



**AHEAD**   
SIMULATIONS

**CARL**

2022/23 Catalog

At AHead, we believe that effective education moves the world forward.

We believe that better education and better tools to conduct and standardize education will lead to better outcomes for both the trainee, the trainer, and the field as a whole.

Our goal, through CARL, is to help you conduct validated, safe, and standardized education in a time and cost effective manner.

And hopefully have some fun through the process.





Our **values** are at the core of **how we work** and what drives us to do better each day for every member of the CARL Community, and the field as a whole.

## Approachable

Interactions with our team are pressure-free and our products are simple, easy to use, and fun.

## Trusted

We emphasize validation, partner with the best universities and companies, and are committed to listening to our customers to fix problems, improve our product, and innovate.

## Humble

We are open and receptive to feedback, highly value the relationships we build, and never push our products - we understand your problems and help them solve them.

# CARL's Journey

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**2015**

CARL began as an engineering research project at Western University to provide better experiential training in their audiology program.



**2018**

CARL completed his second peer-reviewed validation study finding students who used the simulator performed better in clinical scenarios (see JAAA).

Soon after, AHead Simulations was founded and work on commercializing the CARL products began.



**2019**

CARL was officially launched to international markets in January 2019.

By the end of CARL's first year, CARL attended international conferences, and 50 CARL units found homes in 7 different countries around the world.



**2020**

After a turbulent beginning to 2020 and the worldwide health crisis, the need for CARL grew as safe hands-on training and social distancing was a priority.

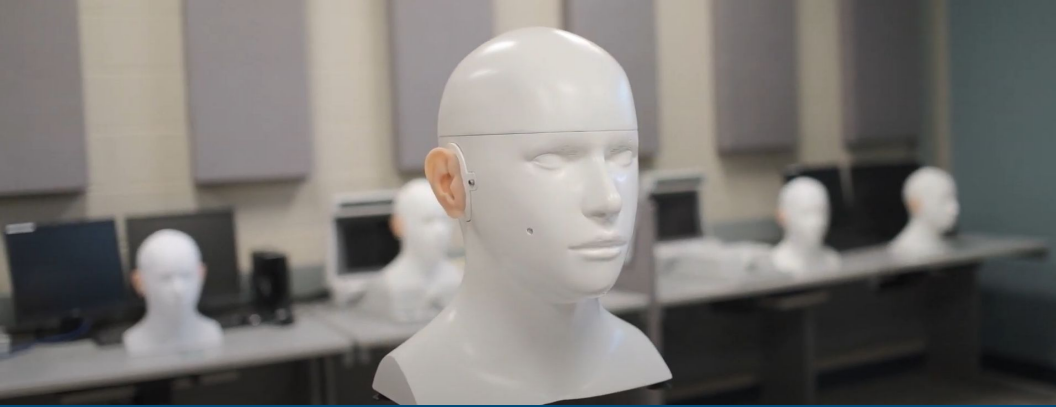


**2022 & Beyond**

A new CARL platform and Audio CARL unit launches which incorporates user feedback and suggestions from the previous 4 years of CARL use.

# Our Pillars of CARL

These pillars are what dictates how CARL is different from other manikins on the market, how we develop CARL, how we support the product, and our due diligence before releasing new products.



## 1 CARL is Credible

CARL products are built for clinicians, by clinicians, for real-world clinical workflows and experiences. All CARL products are immersed in deep scientific validation through peer-reviewed outlets.

## 2 CARL is Accessible

CARL products are designed to simulate a patient with no learning curve - just use CARL as you would a stand-in patient. Modularity is built into the platform as well as extensive resources to make CARL work for your intended use case. Real life is busy - CARL is available 24/7!

## 3 CARL is Universal

CARL products support any kind of hearing device, tool, or methodology to cover the whole audiologic process. No matter your experience or background, CARL is a safe patient for practice that allows you to explore, innovate, and take control of your own learning.

# Where will you use your CARL(s)?

Training  
Programs

“CARL has been a game-changer for our program. From hands-on learning labs to capstone projects to enhanced clinical skills, we use our CARL every semester in so many different ways.”

- **Dr. Lauren Felton**  
**Washington University in St. Louis**

In-Clinic  
Education &  
Certification

“I came to rely on the use of CARL as an integral part of onboarding. Within a single session, it allowed the rapid evaluation of proficiency and comfort with verification.”

- **Andreas Seelisch**  
**Hearing Solutions**

Patient  
Education

At Hearing Beyond, we use training tools like the CARL simulator to effectively teach patients about their hearing devices. It is a game changer for clinical practice.”

- **Frank Talarico**  
**Hearing Beyond**

Product  
Testing &  
Education

“CARL has become an invaluable piece of equipment at the Centre for Applied Audiology Research and we use it daily. Only our own creativity sets the limits for use of this fantastic development tool!”

- **Susanna Love Callaway**  
**Oticon A/S**



# What will you use your CARL(s) for?

Otoscopy



Hearing Aid Fitting &  
Real Ear Measurement

Cerumen  
Management



Earmold  
Impressions

Audiometry



Equipment  
Testing & Training

Recording Eardrum  
Level Sound Files



Measuring Eardrum  
Level Sound Levels

Patient Education



Workflow Training

*+ so much more!*

# Features of Any CARL Product



Rigid Construction and Impact-Resistant Finish

Quick-Switch Ear Anatomies from CT scans for Patient Specific Anatomy and Acoustics

Anthropomorphic Head Model (Within 1 SD of Average across 10 key measurements)

Varying CARL Models with Swappable Ear Sets to Support Your Use Case



Suctions Cups and Mounting Bracket for Universal Set Up in a Variety of Environments



# If CARL is For You, Let's Put Together Your Package!

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## Step 1: Pick your CARL (s)

The chosen CARL unit will ***dictate how you will receive feedback while using the manikin.***

**Base CARL** will provide you with no feedback - just a realistic patient to practice, test, and experiment with!

**Camera CARL** will provide you with visual feedback for location of objects in the ear canal.

**Audio CARL** will give you acoustic feedback by signifying audibility through LEDs, and through the ability to record sound files and measure sound level at the eardrum.

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## Step 2: Pick your ears














You can add additional ear anatomies to CARL to ***offer additional 'patients' to simulate and more difficult cases*** to practice, test, and experiment with.

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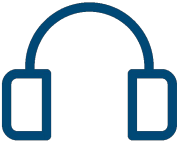
## Step 3: Pick Your Accessories

Your CARL accessories ***help you transport and set up your CARL.*** There is a CARL Carrying Case available, as well as a CARL Mount.

# STEP 1: Which CARL is Best For You?

<b>1</b> <b>Pick your CARL (s)</b>	<b>Audio CARL</b> <i>CARL can Hear!</i> 	<b>Camera CARL</b> <i>Get an inside view of CARL's ears</i> 	<b>Base CARL</b> <i>Accessible &amp; Simple</i> 	<b>Baby CARL</b> <i>Pediatric-size Base CARL</i> 
Hearing Aid Fitting 	✓	✓	✓	✓
Cerumen Management 	✓	✓	✓	✓
Earmold Impressions 	✓	✓	✓	✓
Patient Education 	✓	✓	✓	✓
Equipment Tests/Training 	✓	✓	✓	✓
In-Canal Demonstrations 	✗	✓	✗	✗
Audiometry 	✓	✗	✗	✗
Record Sound 	✓	✗	✗	✗
Measure SPL 	✓	✗	✗	✗

# 1 Pick Your CARL: Audio CARL



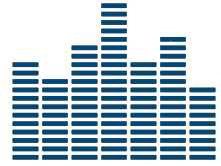
## Test Hearing

"Test" CARL's hearing across a range of representative hearing losses



## Record Sound

Microphones mounted at CARL's eardrum for in-canal sound recordings

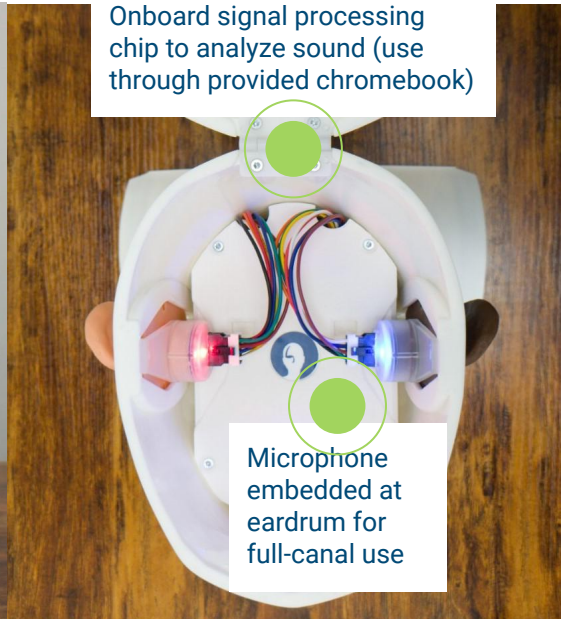


## Measure SPL

Quantification and visualization of sound delivered to CARL's eardrum

**Audio CARL** will give you acoustic feedback by signifying audibility through LEDs, and through the ability to record sound files and measure sound level at the eardrum.

**Audio CARL** also has all the same great features as a Base CARL.



# 1 Pick Your CARL: Camera CARL

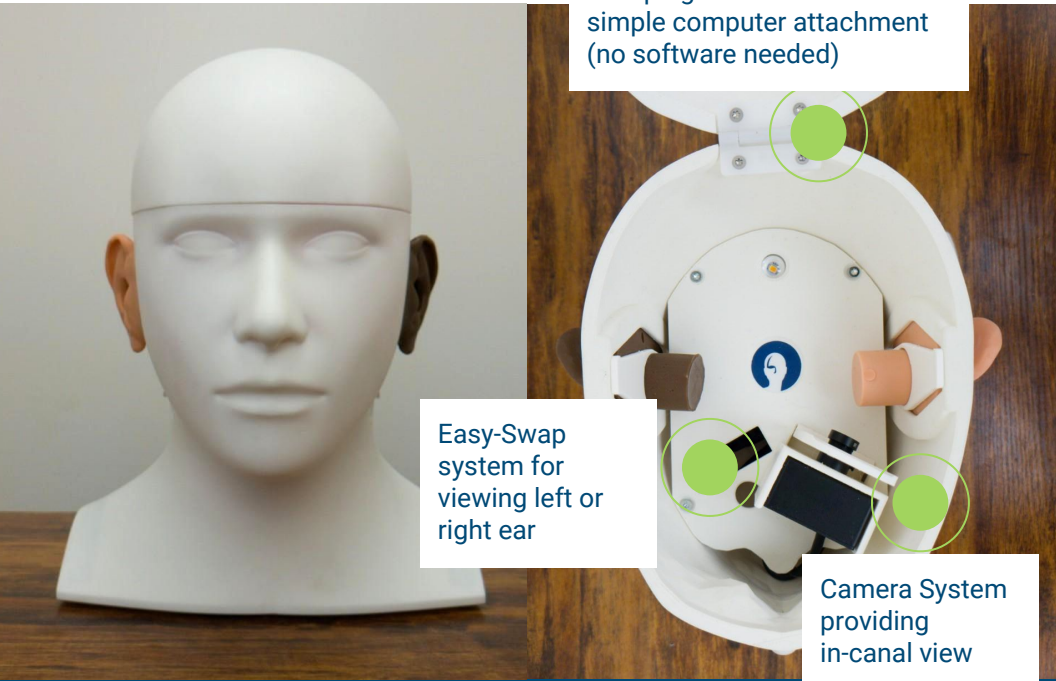


## In-Canal Demonstrations

With the in-head camera, get an inside view to CARL's eardrum

**Camera CARL** will provide you with visual feedback for location of objects in the ear canal. This visualization will work with any of Base CARL's use cases, such as hearing aid fitting, earmold impressions, or cerumen management.

**Camera CARL** also has all the same great features as a Base CARL.



USB-plug in back of CARL for simple computer attachment (no software needed)

Easy-Swap system for viewing left or right ear

Camera System providing in-canal view

# 1 Pick Your CARL: Basic Models

Base CARL



Baby CARL



## 2 Pick Your Ear Anatomies

All of CARL's ears are **made directly from patient-specific CT scans.**

**Two different ear materials** available suited to **different tasks.**

**Ears are easily swappable** in and out of the CARL head to **simulate different patients & anatomy.**

\*One of each ear in a Large Anatomy are included with every CARL



		Realistic Ear	Durable Ear
Otoscopy		✓	✗
Hearing Aid Fitting		✓ (Validated)	✓ (Not validated)
Cerumen Management		✓	✓
Earmold Impressions		✗	✓
Patient Education		✓	✓
Equipment Tests/Training		✓	✓
In-Canal Demonstrations		✗	✓
Realism of ear texture/stiffness		✓	✗
Realism of ear anatomy		✓	✓

### Five Swappable Ear Anatomies Available for your CARLs

**LARGE**  
(Included)

||

**SMALL**

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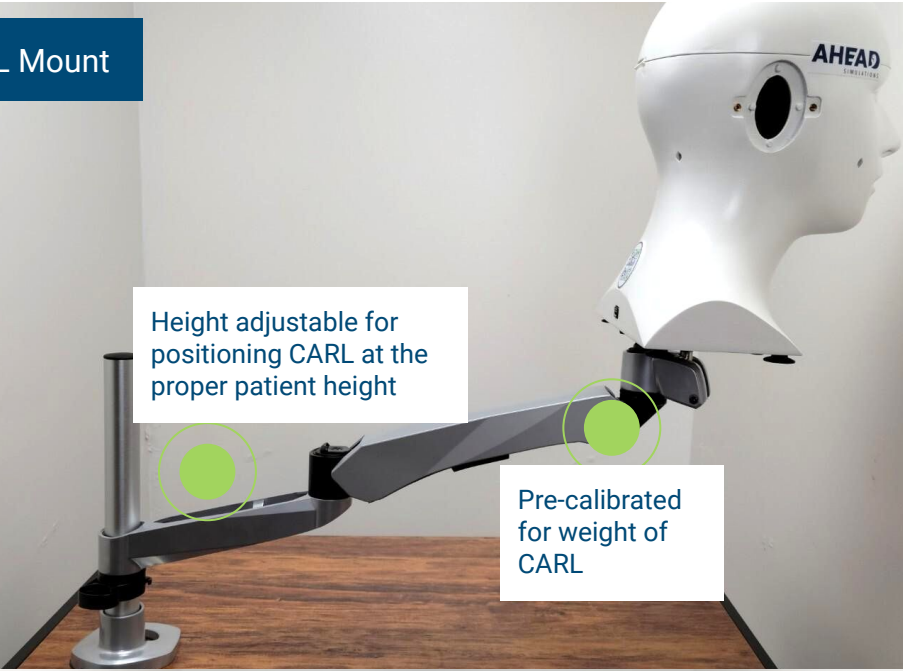
**BENDY**

Easy / Common Case

Hard / Rare Case

# 3 Pick Your Accessories

## CARL Mount



Height adjustable for positioning CARL at the proper patient height

Pre-calibrated for weight of CARL

## CARL Carrying Case



Handle & Wheels for easy transport through airports and every day transport

The gold standard case manufacturer for the ultimate balance of weight vs safety

# Envisioning your CARL Space

## How Will You Use Your CARL(s)?

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### **1-2 CARLs**

Educators can conduct small or large group demonstrations to learners (student, patient, colleague etc) and can have those learners demonstrate the new skills afterwards by taking turns practicing on CARL.

1-2 CARLs are typically set up in a Clinic Room, Teaching/Lecture Room, Research Lab, or On-the-go.

### **3-5 CARLs**

Educators can offer more focused, experiential, collaborative learning environments with a small group for demonstrations or training. More learners are given the opportunity to work hands-on with CARL while they are being taught, and can experience the learning/doing phase in real time. No delay is needed between explanation and experimentation, and trainees can go at their own pace without the pressure of an audience.

### **6+ CARLs**

Set up integrated, collaborative simulation labs or use a fleet of CARLs to standardize training and testing criteria across multiple clinics/locations. Large group demonstrations/training can be conducted that allows for multiple learners to learn by doing all at the same time. CARLs can also be shared across departments or locations for multiple purposes.





# Owning a CARL is not the end!

## We are here to support you!

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### **Email and Phone Support available Mon - Fri 9am EST - 4pm EST**

#### **Email Support**

Contact your AHead representative, or visit  
[www.aheadsimulations.com/pages/contact-us](http://www.aheadsimulations.com/pages/contact-us)

#### **Call Support**

Phone support available between 9am EST and 4pm EST on Monday - Friday  
+1.855.560.2275 (+1.855.560-CARL)

#### **Video Support**

Book a meeting with your AHead representative or visit  
[www.aheadsimulations.com/pages/contact-us](http://www.aheadsimulations.com/pages/contact-us)

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### **Warranty**

Each CARL unit includes a "CARL Care" 2-year extended warranty to protect against any defect or damage that interferes with your use of CARL.

Each set of ears are covered under a six-month full coverage warranty for any defects or damages that interferes with its use.

See [www.aheadsimulations.com](http://www.aheadsimulations.com) for full details.

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"I have been very impressed with the AHead team. If we have any questions or concerns, they get back to us immediately and talk us through what needs to be done."

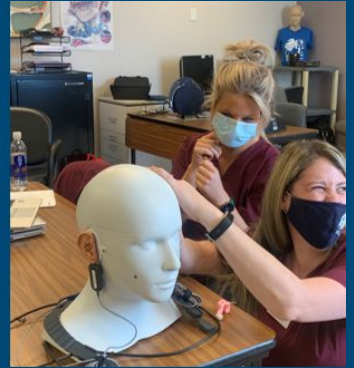
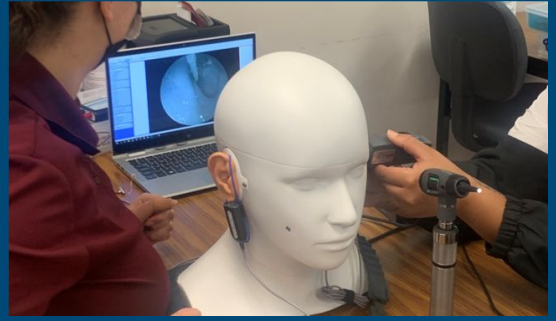
**- Dr. Cynthia Richburg**  
**Wichita State University**



CARL Products	Includes	MSRP
<b>Audio CARL</b>	<ul style="list-style-type: none"> <li>- Base CARL Head with microphone and processing system with LED indicators</li> <li>- Chromebook with required power and connection cord and preloaded software</li> <li>- 1 set of CARL Large Realistic</li> <li>- 1 set of CARL Large Durable</li> <li>- 1 set of CARL Microphone Ears</li> <li>- Unboxing &amp; Quick Start Documents</li> </ul>	\$6999 USD <i>(\$6499 if order placed in 2022)</i>
<b>Camera CARL</b>	<ul style="list-style-type: none"> <li>- Base CARL Head with Camera system</li> <li>- USB-USB cable for camera system</li> <li>- 1 set of CARL Large Realistic</li> <li>- 1 set of CARL Large Durable</li> <li>- Unboxing &amp; Quick Start Documents</li> </ul>	\$4799 USD
<b>Base CARL</b>	<ul style="list-style-type: none"> <li>- Base CARL Head</li> <li>- 1 set of CARL Large Realistic</li> <li>- 1 set of CARL Large Durable</li> <li>- Unboxing &amp; Quick Start Documents</li> </ul>	\$2999 USD
<b>Baby CARL</b>	<ul style="list-style-type: none"> <li>- Baby CARL Head</li> <li>- 1 set of Baby CARL Realistic</li> <li>- 1 set of Baby CARL Durable</li> <li>- Unboxing &amp; Quick Start Documents</li> </ul>	\$2499 USD

<b>CARL Ears</b>	<b>Compatible With</b>	<b>MSRP</b>
CARL Ear Set Large - Realistic	Audio, Camera, Base <i>(Included)</i>	\$399 USD
CARL Ear Set Large - Durable	Audio, Camera, Base <i>(Included)</i>	\$399 USD
CARL Ear Set Small - Realistic	Audio, Camera, Base	\$399 USD
CARL Ear Set Small - Durable	Audio, Camera, Base	\$399 USD
CARL Ear Set Bendy - Realistic	Audio, Camera, Base	\$399 USD
CARL Ear Set Bendy - Durable	Audio, Camera, Base	\$399 USD
CARL Ear Set Microphone	Audio <i>(Included)</i>	\$799 USD
Baby CARL Ear Set Realistic	Baby <i>(Included)</i>	\$299 USD
Baby CARL Ear Set Durable	Baby <i>(Included)</i>	\$299 USD

<b>CARL Accessories</b>	<b>Compatible With</b>	<b>MSRP</b>
CARL Mount	Audio, Camera, Base, Baby	\$399 USD
CARL Carrying Case	Audio, Camera, Base, Baby	\$799 USD



Search "AHead Simulations" on your favourite platforms  
[www.aheadsims.com](http://www.aheadsims.com)



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