# Writing Portfolio

## Medical Writer • Storyteller • Instructor

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# Content

Imagine a world where the complexities of medical science are unveiled, not as dry texts buried in journals, but as captivating stories, visual masterpieces, and interactive experiences. My medical writing portfolio combines scientific rigor and creative storytelling. I humbly request that while the items presented here are not bound by NDA, they should only be circulated for making hiring decisions.

Let me give you a tour of what you'll see in the next few pages.

## Scientific Writing

Dense 40-page research papers transformed into an elegant dance of words in conference posters. Even peer-reviewed journals can be page-turners with large citations.

## Healthcare Promotional:

I create marketing content that not only complies with industry standards but is so compelling, you'd want to read it twice.

## Infographics & Brochures:

These are your cheat sheets to the medical world. Digestible, fun, and so visually striking you'll want to hang them on your wall.

## Branded/Unbranded Content:

Regulatory guidelines meet gripping storytelling. The result? Medical content that you can't put down.

## Product Labels:

It's not just text on a box; it's your first interaction with a product. I make sure its eye-catching yet regulatory compliant.

## Science Translational Materials:

Imagine translating the language of cells and molecules into everyday chatter. I strive to make science approachable and relatable.

## Public Speaking Engagements:

I am often invited to give talks to stakeholders that summarize key results from subject matter experts (SMEs). Hear me talk about the latest high science trends in Artificial Intelligence in this section.

## Animations & Explainer Videos:

Who said medical science can't be binge-worthy? From 3D renderings of cellular processes to patient testimonials, it's medical prime time in here.

## Web Design & Social media:

Think of it as the digital stage where all these elements come alive, designed to pull you in and make you click that "share" button.

Ready to dive into the riveting world of medical storytelling with me? Go ahead. Scroll down.

SCIENTIFIC WRITING:

# MANUSCRIPTS

An assortment of publications that showcase first authorship and collaborative research.

**2,137** Citations
**18** Manuscripts
**2** patents


Hum Brain Mapp. 2016 Nov; 37(11): 3911–3928.
Published online 2016 Oct 6. doi: 10.1002/hbm.23285
PMCID: PMC6867365
PMID: 27353970

Dynamic functional connectivity shapes individual differences in associative learning

Zainab Fatima,[1] Natasha Kovacevic,[1] Bratislav Misic,[2] and Anthony Randal McIntosh[1,3]

February 01 2019

**Functional connectivity-based subtypes of individuals with and without autism spectrum disorder**

**In Special Collection:** CogNet

Amanda K. Easson, Zainab Fatima, Anthony R. McIntosh

Check for updates

Author and Article Information

*Network Neuroscience* (2019) 3 (2): 344–362.

https://doi.org/10.1162/netn_a_00067 **Article history**

NIH National Library of Medicine
National Center for Biotechnology Information

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Soc Cogn Affect Neurosci. 2007 Dec;2(4):313-22. doi: 10.1093/scan/nsm030.

Attending to the present: mindfulness meditation reveals distinct neural modes of self-reference

Norman A S Farb, Zindel V Segal, Helen Mayberg, Jim Bean, Deborah McKeon, Zainab Fatima, Adam K Anderson

Affiliations + expand

PMID: 18985137 PMCID: PMC2566754 DOI: 10.1093/scan/nsm030

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ACTIONS

Cite

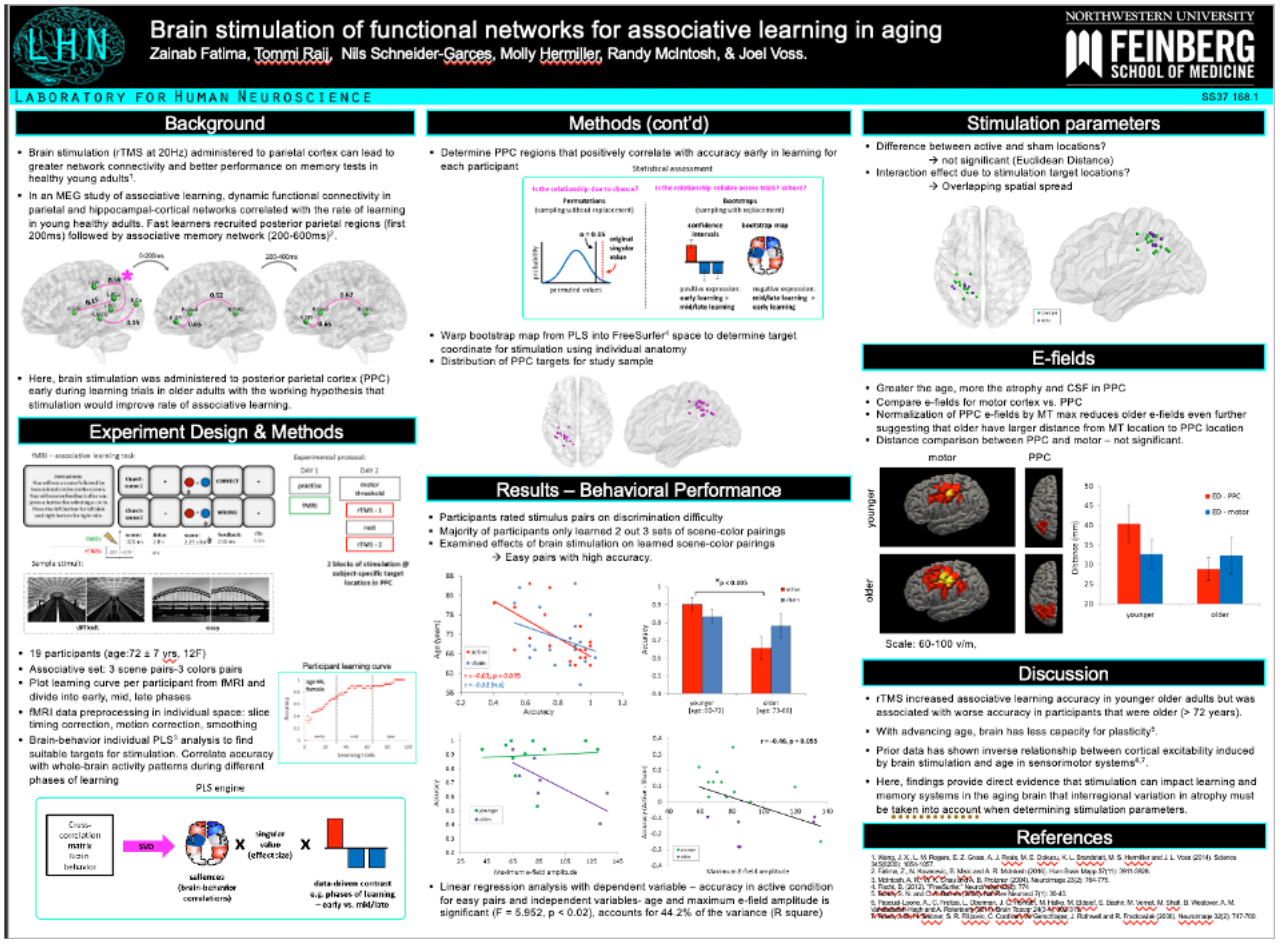
Collections

**SCIENTIFIC WRITING:**

# CONFERENCE POSTERS

Sample of conference poster presentation with literature review and references in the area of transcranial magnetic stimulation (TMS).

**32** Posters
**10** Countries
**35** Collaborators



SCIENTIFIC WRITING:

# EDITORIAL/PEER REVIEW

Sample of editorial peer-review experience for a top-tier journal in Neuroinformatics: an interdisciplinary field that combines modeling and neuroscience to understand complex neural systems.

**5,559** Views
**1,435** Downloads
**69** Citations

frontiers in NEUROINFORMATICS

ORIGINAL RESEARCH ARTICLE
published: 21 May 2014
doi: 10.3389/fninf.2014.00057

## Accumulated source imaging of brain activity with both low and high-frequency neuromagnetic signals

***Jing Xiang[1]*, Qian Luo[2], Rupesh Kotecha[1,3], Abraham Korman[1], Fawen Zhang[4], Huan Luo[5], Hisako Fujiwara[1], Nat Hemasilpin[1] and Douglas F. Rose[1]***

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[2] *Department of Neurosurgery, Saint Louis University, St. Louis, MO, USA*
[3] *Cleveland Clinic Foundation, Department of Radiation Oncology, Cleveland, OH, USA*
[4] *Department of Communication Sciences and Disorders, University of Cincinnati, Cincinnati, OH, USA*
[5] *State Key Laboratory of Brain and Cognitive Science, Institute of Biophysics, Chinese Academy of Sciences, Beijing, China*

***Edited by:***
*Xi Cheng, Lieber Institute for Brain Development, USA*

***Reviewed by:***
*Stephen Ellis Robinson, National Institutes of Health, USA*
*Zainab Fatima, Rotman Research Institute, Canada*

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*Jing Xiang, Division of Neurology, Cincinnati Children's Hospital Medical Center, 3333 Burnet Ave., Cincinnati, OH 45229, USA*
*e-mail: jing.xiang@cchmc.org*

Recent studies have revealed the importance of high-frequency brain signals (>70 Hz). One challenge of high-frequency signal analysis is that the size of time-frequency representation of high-frequency brain signals could be larger than 1 terabytes (TB), which is beyond the upper limits of a typical computer workstation's memory (<196 GB). The aim of the present study is to develop a new method to provide greater sensitivity in detecting high-frequency magnetoencephalography (MEG) signals in a single automated and versatile interface, rather than the more traditional, time-intensive visual inspection methods, which may take up to several days. To address the aim, we developed a new method, accumulated source imaging, defined as the volumetric summation of source activity over a period of time. This method analyzes signals in both low- (1~70 Hz) and high-frequency (70~200 Hz) ranges at source levels. To extract meaningful information from MEG signals at sensor space, the signals were decomposed to channel-cross-channel matrix (CxC) representing the spatiotemporal patterns of every possible sensor-pair. A new algorithm was developed and tested by calculating the optimal CxC and source location-orientation weights for volumetric source imaging, thereby minimizing multi-source interference and reducing computational cost. The new method was implemented in C/C++ and tested with MEG data recorded from clinical epilepsy patients. The results of experimental data demonstrated that accumulated source imaging could effectively summarize and visualize MEG recordings within 12.7 h by using approximately 10 GB of computer memory. In contrast to the conventional method of visually identifying multi-frequency epileptic activities that traditionally took 2–3 days and used 1–2 TB storage, the new approach can quantify epileptic abnormalities in both low- and high-frequency ranges at source levels, using much less time and computer memory.

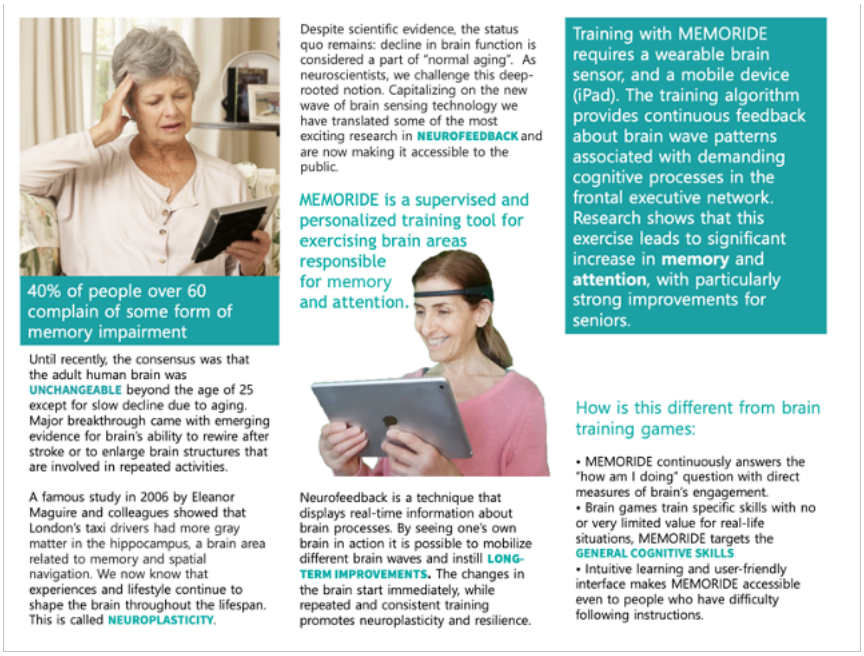
**Keywords: magnetoencephalography, brain, multi-frequency, high-frequency oscillations, magnetic source imaging**

HEALTHCARE PROMOTIONAL:

# UNBRANDED/BRANDED

Memoride (unbranded) or Sensaride (branded) is a brain training mobile app that uses neurofeedback to help seniors improve their memory and attention.

Excerpt from the client brochure (top) of the app is shown here. These outreach materials were developed to translate scientific concepts for HCPs and clients in prominent retirement communities such as Rivera, Chartwell, Aviva, and Kensington Health. Sample of peer-to-peer slide deck is shown (bottom) from branded campaign.



40% of people over 60 complain of some form of memory impairment

Until recently, the consensus was that the adult human brain was **UNCHANGEABLE** beyond the age of 25 except for slow decline due to aging. Major breakthrough came with emerging evidence for brain's ability to rewire after stroke or to enlarge brain structures that are involved in repeated activities.

A famous study in 2006 by Eleanor Maguire and colleagues showed that London's taxi drivers had more gray matter in the hippocampus, a brain area related to memory and spatial navigation. We now know that experiences and lifestyle continue to shape the brain throughout the lifespan. This is called **NEUROPLASTICITY**.

Despite scientific evidence, the status quo remains: decline in brain function is considered a part of "normal aging". As neuroscientists, we challenge this deep-rooted notion. Capitalizing on the new wave of brain sensing technology we have translated some of the most exciting research in **NEUROFEEDBACK** and are now making it accessible to the public.

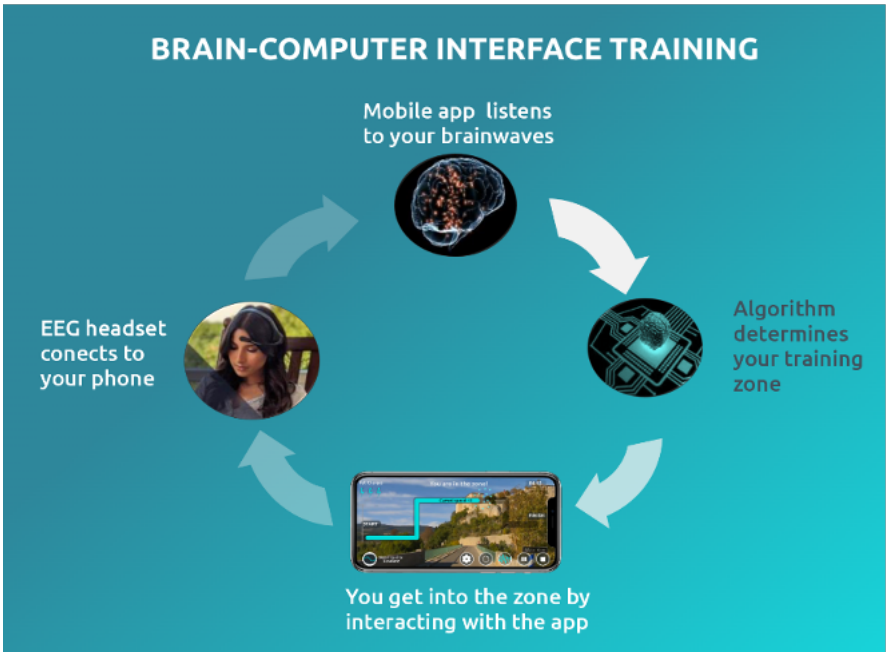
MEMORIDE is a supervised and personalized training tool for exercising brain areas responsible for memory and attention.

Neurofeedback is a technique that displays real-time information about brain processes. By seeing one's own brain in action it is possible to mobilize different brain waves and instill **LONG-TERM IMPROVEMENTS.** The changes in the brain start immediately, while repeated and consistent training promotes neuroplasticity and resilience.

Training with MEMORIDE requires a wearable brain sensor, and a mobile device (iPad). The training algorithm provides continuous feedback about brain wave patterns associated with demanding cognitive processes in the frontal executive network. Research shows that this exercise leads to significant increase in **memory** and **attention**, with particularly strong improvements for seniors.

How is this different from brain training games:

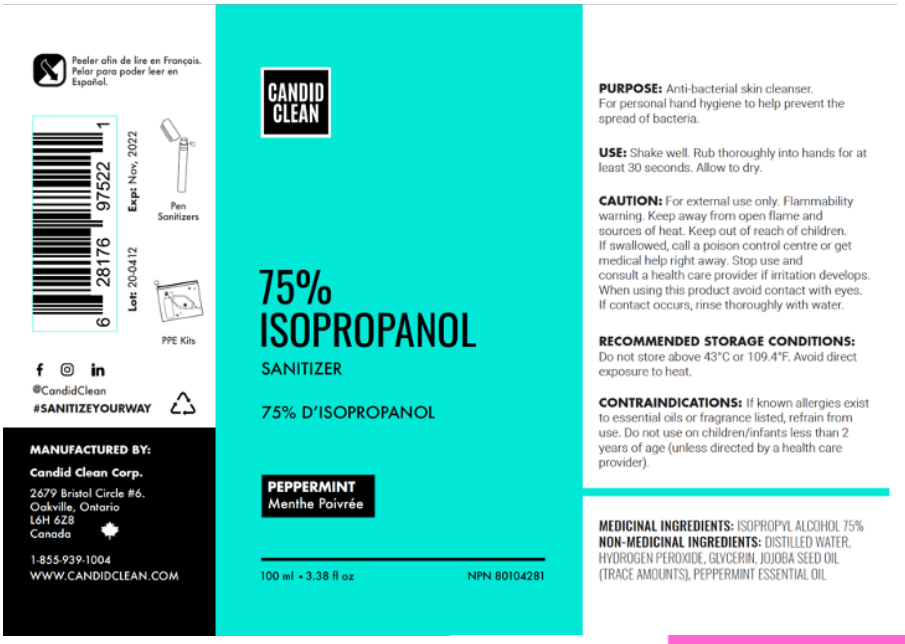
- MEMORIDE continuously answers the "how am I doing" question with direct measures of brain's engagement.
- Brain games train specific skills with no or very limited value for real-life situations, MEMORIDE targets the **GENERAL COGNITIVE SKILLS**
- Intuitive learning and user-friendly interface makes MEMORIDE accessible even to people who have difficulty following instructions.

HEALTHCARE PROMOTIONAL:

# PRODUCT LABELS / PACKAGING

Copy of product labels that are regulatory compliant.

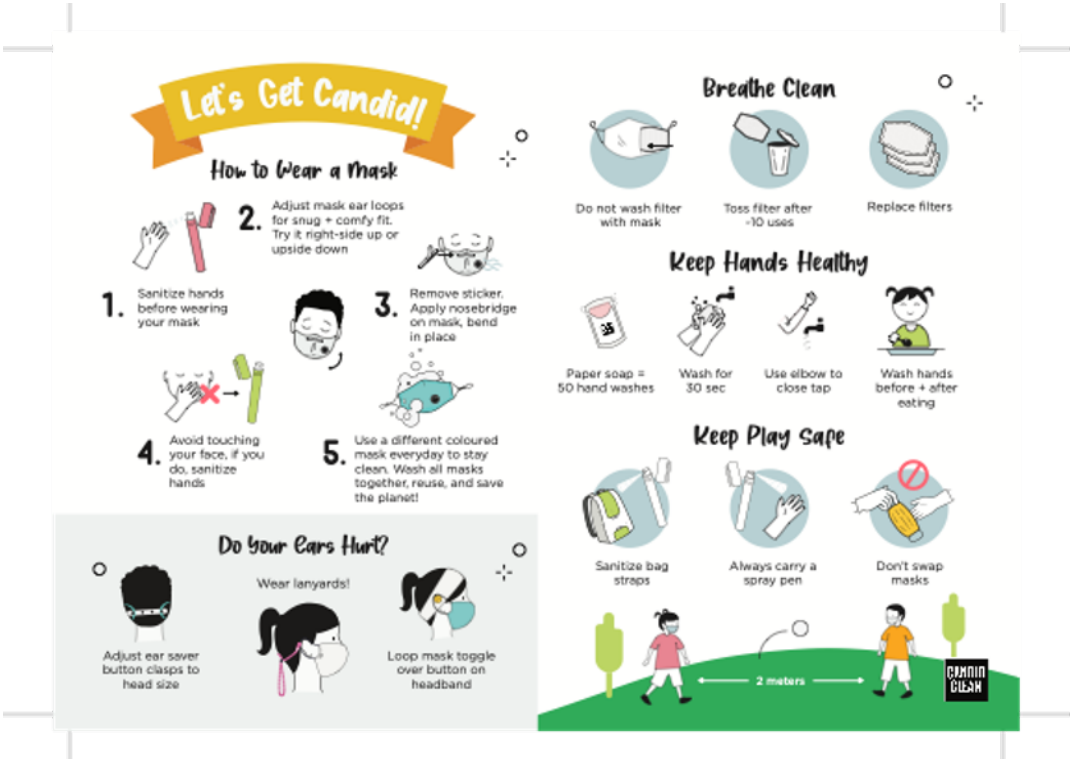




HEALTHCARE PROMOTIONAL:

# INFOGRAPHICS / BROCHURES

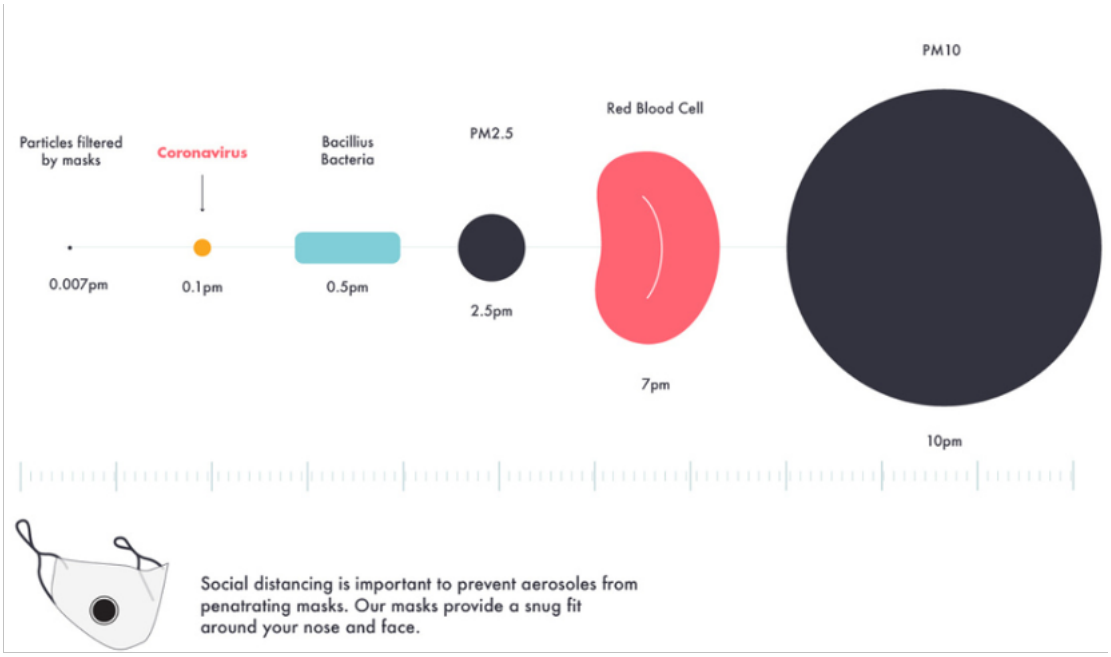
Example of a bilingual educational brochure to teach kids how to wear masks in the public health domain.

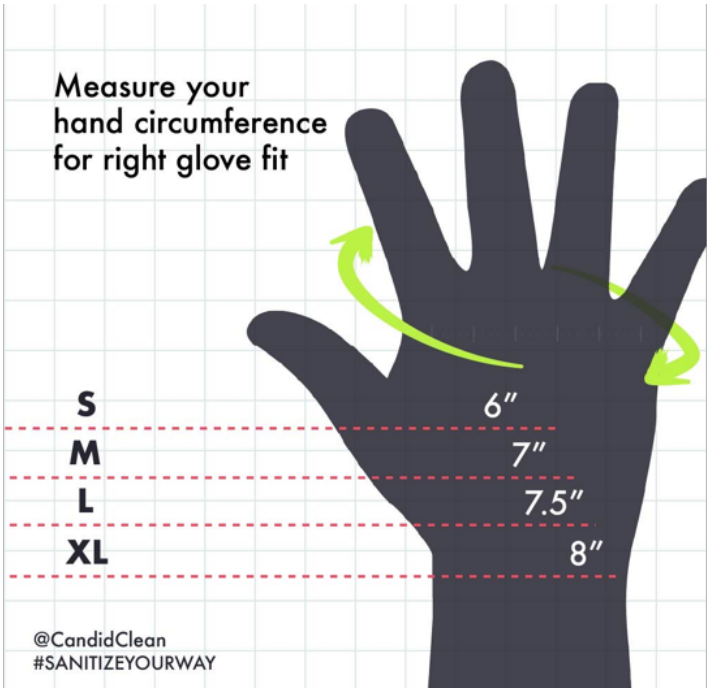



**HEALTHCARE PROMOTIONAL:**

# SCIENCE TRANSLATIONAL MATERIALS

Example materials for distribution through social media and peer-to-peer slide decks.
The examples shown are specific to personal protective equipment (PPE)



**HEALTHCARE PROMOTIONAL:**

# USER MANUAL

Here is a user manual developed for Candid Clean – a company that formulated Health Canada approved hand sanitizer and Made in Canada sanitizer stands during the pandemic.

## HOW TO USE THE CANDID STAND

1-855-939-1004
sales@candidclean.com

CANDID CLEAN™

**1**

**REMOVE THE BACK**

To open the back panel, unscrew the 3 nylon thumb screws. Use the black handle to lift up (be mindful of bottom screw) and off.

**2**

**PULL OUT THE TRAY**

Take the tray out to clean and replace with Candid Clean 1L refill bottle.

**3**

**UNLOCK BOTTLE**

Twist cap of new bottle to release trigger before placing in tray.

Use finger to lift flapper to position bottle.

**4**

**LIFT FLAPPER**

Rubber pads keep bottle secure.

**5**

**BOTTLE PLACEMENT**

Slide the tray and the bottle under the lifted flapper between the two rubber pads until the bottle's nozzle is fully out of the front window. Make sure the nylon screw sits above the bottle's pump. Release flapper.

**6**

**REFILL STORAGE**

Store extra refill bottle at the bottom of the stand for quick change.

**7**

**STEP ON PEDAL**

Step on pedal to prime the spray nozzle. Step on pedal again to make sure the spray is a fine mist. Then, re-attach the stand's back panel with the 3 nylon thumb screws.

**8**

**SANITIZE HANDS**

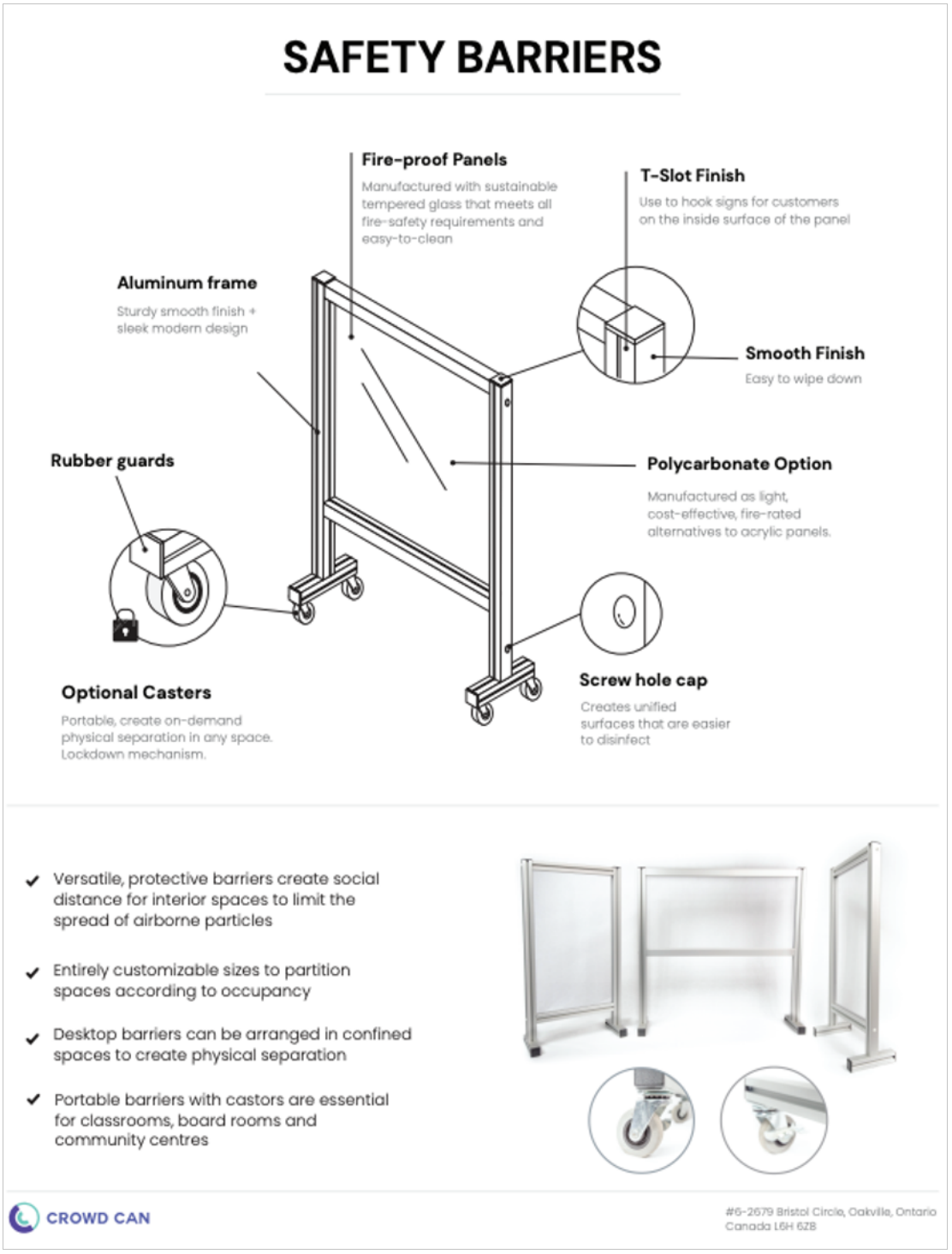
Place both hands below the nozzle and step on the pedal to dispense Candid Clean. One pump is sufficient to sanitize both hands.

@CandidClean
www.candidclean.com

**HEALTHCARE PROMOTIONAL:**

# SPECIFICATION SHEET

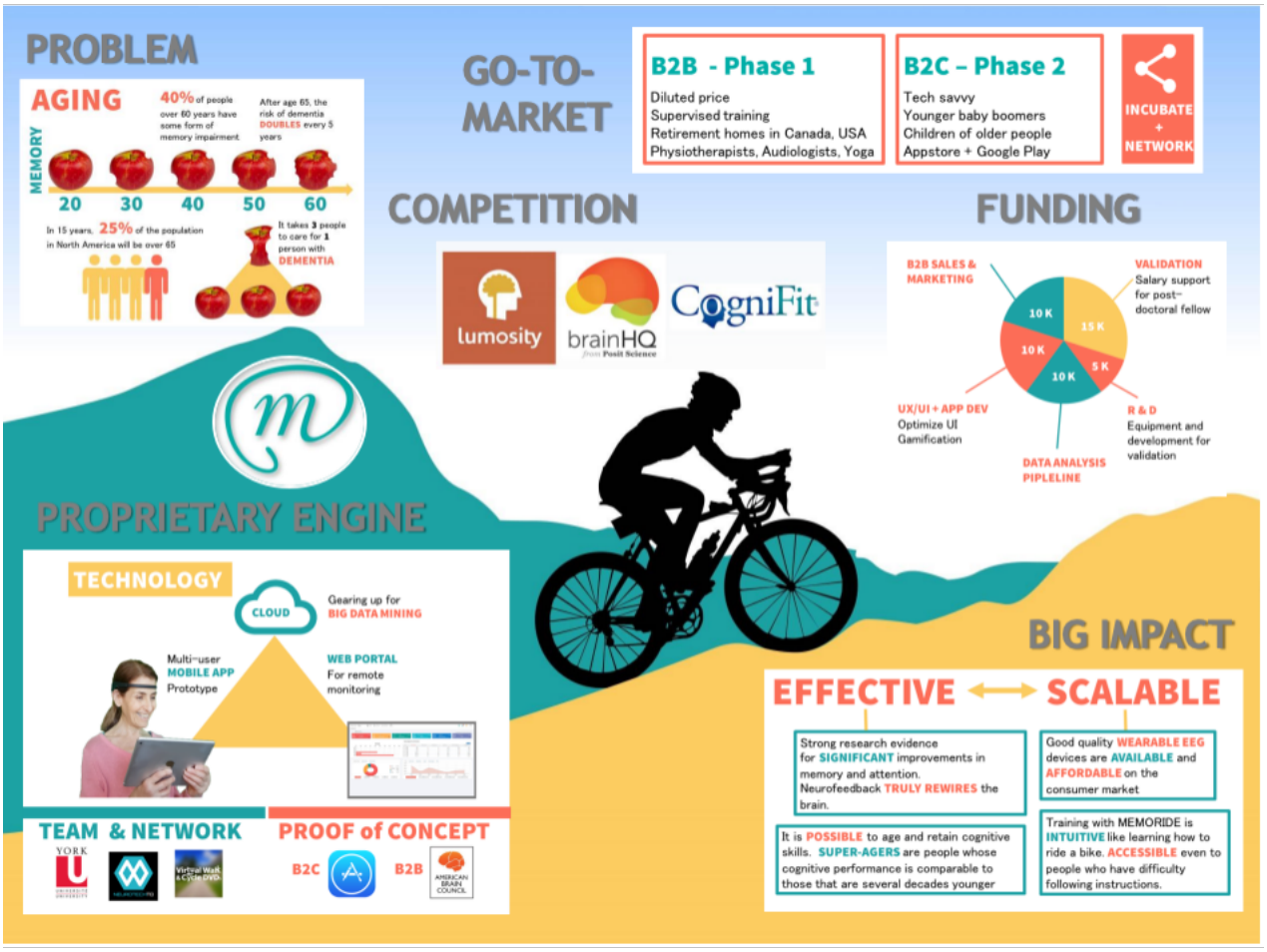
Here is a spec sheet for portable safety barriers created for HCFs and clinics during the pandemic.



HEALTHCARE PROMOTIONAL:

# PITCH DECK

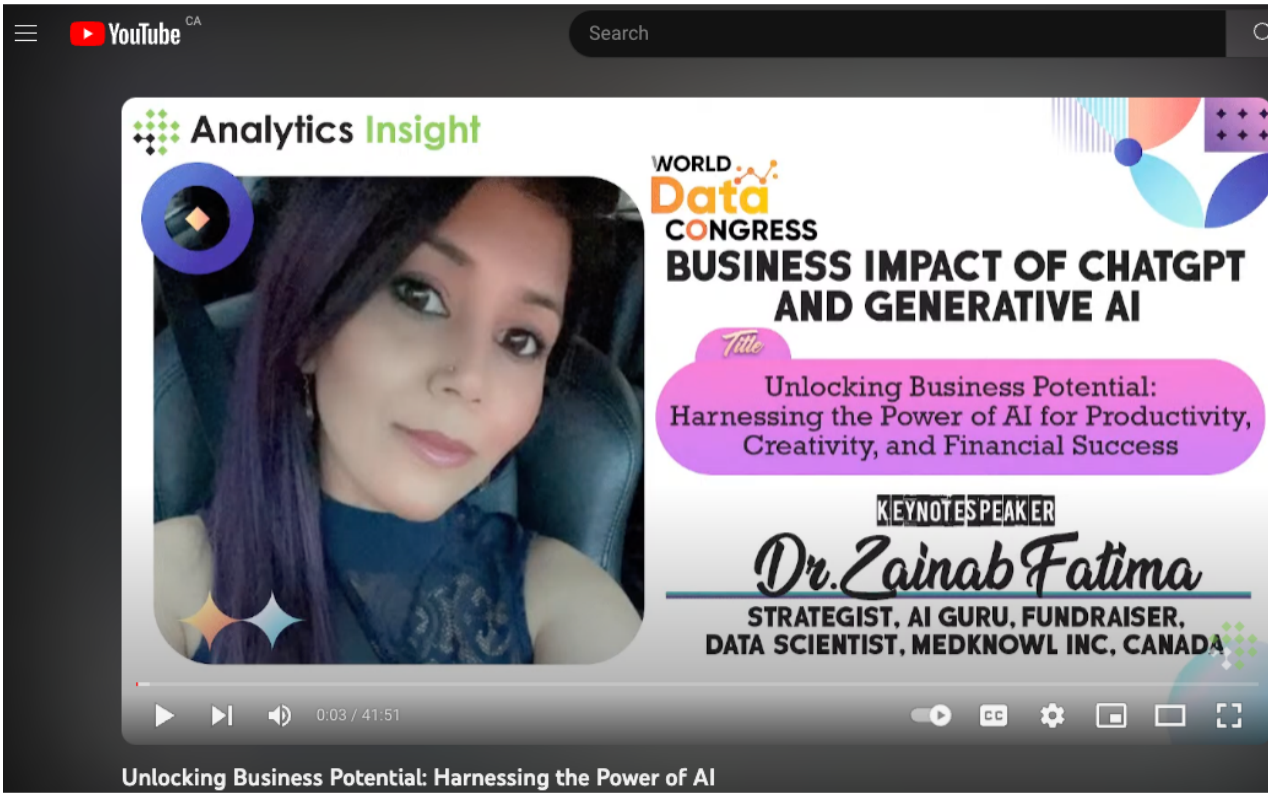
A set of slides from a pitch deck for MaRs Venture Labs for Memoride (unbranded).



PUBLIC SPEAKING ENGAGEMENTS:

# INVITED TALK

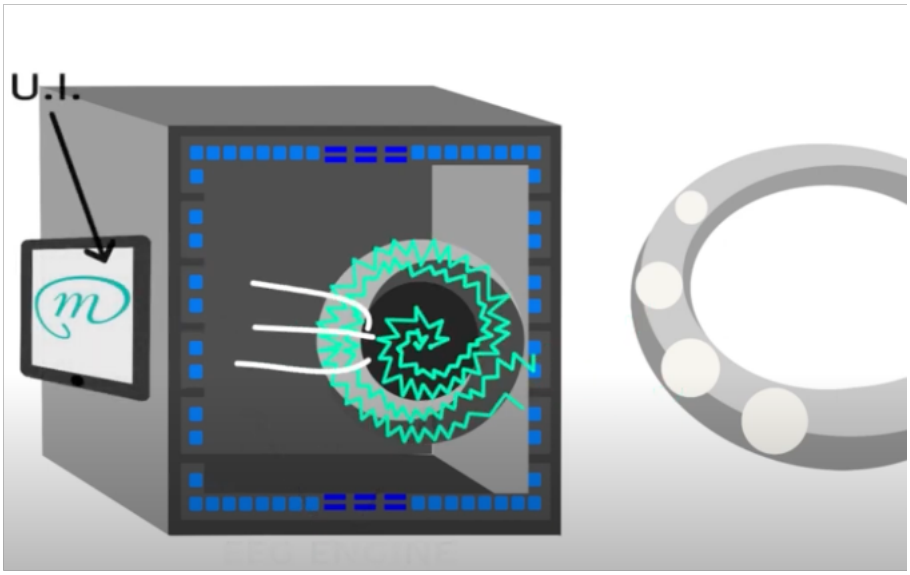
A presentation on how to use AI to boost productivity and creativity in the workplace. Click on thumbnail to redirect to YouTube.



DIGITAL MEDIA:

# ANIMATIONS

Animation made for explaining the mechanism behind Memoride to nurses and support staff in retirement homes.
Click picture for YouTube link.




Instagram story and animation made for explaining the anatomy of a high-quality cotton mask for preventing COVID19 transmission to everyone.

DIGITAL MEDIA:

# EXPLAINER VIDEOS

Explainer videos about unlocking the business potential of AI. Click thumbnails for YouTube links.

## Measuring Productivity

- Workplace culture
- Utilization vs. Productivity
- Facetime Culture
- Need to incentivize deep learning

FORBES > LEADERSHIP > CAREERS

**Employees Using 'Productivity Theater' To Protect Against Surveillance, Study Finds**

**Bryan Robinson, Ph.D.** Contributor ⓘ
*author of CHAINED TO THE DESK IN A HYBRID WORLD (NYU Press, 2023)*

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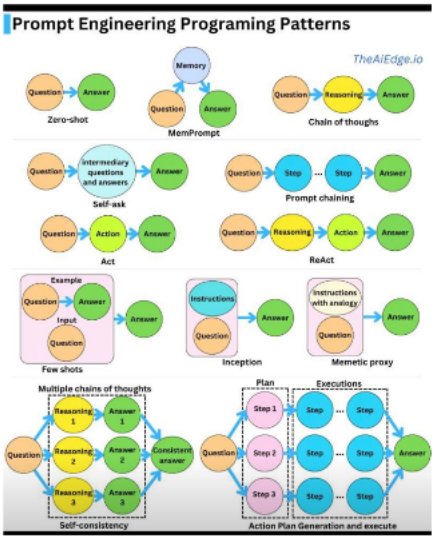
May 1, 2023, 06:36am EDT

## Prompt Engineering

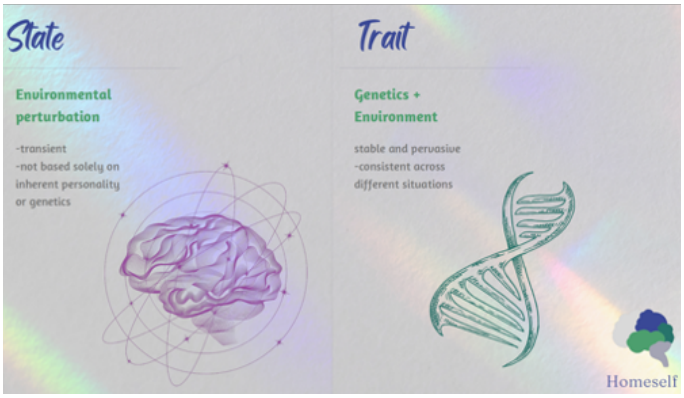
- Planning how to leverage AI is fundamental to how we solve problems
- Word limits and tone are critical

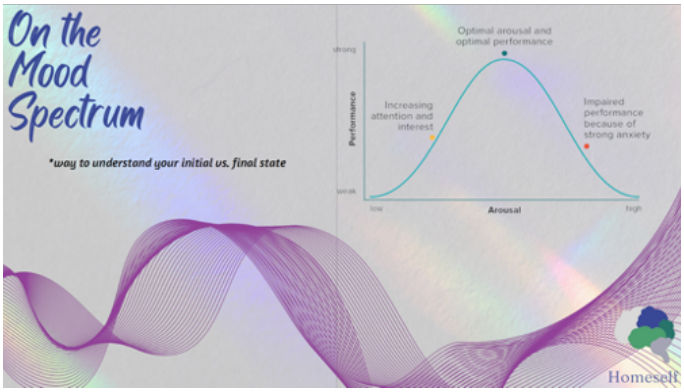


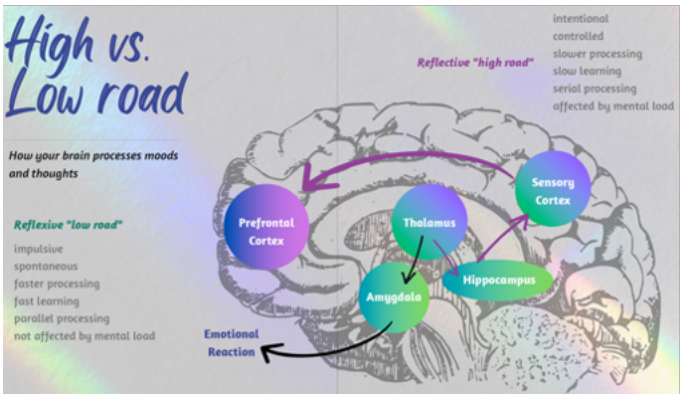
DIGITAL MEDIA:

# SLIDE DECKS

Slide decks created for a digital learning course – Homeself. This was an industry sponsored project where complex principles of neuroscience were distilled into concepts that were easy-to-understand for professionals in the interior design and construction industries. I was also a part of a live discussion with a talk show host to answer questions related to content. Click on High vs. Low Road slide for YouTube redirect.

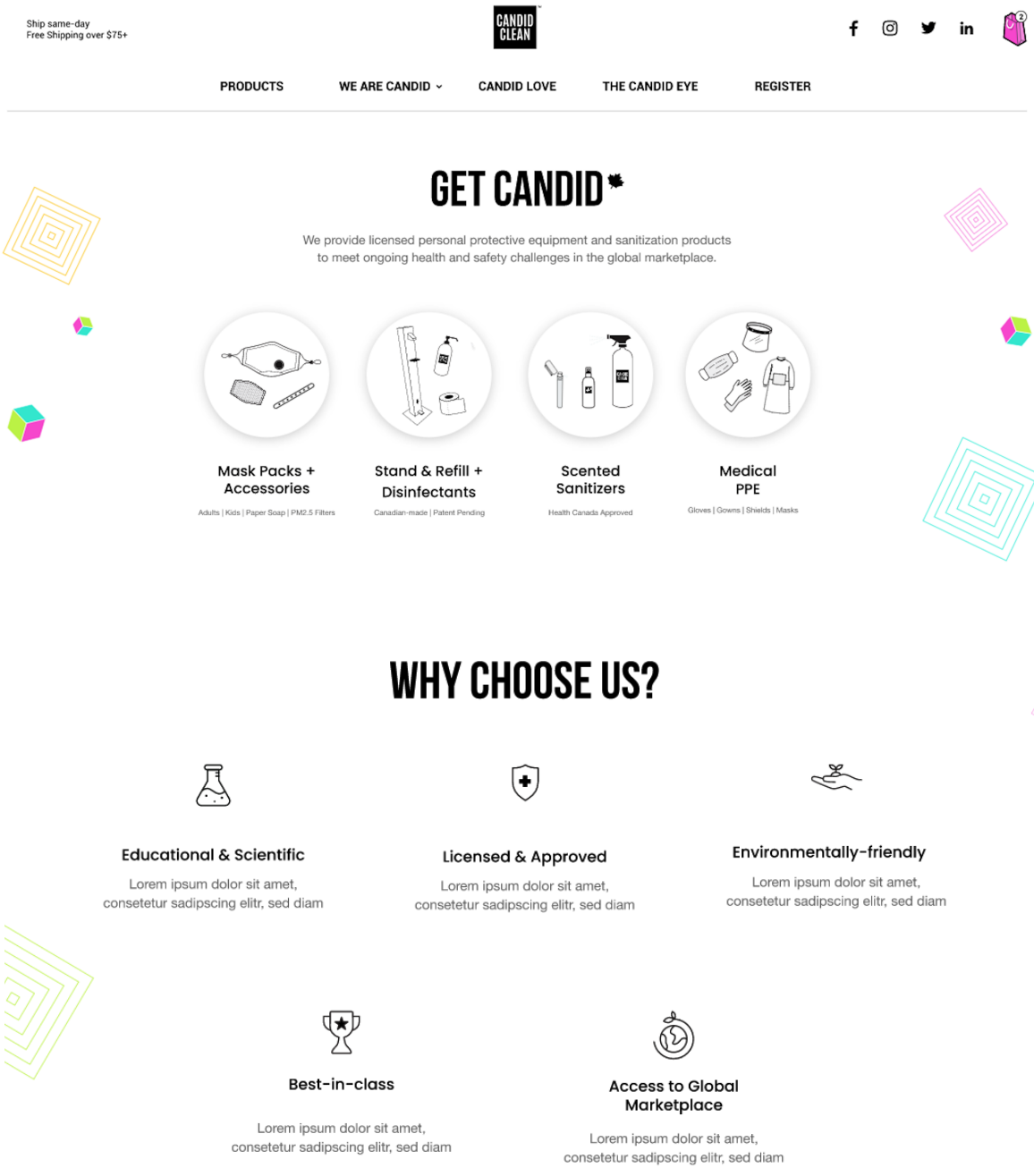



DIGITAL MEDIA:

# WEB DESIGN

Copy for Candid Clean's website: candidclean.com
Click on image to take you to the website.



DIGITAL MEDIA:

# SOCIAL MEDIA MARKETING

Brief snapshot of copy and design of a sample social media marketing campaign with a mission of science education. Live feed is available @candidclean. Click on thumbnail for redirect.