

- Information about the new CNH Biodesign Program.
- Overview of what happens after creating an innovation with special emphasis on disseminating results including publication and other forms of dissemination.



The Biodesign Program

Children's National

Sheikh Zayed Institute for Pediatric Surgical Innovation

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The Sheikh Zayed Institute for Pediatric Surgical Innovation

Children's National Hospital

Professor of Anesthesiology Pediatrics and Critical Care Medicine The George Washington University

The Biodesign Program

Funded by Innovation Venture, SZI & FDA Grant

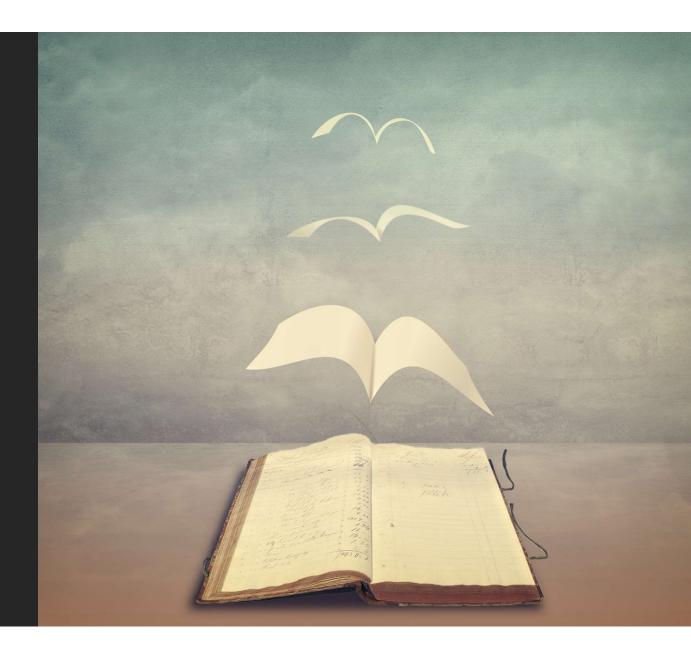


Aims:

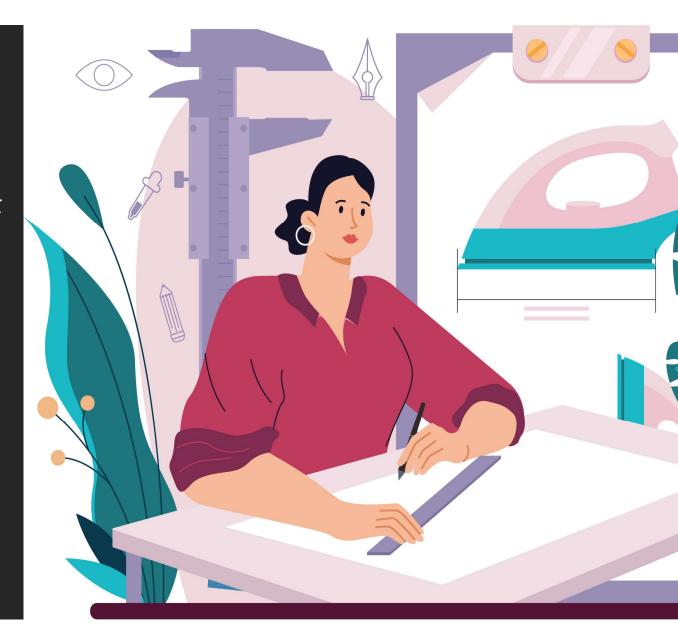
- 1. Educate clinicians about innovation methods and collect clinical problems that need attention.
- 2. Share CNH clinical needs with UMD bioengineering students and leverage promising capstone projects for further development in our Biodesign Program.
- 3. Develop novel and needed medical products intended for commercialization.

What is dissemination?

Dissemination is the targeted distribution of information and intervention materials to a specific public health or clinical practice audience. The intent is to spread knowledge and the associated evidence-based interventions. Dissemination occurs through a variety of channels, social contexts, and settings.



Dissemination through the lens of a designer/ entrepreneur...



What is marketing?

Marketing is the activity, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large.



























R&D/Manufacturing	FDA/Regulatory/IP	Clinical Studies/Early Customer Adoption	Commercial Launch
Iterative Prototyping	Biocompatibility/ Sterility	Product Evaluations	Free Samples
Engineering Drawings	Regulatory Report	Multi-Center Trials	Trade Shows
Patterns	Verification and Validation (V&V)	Value Analysis Assessments	Publishing in Trade Journals
Molds/Tooling	Intellectual Property Filing (Patent)	Publishing Studies in Journals/Poster Presentations	Sales/Licensing/ Acquisition

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What?

(the problem)

What?

(the problem)

Now What?

(new innovation)

What?

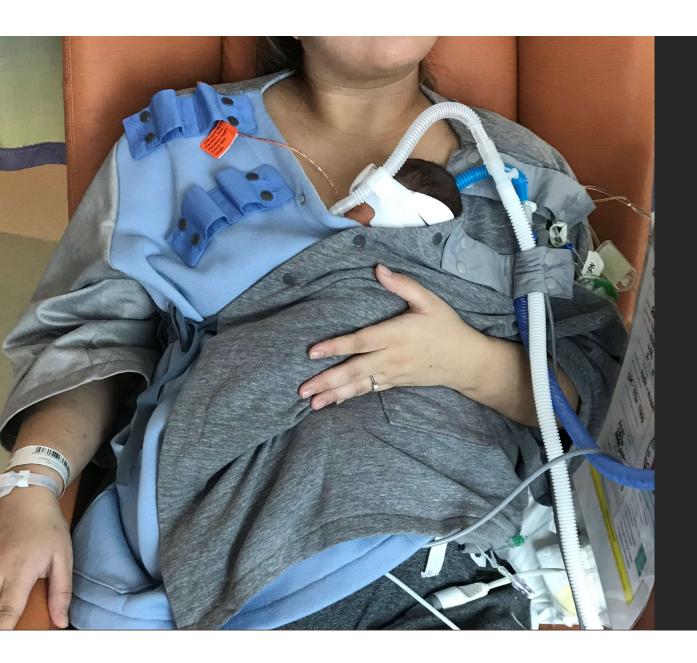
(the problem)

Now What?

(new innovation)

So What?

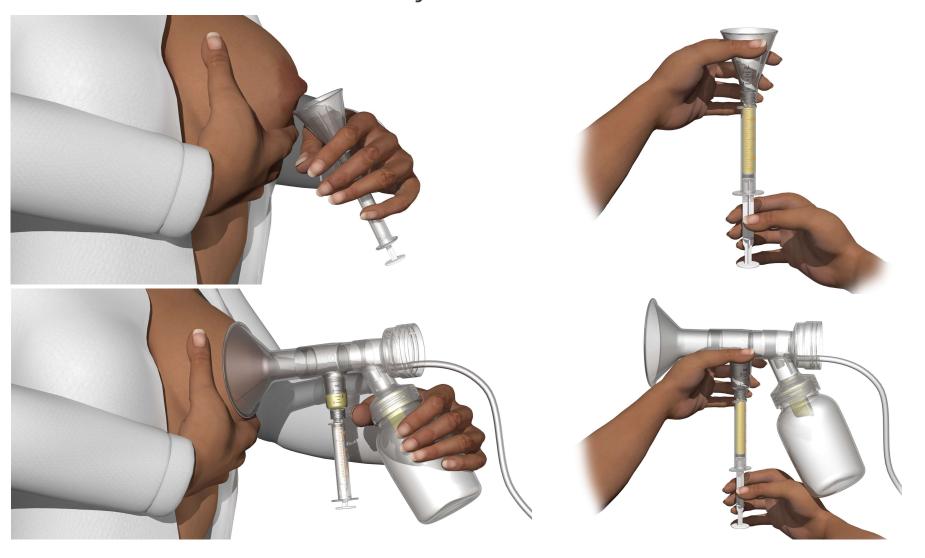
(making meaning from data)



For me, meaning is created when we can translate knowledge into something tangible to help people live healthier lives.



Primo-Lacto: A closed system for colostrum collection





Clinical Need

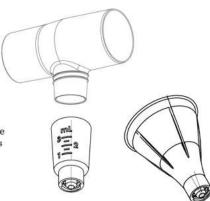
Photos from Stanford School Of Medicine.

Early Hand-Expression Increases Later Milk Production, by Dr. Jane
Morton MD.

There is a need to effectively collect colostrum in the first days of lactation and safely administer a mother's "liquid gold" to the neonate.

We have recently completed a clinical pilot study at three different hospitals:

Sharp Mary Birch in San Diego,
CA, John Muir Hospital in Walnut
Creek, CA, and Indiana Memorial
Hospital in South Bend, IN. The
most important critique from mothers,
LCs and nurses has been that the
connection between both the hand
expression funnel and adapter cup must be
more secure, as there were a few incidents
where the cup detached from the adapter
during a pumping session. Therefore I
have added a threaded connection to
ensure there is a tight fit.





RESEARCH ARTICLE

A prospective clinical study of Primo-Lacto: A closed system for colostrum collection

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Abstract

Background

Colostrum is the first nutritional liquid that comes out of the breast during lactation. Colostrum collection can be challenging due to the small volume produced, and because breast pumps are not designed for colostrum collection. Besides pumping colostrum, the generally accepted practice is to use any available container to hand-express colostrum. Transfer between containers may lead to contamination, higher chance of infection and loss of colostrum. Our aim was to understand if a dedicated colostrum collection system (Primo-Lacto, Maternal Life, LLC, Palo Alto, CA) is more effective than standard hospital practice.

Editor: Juan J. Loor, University of Illinois, UNITED STATES

Citation: Kristensen-Cabrera Al, Sherman JP, Lee

HC (2018) A prospective clinical study of Primo-

Lacto: A closed system for colostrum collection.

PLoS ONE 13(11): e0206854, https://doi.org/

Received: April 24, 2018

OPEN ACCESS

Accepted: October 19, 2018

10,1371/journal.pone.0206854

Published: November 12, 2018

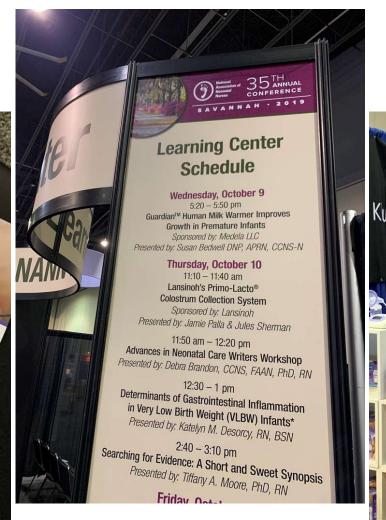
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Methods

Mothers who delivered preterm infants < 34 weeks gestation and mothers with non-latching infants were approached within 24 hours of delivery. Surveys were distributed to participating patients (n = 67), and nurses or lactation consultants (n = 89). Mothers compared ease of use, their confidence level and satisfaction with the amount collected during standard practice vs. the colostrum collection system. Nurses or lactation consultants compared ease of use, differences in colostrum loss and time invested collecting. Quantitative data were analyzed using the Wilcoxon signed rank test and qualitative data were analyzed with grounded theory methods.









The Empathy Project





Gaining Patient Perspectives On Disease Through Storytelling









Come be a part of a new pilot class! A maximum of 10 students will be selected. You will learn practical ethnography and video media skills while experiencing a "day in the life" of a patient. Your final group project will be a video that tells the story of a patient you have the opportunity to interview and shadow.













ARTICLE IN PRESS

SCHOLARLY INNOVATION

Gaining Perspectives on Patient and Family Disease Experiences by Storytelling

Hamsika Chandrasekar, MD; Seamus Harte, MFA; Jules Sherman, MFA; K. T. Park, MD; Henry C. Lee, MD

From the Stanford School of Medicine (Dr Chandrasekar), Palo Alto, Calif; Hasso Plattner Institute of Design (Mr Harte and Ms Sherman); Division of Pediatric Gastroenterology (Dr Park), Stanford School of Medicine; and Division of Neonatology (Dr Lee), Stanford

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1950 (1950) (1

Received for publication June 30, 2017; accepted January 26, 2018.

KEYWORDS: empathy; storytelling; undergraduate medical education

ACADEMIC PEDIATRICS 2018:

WHAT'S NEW?

A workshop on video storytelling of patients' lives enabled medical students to better understand disease experiences of patients and families.

BACKGROUND

EMPATHY IS A key element of patient-doctor relationships and can be defined as a multidimensional concept of perspective, compassion, and standing in a patient's shoes.1 Prior studies have reported decline in medical students' empathy.2-4 Several factors may contribute to this trend, including long work hours, technology, and time limitations for patient interactions.4

Clinician educators have developed interventions in order to cultivate greater levels of student empathy. These include narrative and creative arts, training in communications skills, and empathy-focused training

We designed a workshop on storytelling for medical students in which the final project was "A Day in the Life..." patient video. One goal was to evaluate whether this storytelling experience helped students better understand and empathize with patients' lives outside the clinical setting.

EDUCATIONAL APPROACH AND INNOVATION

Because this was a pilot project, we invited students at any level to participate. Eight second-year medical students, 1 third-year student, and 2 fourth-year students participated in 1 of 2 cycles. Five patient families volunteered as subjects. Students and patient families were given gift cards as a token of appreciation for participating.

Each workshop cycle consisted of 3 in-class sessions over 2 weeks (Figure). Four teams consisted of 2 students, and I team had 3 students. Four of 5 patient families had a child with inflammatory bowel disease. One family had an experience of surrogate parenthood and resulting preterm twins in the neonatal intensive care unit. In-class sessions consisted of instruction and assignments on these topics: creating stories within assigned constraints, story arc, and video/ audio editing. Between sessions, students completed assignments designed to develop video design skills. They also met, interviewed, and recorded interactions with patients and families

Separate focus groups were held for medical students and then for patients and families at the end of the project. The goal was to explore how patients and families felt about the experience, and how students felt this activity could supplement their training. Examples of questions included the following: 1) What was the most surprising outcome of this experience? 2) How did the students who interviewed you present your life and challenges? 3) How does a class like this potentially fit into medical school?

Focus groups were audiorecorded and transcribed. Dedoose 5.2.1 (SocioCultural Research Consultants, Los Angeles, Calif) was used to manage data and facilitate analysis. We used a form of thematic analysis for our approach.6 Two authors independently coded transcripts and then reviewed each other's coding and themes. Subsequent iterations were conducted until consensus was achieved. We did not seek respondent validation. This project was approved by the Stanford institutional review board.

RESULTS

Videos are available online (http://www.redesignhealthcare .org/the-empathy-project/videos/ under "Final student videos"). Seven students participated in the student focus group. Three families participated in focus group discussion. The remaining 2 families were interviewed separately.

Volume ■■, Number ■■



ABOUT

CLASSES

WORKSHOPS

BLOG

PUBLICATIONS

CONTACT

Class Home | Video Assignments | Inspiration | Class Photos | Participating Medical Students | Patient Issues | Instructor Details

The Empathy Project 2017

"Empathy isn't just something that happens to us - a meteor shower of synapses firing across the brain - it's also a choice we make: to pay attention, to extend ourselves. It's made of exertion, that dowdier cousin of impulse. Sometimes we care for another because we know we should, or because it's asked for, but this doesn't make our caring hollow. This confession of effort chafes against the notion that empathy should always rise unbidden, that genuine means the same thing as unwilled, that intentionality is the enemy of love. But I believe in intention and I believe in work. I believe in waking up in the middle of the night and packing our bags and leaving our worst selves for our better ones." - Leslie Jam

Published Manuscript:

Gaining Perspectives on Patient and Family Disease Experiences by Storytelling

Gaining Patient Perspectives On Disease Through Storytelling



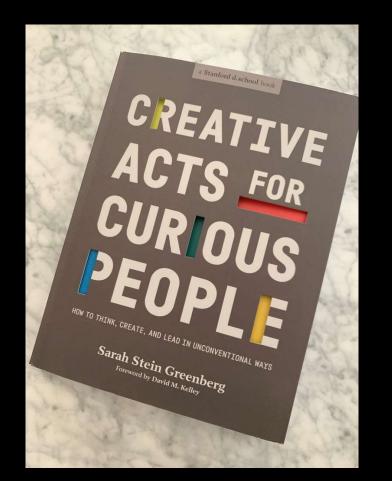
Institute of Design at Stanford







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A Day in the Life

in general, design work is for and about others, not the self.

If you understand the branch had computed yet drue people, lives, you're medme Birly's no enter or offer things that now ethers' moch, life in term whether you're is designed, a tracker, a better, or a common, student, replacture—comships now epilotish year inflarence in their. Bur or they're and kny to be preferstand, they'-less in mind that they don't wakeup in the memory and the early exposed and the companion of the contraction of the properties of the contraction of the contractio

As you embrace this mentality, you'll star to intuitively understand how to shape you work so it fits into the lives of others when than expecting them to change in order to show you.

Of course, this isn't easy. Human being ase complicated. You need to understain their hig picture, if you know and the part of them related to your week or to their relationship with you, was self-

This assignment below you try on onewer to per cluste to motion persons it is were to per cluste to motion persons the state of the person of the cluster of the state of the cluster of the cluster of the state of the cluster of the cluster of the belofs, behavior, and daily habits. Try a belofs, behavior, and daily habits, Try a belofs, behavior, and daily habits, Try a belof you are read to a down you we dispose to so many the companion of the cluster of the habits of the cluster of the cluster of the habits of the cluster of the cluster of the temperature of the cluster of the cluster of the based only on your goals for them or cluster states. The cluster of the cluster of the states of the cluster of the cluster of the cluster of the principles of the cluster of the cluster of the cluster of the principles of the cluster of the cluster of the cluster of the principles of the cluster of the cluster of the cluster of the principles of the cluster of the cluster of the cluster of the state of the cluster of the cluster of the cluster of the principles of the cluster of the cluster of the cluster of the state of the cluster of the cluster of the cluster of the state of the cluster of the cluster of the cluster of the state of the cluster of the cluster of the cluster of the state of the cluster of the cluster of the cluster of the state of the cluster of the cluster of the cluster of the state of the cluster of the cluster of the cluster of the state of the cluster of the cluster of the cluster of the state of the cluster of the cluster of the cluster of the state of the cluster of the cluster of the cluster of the state of the cluster of the cluster of the cluster of the state of the cluster of the cluster of the cluster of the state of the cluster of the cluster of the cluster of the state of the cluster of the cluster of the cluster of the state of the cluster of the cluster of the cluster of the state of the cluster of the cluster of the cluster of the state of the cluster of the cluster of the cluster of

Your goal is to make a day-in-the-life video about someone else that is five to seven minutes long. You'll build up to thi slowly-first spend a few days capturing their routines with photos, then go back and conduct video interviews based on to key images.

Find someone who will agree to be the















Problem:

Disconnection of tubes/lines/drains may go unnoticed in pediatric or adult patients which can exacerbate their health condition and leading to longer hospital stays.

Negative Outcomes:

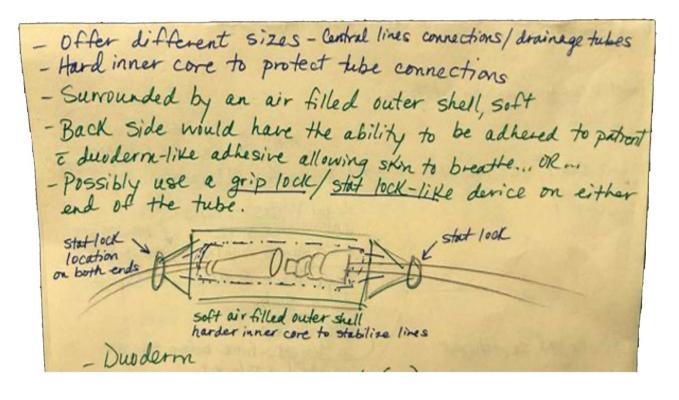
- Bloodstream infections
- Inaccurate I/O
- Inaccurate drain
- Leaked IV fluids
- Leaked IV medications



Need Statement:

A way to secure and prevent disconnections between a patient and life-saving fluids, nutrition, and antibiotics in order to reduce infections, and hospital stay.

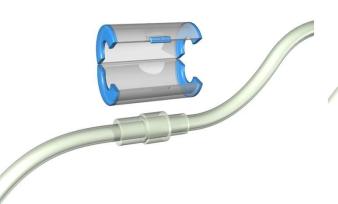




Connector Protector initial concept sketch by, Lori Irvin, BSN, RN, CPN

"Connector Protectors"

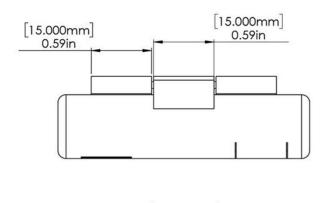
Tamper proof connections that can only be opened by nurses
 Have a clear window for easy visualization of the site

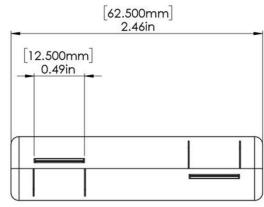


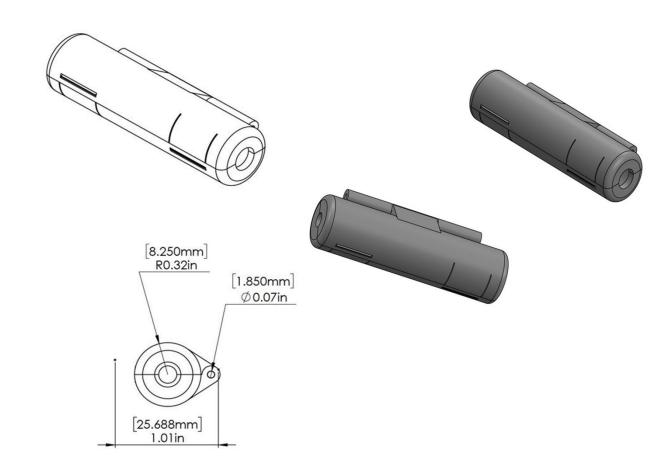




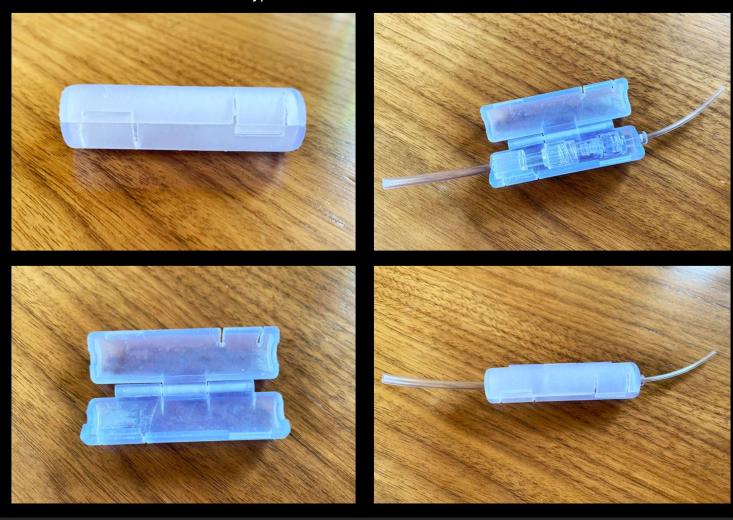
IV Line Connector Protector Prototype-Iteration 4



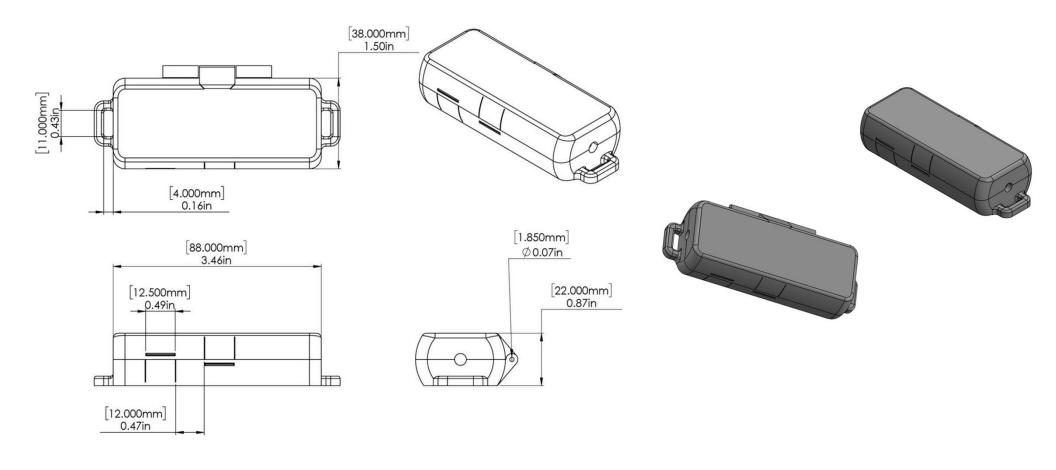




IV Line Connector Protector Prototype-Iteration 4



G-Tube Line Connector Protector Prototype-Iteration 4



G-Tube Line Connector Protector Prototype-Iteration 4



