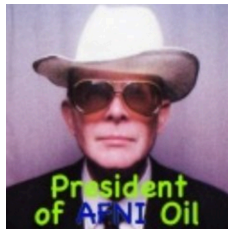# HD4630 Workshops
A practical introduction to fMRI Analysis

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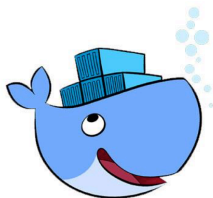Cornell University

Why Workshops?

- You'll spend a lot of time this semester learning what fMRI *is*

- I'm here to help you figure out how to *do* it

- We'll be using the software package AFNI
  - **A** nalysis of
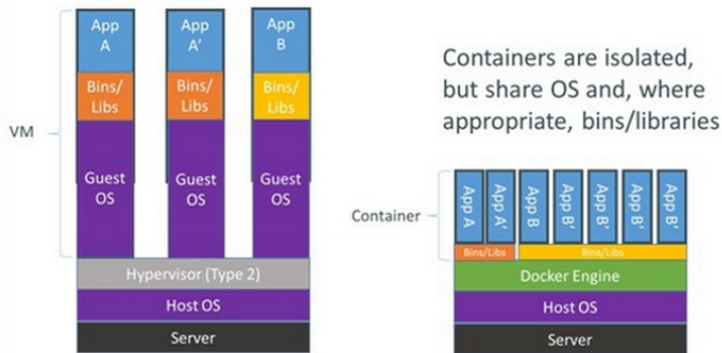 - **F** unctional
  - **N** euro
  - **I** maging Data

AFNI for All!

- AFNI is designed to work in posix environments
  - So it won't work on your Windows computer

- We want AFNI for everyone, so we'll be using software containerization
  - Specifically with Docker or Docker Toolbox

What's with the whale?

Containers vs. VMs

App A   App A'   App B

Bins/Libs   Bins/Libs   Bins/Libs

Guest OS   Guest OS   Guest OS

VM

Hypervisor (Type 2)

Host OS

Server

Containers are isolated, but share OS and, where appropriate, bins/libraries

Container

App A   App A'   App B   App B'   App B'   App B'   App B'

Bins/Libs   Bins/Libs

Docker Engine

Host OS

Server

Learning More
A great tutorial on containerization is available here

You Can Haz Data

- One practical element we won't cover is data collection

- Instead, we'll be using publicly available task data from OpenfMRI

  - A Flanker task collected at NYU

  - A Stroop task collected at Carnegie Mellon

Our Plan Today

- We need to install Docker or Docker Toolbox, along with a few additional dependencies

  - A virtualization client
  - An X11 server

- The exact make and model of these dependencies will vary by your operating system (OS)

- A complete guide for installing Docker on each OS will be made available for you

What Next?

- The most important command today will be
  `docker pull emdupre/hd4630_workshops`

  - We need to 'pull' our Docker image containing all the relevant software

- You'll also need to download the data from OpenfMRI

  - This can be done any time before our next full workshop

Let's get started!