



PRIME-DE  
OPEN SCIENCE FOR NON-HUMAN PRIMATE  
RESEARCH

RÉUNION MENSUELLE DE NEURO-IMAGERIE  
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THOMAS BROCHIER / JULIEN SEIN (INT)

# WHY PRIME-DE ?



- PRIME-DE was born from an initiative lead by the Nathan Kline Institute in 2017.
- The original idea is to share data collected from NHP neuroimaging centers across the world.
- This movement is supported by the Child Mind Institute | INDI : International Neuroimaging Data-Sharing Initiative
- End of 2017, different centers across the world imaging NHP were asked to contribute to the data base.
- INT contributed with images from 4 macaques in the first round of data collection

# WHAT IS IN PRIME-DE ?

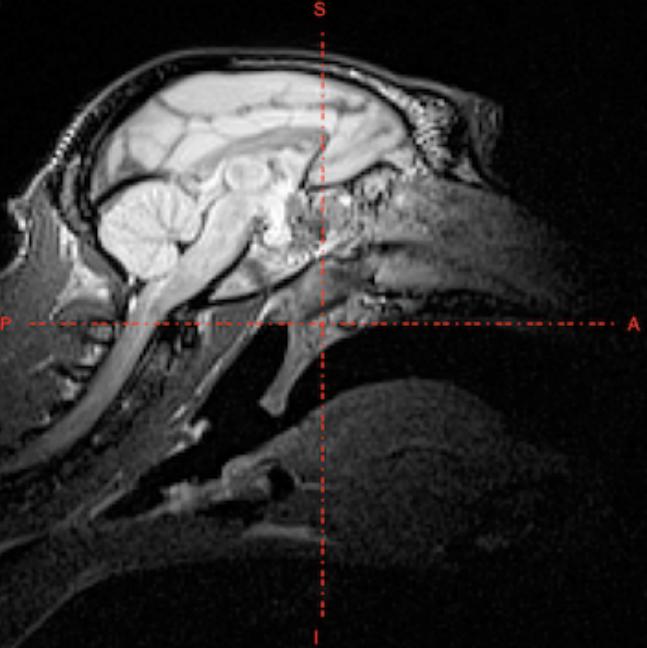
Julien SEIN et Thomas BROCHÉ

- Aix-Marseille Université (< 1GB)
- California Institute of Technology (4.3GB)
- East China Normal University - Chen (1GB)
- East China Normal University - Kwok (< 1GB)
- Institute of Neuroscience (1GB)
- Institut des Sciences Cognitives Marc Jeannerod (19GB)
- McGill University (1GB)
- Lyon Neuroscience Research Center (< 1GB)
- Mount Sinai School of Medicine - Philips (6GB)
- Mount Sinai School of Medicine - Siemens (7GB)
- Nathan Kline Institute (15GB)
- National Institute of Mental Health - Leopold and Russ\* (2GB)
- National Institute of Mental Health - Seidlitz and Messinger\* (2.8GB)
- Netherlands Institute for Neuroscience (5GB)
- NeuroSpin (12GB)
- Newcastle University (5GB)
- Oregon Health and Science University (9.3GB)
- Princeton University (3GB)
- Rockefeller University (8GB)
- Stem Cell and Brain Research Institute (1.5GB)
- University of California, Davis (27GB)
- University of Minnesota (3GB)
- University of Oxford\* (8.9GB)
- University of Oxford WIN Macaque PM (Comming soon)
- NIN Primate Brain Bank/Utrecht University (12GB)
- University of Western Ontario (16.9GB)

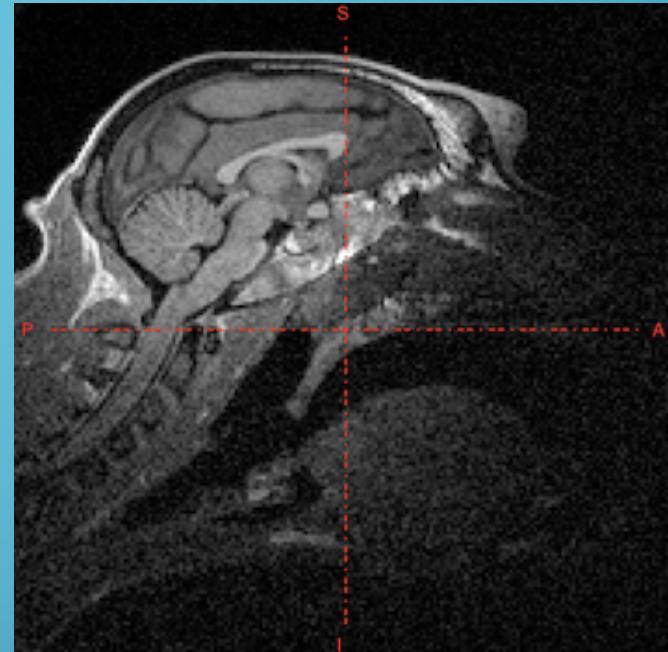
rance)

each dataset.

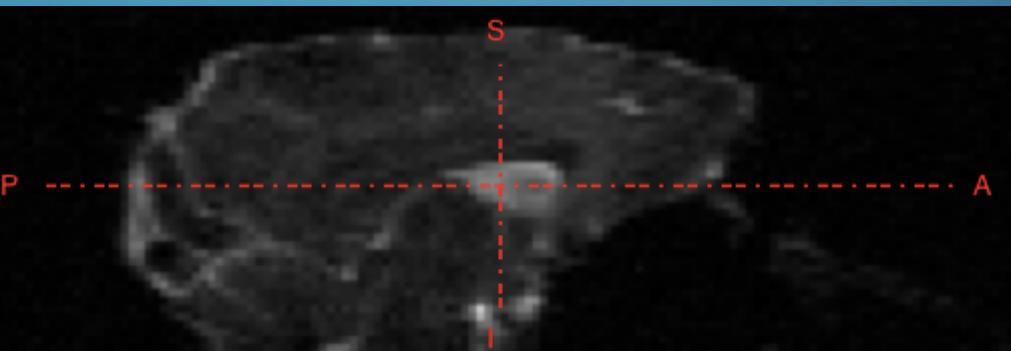
# AMU DATASET



T2w

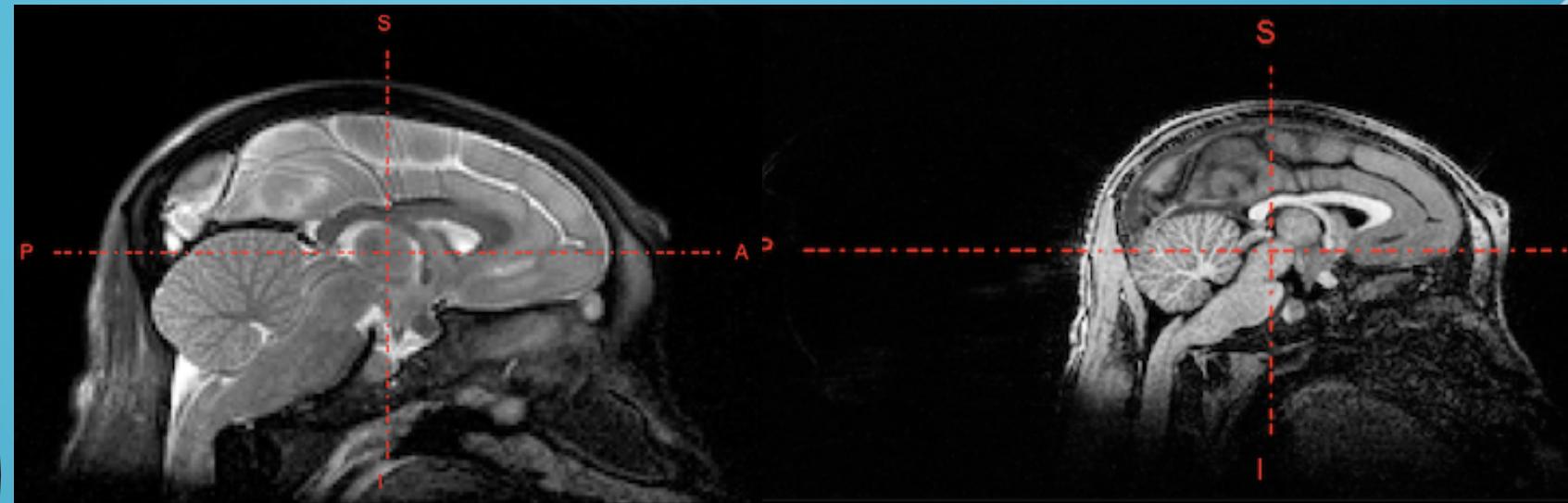


T1w



DWI

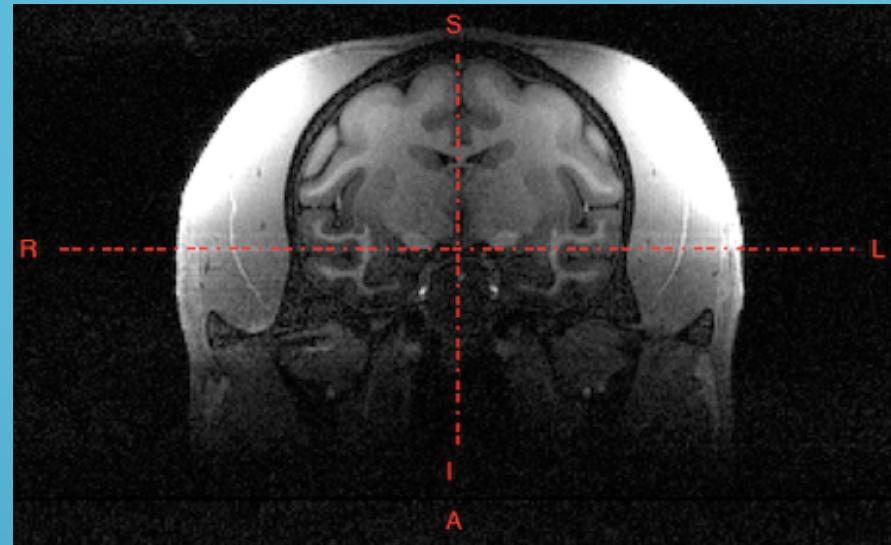
MC GILL  
DATASET



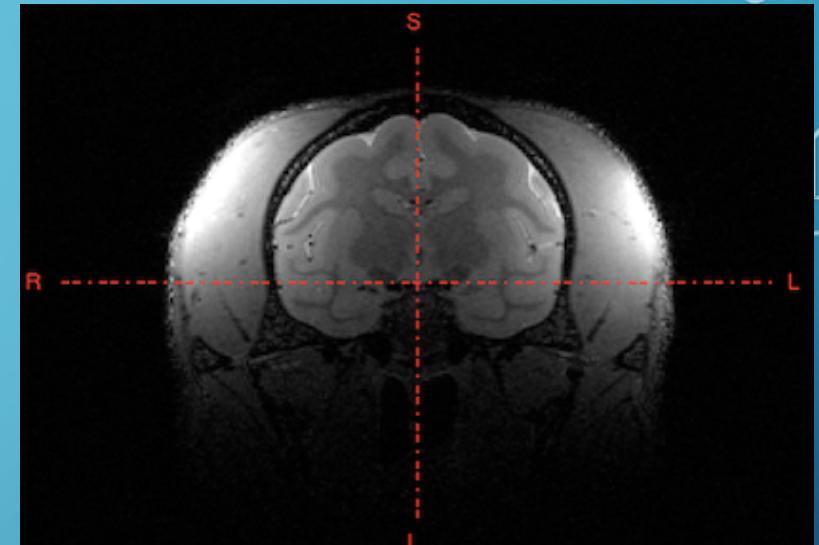
T2w

MP2RAGE -T1w

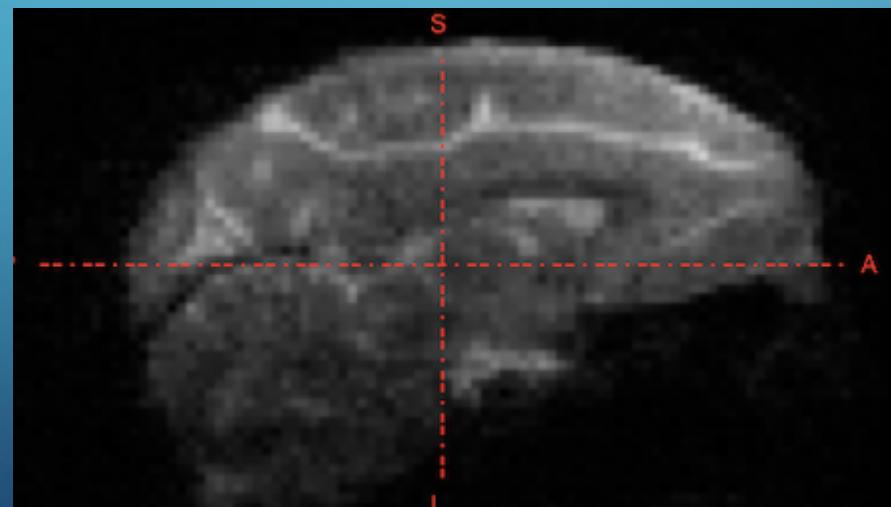
# MOUNT SINAI DATASET



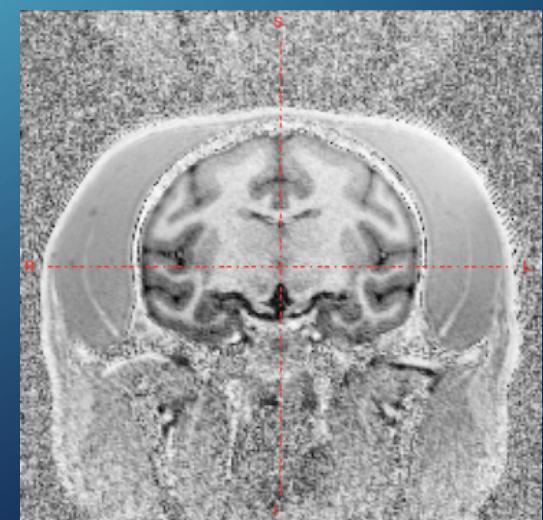
T1w



T2w

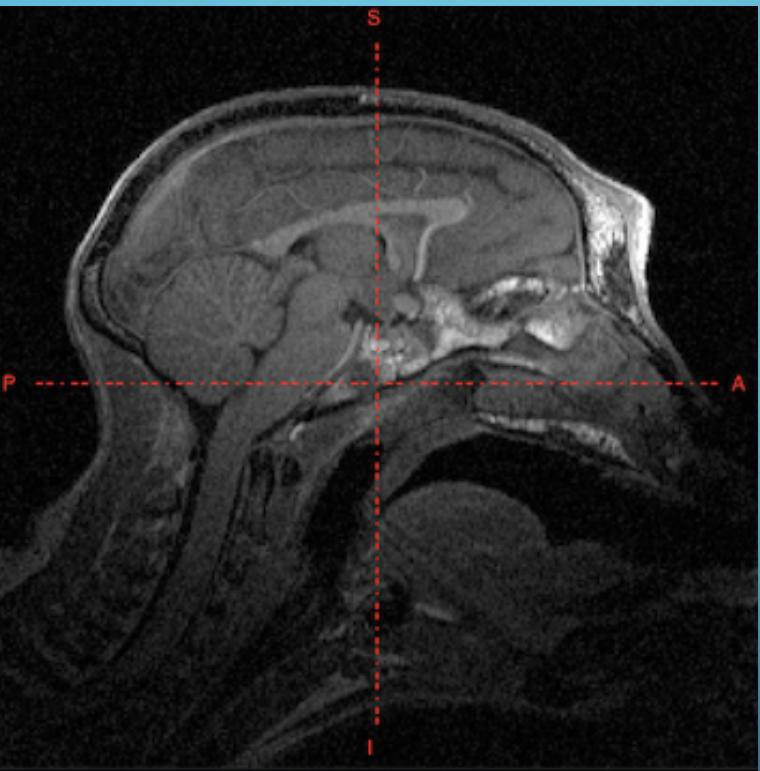


DWI

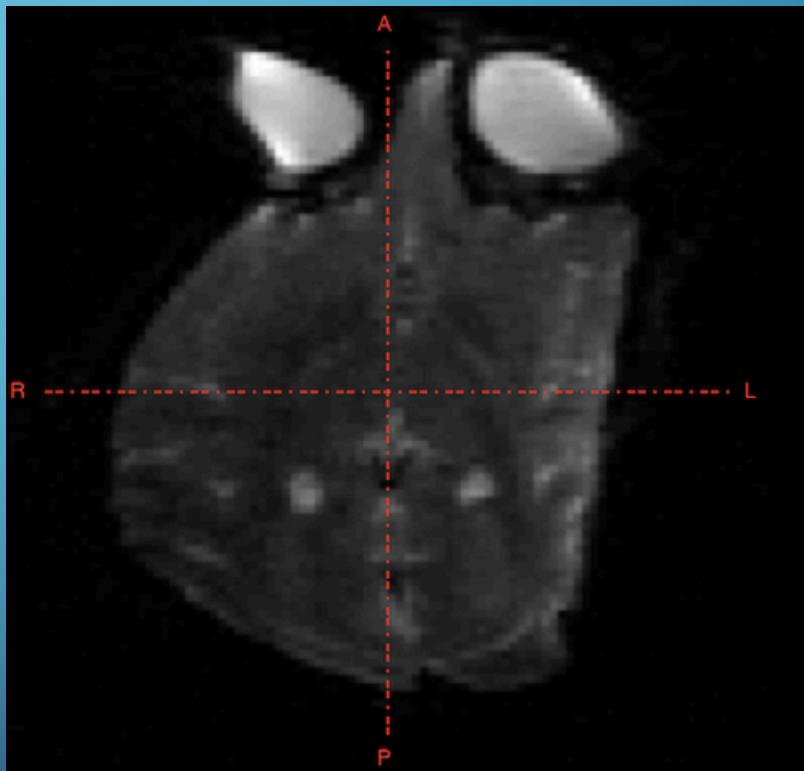


MP2RAGE

# PRINCETON DATASET



T1w



DWI



Julien

20

Neuron

NeuroResource

CellPress

# An Open Resource for Non-human Primate Imaging

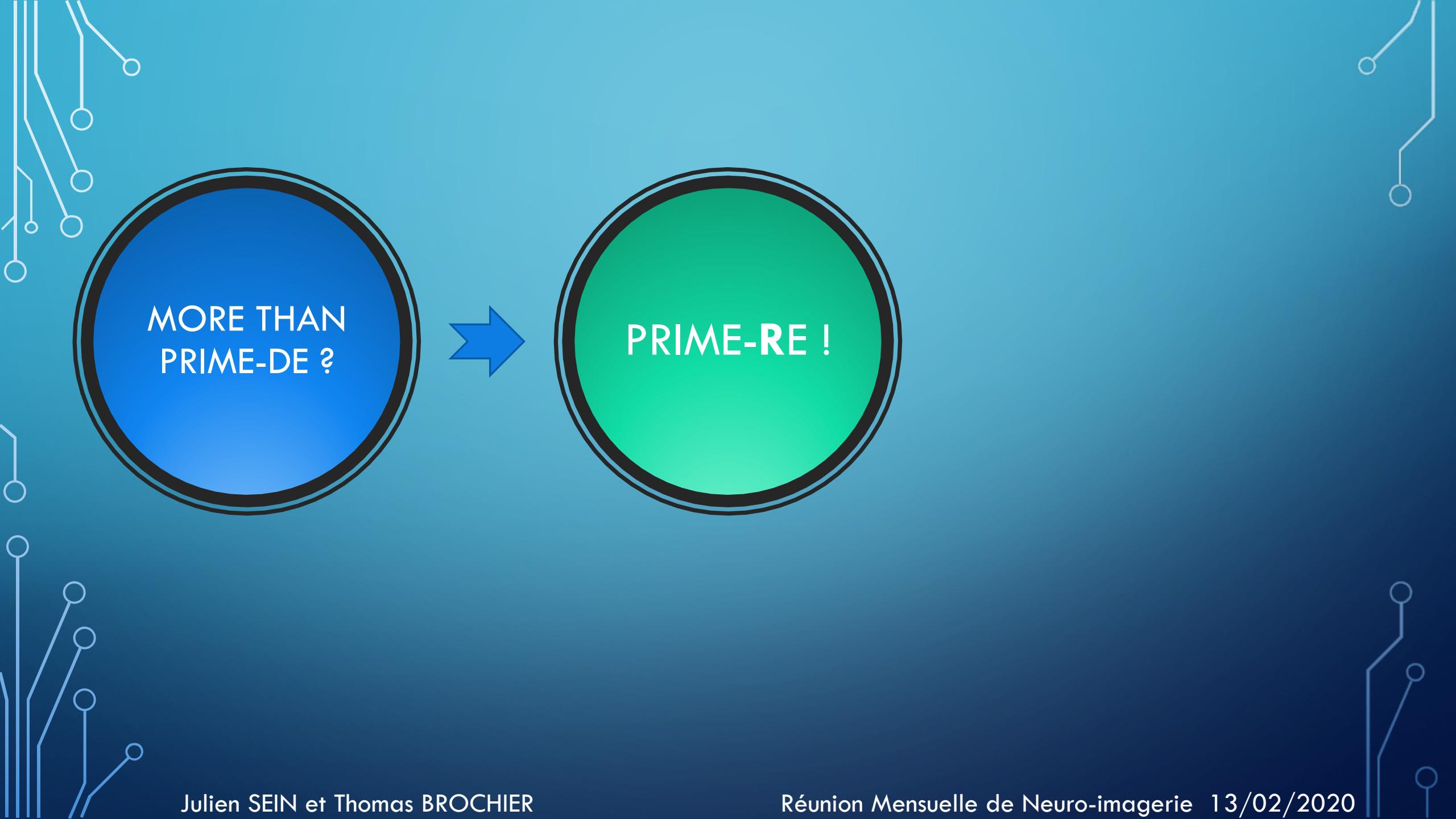
Michael P. Milham,<sup>1,2,51,\*</sup> Lei Ai,<sup>1</sup> Bonhwang Koo,<sup>1</sup> Ting Xu,<sup>1</sup> Céline Amiez,<sup>3</sup> Fabien Balezeau,<sup>4</sup> Mark G. Baxter,<sup>5</sup> Erwin L.A. Blezer,<sup>47</sup> Thomas Brochier,<sup>7</sup> Aihua Chen,<sup>8</sup> Paula L. Croxson,<sup>5</sup> Christienne G. Damatac,<sup>9</sup> Stanislas Dehaene,<sup>10</sup> Stefan Everling,<sup>11</sup> Damian A. Fair,<sup>12</sup> Lazar Fleysher,<sup>13</sup> Winrich Freiwald,<sup>14</sup> Sean Froudast-Walsh,<sup>15</sup> Timothy D. Griffiths,<sup>4</sup> Carole Guedj,<sup>16</sup> Fadila Hadj-Bouziane,<sup>16</sup> Suliann Ben Hamed,<sup>6</sup> Noam Harel,<sup>17</sup> Bassem Hiba,<sup>6</sup> Bechir Jarraya,<sup>10</sup> Benjamin Jung,<sup>18</sup> Sabine Kastner,<sup>19</sup> P. Christiaan Klink,<sup>20,21</sup> Sze Chai Kwok,<sup>22,23,24</sup> Kevin N. Laland,<sup>50</sup> David A. Leopold,<sup>25,26</sup> Patrik Lindenfors,<sup>48,49</sup> Rogier B. Mars,<sup>9,27</sup> Ravi S. Menon,<sup>11</sup> Adam Messinger,<sup>18</sup> Martine Meunier,<sup>16</sup> Kelvin Mok,<sup>28</sup> John H. Morrison,<sup>29,30</sup> Jennifer Nacef,<sup>4</sup> Jamie Nagy,<sup>5</sup> Michael Ortiz Rios,<sup>4</sup> Christopher I. Petkov,<sup>4</sup> Mark Pinsky,<sup>19</sup> Colline Poirier,<sup>4</sup> Emmanuel Procyk,<sup>3</sup> Reza Rajimehr,<sup>31</sup> Simon M. Reader,<sup>32,33</sup> Pieter R. Roelfsema,<sup>20,21,34</sup>

(Author list continued on next page)



## FUTURE OF PRIME-DE ?

- The PRIME-DE consortium has grown as a global collaborative network.
- The in-person workshop was an opportunity to assess the size and strength of the NHP neuroimaging community
- Future axes of development:
  - Increase the size of the data collection
  - Attract more collaborators
  - Improve Neuroimaging practices to obtain better data and better results
  - Multicenter studies
  - Other animal models in the DB (baboons, marmosets)



MORE THAN  
PRIME-DE ?

PRIME-RE !



- Born during the Hackathon satellite of the Global Collaboration Workshop
- Exchange of tools and knowledge to deal with NHP images

<https://prime-re.github.io>

# THANK YOU FOR YOUR ATTENTION !

Many thanks to:

- Michael P. Milham (Child Mind Institute)
- Charles Schroeder (BRAIN Initiative)
- Daniel Margulies (Max Planck Society)

For the huge and generous effort to bring the NHP community together!

