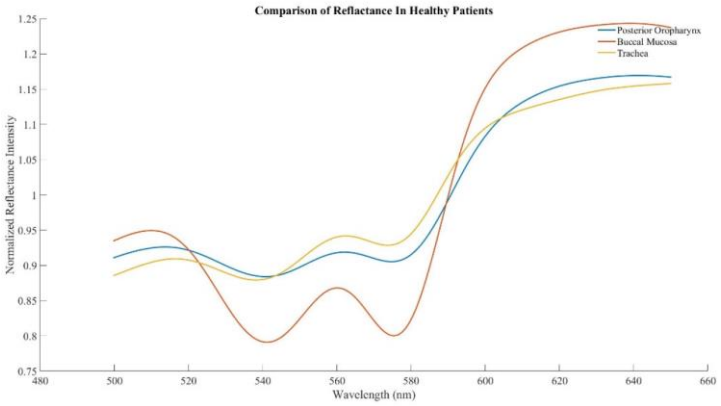
An intubation guidance/airway management device is designed with light-emitting and photo-sensing elements to assist in the accurate placement of tracheal tubes. This cutting-edge technology includes an airway tube with a light-emitting element and a photo-sensing element at one end. The light-emitting element transmits light to adjacent tissue, and the reflectance spectra from the tissue are received by the photo-sensing element. This allows for precise determination of the tube's placement based on the characteristics of the tissue's reflectance spectra.

Application

- Potential use in military and emergency settings where accuracy and speed are critical.
- Could be incorporated into training tools for medical professionals.
- Potential use for surgeries requiring tracheal tube placement.

Highlighted Benefits

- Improves emergency endotracheal intubation first pass success, frequently implemented in suboptimal conditions.
- Also improves placement accuracy by non-specialists.
- Offers real-time feedback through the unique reflectance characteristic of tracheal tissue.
- Reduces the risk of improper tracheal tube placement.
- Minimizes reliance on less reliable clinical signs and end-tidal carbon dioxide levels for verification.



From: Bedolla, C.N., et al., Spectral Reflectance as a Unique Tissue Identifier in Healthy Humans and Inhalation Injury Subjects. Sensors 2022, 22, 3377.

Intubation Guidance Device

- **Patent**
  USP 10,980,955
- **Issued**
  April 20, 2021
- **Title**
  Airway management device for identification of tracheal and/or esophageal tissue
- **Inventors**
  Corinne Nawn, PhD
  Brian Souhan, PhD
- **Laboratory**
  US Army Institute of Surgical Research (ISR)
- **Nonexclusive License Available**

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Tactical Body Substance Isolation (BSI) Reloader

- **Patent**
  Provisional Application No. 63/538,123
  Filed on 23 May 2023
- **Title**
  Multilayer Glove Loader
- **Inventors**
  Smith, Noah
  Bayne, Andrew
- **Laboratory**
  Uniform Services University, Bethesda, MD
- **Nonexclusive License Available**

Multilayer Glove Loader

Tactical Body Substance Isolation (BSI) Reloader

DHA Research and Development Command seeks a partner interested in commercializing this technology.

The Technology

Figure 1: Concept art of the reloader worn by an operator

Downrange, medics efficiently conduct operations by wearing several layers of latex gloves on top of each other. In this way, medics can move from patient to patient or from chemical to patient by simply shedding a pair of gloves, while maintaining BSI safety.

However, when these layers run out, the medics' backup is a wadded-up ball of gloves in their pocket. This method is slow, inefficient, and wastes valuable, life-saving time.

The Tactical BSI Reloader addresses this problem **and allows medics to replace** several layers of gloves in a matter of seconds.

Applications

Pre-stage the Reloader by adding multiple layers of gloves for each hand.

Competitors/Collaborators

- Surgical Glove Manufactures
- Medical Supply Companies
- North American Rescue (Bear Claws®)

Highlighted Benefits

- Multiple layers of gloves
- Simple, easy to carry.
- Suspends the gloves open to such that the medic can easily don them.

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Ocular Chemical Injury Active Neutralization (OCIAN) Ring

DHA Research and Development seeks a partner interested in commercializing this technology.

The Technology

Chemical injuries represent substantial ocular trauma. A need exists to improve the current manual trickle/drip irrigation technique used in removing chemical/particulates and restore physiologic pH quickly to minimize further eye damage.

The OCIAN Ring allows for simultaneous corneal and deep forniceal irrigation for emergency eye irrigation. This technology can be inserted on the sight of injury by EMS providers, offering quicker response time and effective irrigation.

Application

Emergency Treatment of chemical eye burns, thermal burns, irritants, foreign bodies on the surface, cleansing prior to eye or eyelid surgery or infection.

Competition/Collaborators

- MorTan, Inc. (The Morgan Lens®)
- SP Bel-Art (Emergency Eye Wash Station)
- Essity Medical Solutions (Acute Irrigation)
- McKesson (Eye Wash Station)

Highlighted Benefits

- Safe, sterilizable and reusable pH probe to accurately test pH
- Allows for simultaneous corneal and forniceal irrigation
- High flow irrigation
- Durable self-contained system

OCIAN Ring At A Glance

- **Patent**
  PCT US2023/019072
  Filed on 28 April 2023

  Provisional Application No. 63/333.146
  Filed on 21 April 2022
- **Title**
  Ocular Chemical Active Neutralization (OCIAN) Ring
- **Inventors**
  Gregory B. Giles, MD
- **Laboratory**
  Defense Health Agency Brooke Army Medical Center, San Antonio, TX
- **Nonexclusive License Available**

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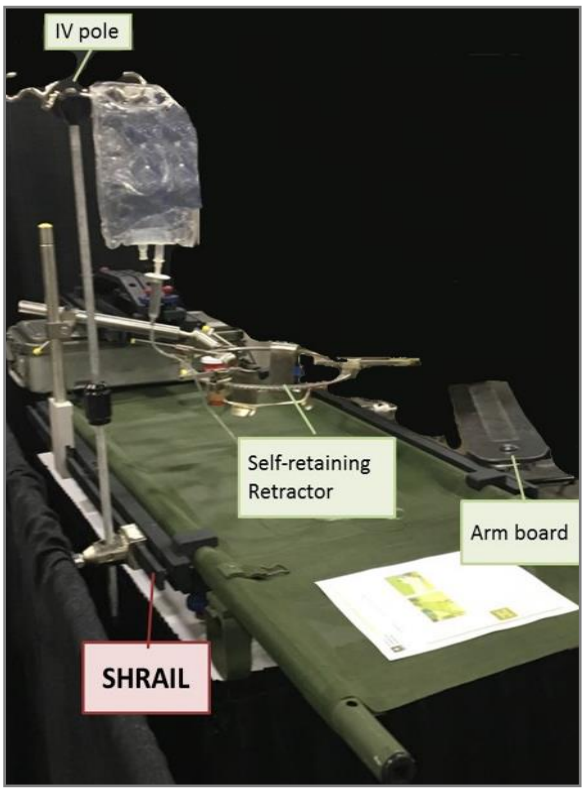
SHRAIL, Sirkin-Hiles Rail

DHA Research and Development seeks a partner interested in commercializing this technology.

The Technology

The SHRAIL™ is a rail system that enables the transformation of a standard NATO or Army litter into a highly functional operation table or ICU bed. The SHRAIL™ firmly attaches standard operating room medical devices to field litters. The rails provide a standardized means of attaching a broad range of medical devices, monitors, and products.



Application

The Army's invention is a means to connect the rails commonly found in operating rooms to stretchers and litters, thus greatly enhancing the capabilities of the platforms by the ready attachment of a full suite of surgical equipment. The result is the ability to employ advanced capabilities in emergency, field, and transportation operations outside the traditional operating room environment.

Highlighted Benefits

- Simple, Secure Attachment: Provides quick, easy, and solid attachment points on a litter for medical equipment compared to improvised methods such as clamps.
- Standardized: Compatibility with existing NATO litter, other litters, and a multitude of existing surgical instruments.
- Durable: The rails are lightweight, compact, corrosion resistant products that are easy to transport and store.

SHRAIL At A Glance

- **Patents**
  USP 10,010,460 issued 7/3/2018

  USP 10,898,394, issued 1/26/2021
- **Title**
  Surgical Rail Apparatus for Litter (aka SHRAIL™ and the Sirkin Hiles Rail)
- **Inventors**
  Dr. Maxwell Sirkin
  Dr. Jason Hiles
- **Laboratory**
  U.S. Army Medical Materiel Development Activity
- **Licensed Non-Exclusively to Morzine Medical LLC**

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Trimano and Spider2 Camera and Mobile Device Holder

- **Patent**
  Provisional Application No. 63/551,184
  Filed on 8 February 2024
- **Title**
  Connection Mechanism for Use with an Adjustable Instrument Support Arm
- **Inventors**
  Gee, Shawn M.
- **Laboratory**
  Keller Army Community Hospital, United States Military Academy at West Point
- **Nonexclusive License Available**

Trimano and Spider2 Camera and Mobile Device Holder

DHA Research and Development Command seeks a partner interested in commercializing this technology.

The Technology

A connection mechanism suitable for use with an adjustable instrument support arm during surgery that enables an adjustable instrument support arm during surgery providing a quick removable connection of a device to the support arm, through a universal female threaded connection. The Trimano and Spider2 are readily available in most ORs.

Over 64 million surgeries are performed annually in the US. Often, during surgery, it is necessary to take intraoperative photos and videos as well as interact with mobile devices. Holding a mobile device can be difficult and can cause contamination and interfere with the surgical procedure. Support arms are useful to hold surgical equipment and position patient limbs; however, alone, they do not provide an acceptable means to use cameras or mobile devices during surgery.

Applications

The device provides a secure connection to a phone, tablet, camera, and GoPro for taking photos and videos for educational content, control music playlists, answer calls, video chat, etc.

Competitors/Collaborators

- Arthrex (Trimano Surgical Arm)
- Stryker Corporation (Adaptor)
- Smyth & Nephew, PLC (Spider II)

Highlighted Benefits

- Modular and adaptable to multiple device types including but not limited to smart phone, tablets, cameras, and GoPros.
- Safe, secure autoclavable, and reusable.
- Quick removable connection.
- Offered with a one-time use sleeve with a transparent section for the camera lens.

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