RE: [External] RE: topography

From: Patrick Lyden | plyden@usc.edu

Tuesday, Jun 8, 3:19 PM

To: Ryan Cabeen | Ryan.Cabeen@loni.usc.edu

Cc: Diniz, Marcio A | Marcio.Diniz@cshs.org, 'Andre Rogatko (Andre.Rogatko@cshs.org)' | Andre.Rogatko@cshs.org, Jessica Lamb | lambj@usc.edu, Karisma A Nagarkatti | nagarkat@usc.edu

Ryan,

We are still struggling to understand our corner test data, using your analysis of cortical vs striatal vs thalamic lesion volumes. I would like to try to simplify the problem, and I recalled your most excellent frequency map in which you plotted in 3-d the lesions and showed a beautiful lesion frequency map. I would like to try the same thing but first, split the data into two populations: corner test = 0 and corner test = 1. These are the extreme values, and if lesion location plays a role in turning direction, this two groups should differ in their lesion locations. Then you make the frequency map again, but show the two populations in different colors. The two distributions should center in different locations.

What do you think?

Patrick D. Lyden, MD, FAAN, FAHA, FANA
Professor of Physiology and Neuroscience
Professor of Neurology
Zilkha Neurogenetic Institute
Keck School of Medicine of USC
Room 245
MC2821
1501 San Pablo Street
Los Angeles, CA 90089-2821
plyden@usc.edu

From: Ryan Cabeen | Ryan.Cabeen@loni.usc.edu

Tuesday, Jun 8, 3:26 PM

To: Patrick Lyden | plyden@usc.edu

Cc: **Diniz, Marcio A** | Marcio.Diniz@cshs.org, **'Andre Rogatko (Andre.Rogatko@cshs.org)'** | Andre.Rogatko@cshs.org, **Jessica Lamb** | lambj@usc.edu, **Karisma A Nagarkatti** | nagarkat@usc.edu

Sounds like a great idea to me -- I'd be glad to implement it and make visualizations that we can review.

Ryan P. Cabeen, PhD

Chan Zuckerberg Imaging Scientist
Assistant Professor of Research Neurology
Laboratory of Neuro Imaging
USC Stevens Neuroimaging and Informatics Institute
Keck School of Medicine of USC
University of Southern California
2025 Zonal Ave.

Los Angeles, CA 90033

Tel: (323) 44-BRAIN

Email: rcabeen@loni.usc.edu

Web: <u>cabeen.io</u> <u>www.ini.usc.edu</u>

From: Patrick Lyden | plyden@usc.edu

Tuesday, Jun 8, 3:19 PM

Ryan,

We are still struggling to understand our corner test data, using your analysis of cortical vs striatal vs thalamic lesion volumes. I would like to try to simplify the problem, and I recalled your most excellent frequency map in which you plotted in 3-d the lesions and showed a beautiful lesion frequency map. I would like to try the same thing but first, split the data into two populations: corner test = 0 and corner test = 1. These are the extreme values, and if lesion location plays a role in turning direction, this two groups should differ in their lesion locations. Then you make the frequency map again, but show the two populations in different colors. The two distributions should center in different locations.

What do you think?

Patrick D. Lyden, MD, FAAN, FAHA, FANA
Professor of Physiology and Neuroscience
Professor of Neurology
Zilkha Neurogenetic Institute
Keck School of Medicine of USC
Room 245
MC2821
1501 San Pablo Street
Los Angeles, CA 90089-2821

From: Patrick Lyden | plyden@usc.edu

plyden@usc.edu

Tuesday, Jun 8, 3:38 PM

To: Ryan Cabeen | Ryan.Cabeen@loni.usc.edu

Cc: **Diniz, Marcio A** | Marcio.Diniz@cshs.org, **'Andre Rogatko (Andre.Rogatko@cshs.org)'** | Andre.Rogatko@cshs.org, **Jessica Lamb** | lambj@usc.edu, **Karisma A Nagarkatti** | nagarkat@usc.edu

Thanks. What do you need to pull it off?

From: Ryan Cabeen | Ryan.Cabeen@loni.usc.edu

To: Patrick Lyden | plyden@usc.edu

Tuesday, Jun 8, 3:26 PM

Sounds like a great idea to me -- I'd be glad to implement it and make visualizations that we can review.

Ryan P. Cabeen, PhD

Chan Zuckerberg Imaging Scientist

Assistant Professor of Research Neurology

Laboratory of Neuro Imaging

USC Stevens Neuroimaging and Informatics Institute

Keck School of Medicine of USC

University of Southern California

2025 Zonal Ave.

Los Angeles, CA 90033

Tel: (323) 44-BRAIN

Email: rcabeen@loni.usc.edu

Web: <u>cabeen.io</u> <u>www.ini.usc.edu</u>

From: Patrick Lyden | plyden@usc.edu

Tuesday, Jun 8, 3:19 PM

Ryan,

We are still struggling to understand our corner test data, using your analysis of cortical vs striatal vs thalamic lesion volumes. I would like to try to simplify the problem, and I recalled your most excellent frequency map in which you plotted in 3-d the lesions and showed a beautiful lesion frequency map. I would like to try the same thing but first, split the data into two populations: corner test = 0 and corner test = 1. These are the extreme values, and if lesion location plays a role in turning direction, this two groups should differ in their lesion locations. Then you make the frequency map again, but show the two populations in different colors. The two distributions should center in different locations.

What do you think?

Patrick D. Lyden, MD, FAAN, FAHA, FANA Professor of Physiology and Neuroscience Professor of Neurology Zilkha Neurogenetic Institute Keck School of Medicine of USC Room 245 MC2821 1501 San Pablo Street Los Angeles, CA 90089-2821 plyden@usc.edu

From: Ryan Cabeen | Ryan.Cabeen@loni.usc.edu

Tuesday, Jun 8, 3:42 PM

To: Patrick Lyden | plyden@usc.edu

Cc: Diniz, Marcio A | Marcio.Diniz@cshs.org, 'Andre Rogatko (Andre.Rogatko@cshs.org)' | Andre.Rogatko@cshs.org, Jessica Lamb | lambj@usc.edu, Karisma A Nagarkatti | nagarkat@usc.edu

I think just two lists of the cases that make up the groups, corner test = 0 and corner test = 1. I don't think I have the behavior outcome measures on my end.

Ryan P. Cabeen, PhD

Chan Zuckerberg Imaging Scientist

Assistant Professor of Research Neurology

Laboratory of Neuro Imaging

USC Stevens Neuroimaging and Informatics Institute

Keck School of Medicine of USC

University of Southern California

2025 Zonal Ave.

Los Angeles, CA 90033

Tel: (323) 44-BRAIN

Email: rcabeen@loni.usc.edu

Web: cabeen.io www.ini.usc.edu

From: Patrick Lyden | plyden@usc.edu

Tuesday, Jun 8, 3:38 PM

Thanks. What do you need to pull it off?

From: **Ryan Cabeen** | Ryan.Cabeen@loni.usc.edu To: **Patrick Lyden** | plyden@usc.edu

Tuesday, Jun 8, 3:26 PM

Sounds like a great idea to me -- I'd be glad to implement it and make visualizations that we can review.

Ryan P. Cabeen, PhD

Chan Zuckerberg Imaging Scientist

Assistant Professor of Research Neurology

Laboratory of Neuro Imaging

USC Stevens Neuroimaging and Informatics Institute

Keck School of Medicine of USC

University of Southern California

2025 Zonal Ave.

Los Angeles, CA 90033 Tel: (323) 44-BRAIN

Email: rcabeen@loni.usc.edu

Web: <u>cabeen.io</u> <u>www.ini.usc.edu</u>

From: Patrick Lyden | plyden@usc.edu

Tuesday, Jun 8, 3:19 PM

Ryan,

We are still struggling to understand our corner test data, using your analysis of cortical vs striatal vs thalamic lesion volumes. I would like to try to simplify the problem, and I recalled your most excellent frequency map in which you plotted in 3-d the lesions and showed a beautiful lesion frequency map. I would like to try the same thing but first, split the data into two populations: corner test = 0 and corner test = 1. These are the extreme values, and if lesion location plays a role in turning direction, this two groups should differ in their lesion locations. Then you make the frequency map again, but show the two populations in different colors. The two distributions should center in different locations.

What do you think?

Patrick D. Lyden, MD, FAAN, FAHA, FANA
Professor of Physiology and Neuroscience
Professor of Neurology
Zilkha Neurogenetic Institute
Keck School of Medicine of USC
Room 245
MC2821
1501 San Pablo Street
Los Angeles, CA 90089-2821
plyden@usc.edu

From: **Diniz**, **Marcio A** | Marcio.Diniz@cshs.org

Tuesday, Jun 8, 3:49 PM

To: Ryan Cabeen | Ryan.Cabeen@loni.usc.edu, Patrick Lyden | plyden@usc.edu

Cc: Rogatko, Andre | Andre.Rogatko@cshs.org, Jessica Lamb | lambj@usc.edu, Karisma A Nagarkatti | nagarkat@usc.edu

Hi Ryan,

To match with your data, please use enro animal id. The variable corner index d28 indicates whether it is 0 or 1.

Let me know if you need anything else,

Marcio

From: Ryan Cabeen | Ryan.Cabeen@loni.usc.edu

To: Patrick Lyden | plyden@usc.edu

Tuesday, Jun 8, 3:42 PM

I think just two lists of the cases that make up the groups, corner test = 0 and corner test = 1. I don't think I have the behavior outcome measures on my end.

Ryan P. Cabeen, PhD

Chan Zuckerberg Imaging Scientist

Assistant Professor of Research Neurology

Laboratory of Neuro Imaging

USC Stevens Neuroimaging and Informatics Institute

Keck School of Medicine of USC

University of Southern California

2025 Zonal Ave.

Los Angeles, CA 90033

Tel: (323) 44-BRAIN

Email: rcabeen@loni.usc.edu

Web: cabeen.io

http://www.ini.usc.edu

WARNING

This email is from an external source. Do not click on links or open attachments unless you know the content is safe. Protect your username and password.

IMPORTANT WARNING: This message is intended for the use of the person or entity to which it is addressed and may contain information that is privileged and confidential, the disclosure of which is governed by applicable law. If the reader of this message is not the intended recipient, or the employee or agent responsible for delivering it to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this information is strictly prohibited. Thank you for your cooperation.

From: Patrick Lyden | plyden@usc.edu

Tuesday, Jun 8, 3:38 PM

Thanks. What do you need to pull it off?

From: Ryan Cabeen | Ryan.Cabeen@loni.usc.edu To: Patrick Lyden | plyden@usc.edu

Tuesday, Jun 8, 3:26 PM

Sounds like a great idea to me -- I'd be glad to implement it and make visualizations that we can review.

Ryan P. Cabeen, PhD

Chan Zuckerberg Imaging Scientist

Assistant Professor of Research Neurology

Laboratory of Neuro Imaging

USC Stevens Neuroimaging and Informatics Institute

Keck School of Medicine of USC

University of Southern California

2025 Zonal Ave.

Los Angeles, CA 90033 Tel: (323) 44-BRAIN

Email: rcabeen@loni.usc.edu

Web: http://cabeen.io
http://www.ini.usc.edu

From: Patrick Lyden | plyden@usc.edu

Tuesday, Jun 8, 3:19 PM

Ryan,

We are still struggling to understand our corner test data, using your analysis of cortical vs striatal vs thalamic lesion volumes. I would like to try to simplify the problem, and I recalled your most excellent frequency map in which you plotted in 3-d the lesions and showed a beautiful lesion frequency map. I would like to try the same thing but first, split the data into two populations: corner test = 0 and corner test = 1. These are the extreme values, and if lesion location plays a role in turning direction, this two groups should differ in their lesion locations. Then you make the frequency map again, but show the two populations in different colors. The two distributions should center in different locations.

What do you think?

Patrick D. Lyden, MD, FAAN, FAHA, FANA
Professor of Physiology and Neuroscience
Professor of Neurology
Zilkha Neurogenetic Institute
Keck School of Medicine of USC
Room 245
MC2821
1501 San Pablo Street
Los Angeles, CA 90089-2821
plyden@usc.edu

From: Ryan Cabeen | Ryan.Cabeen@loni.usc.edu

Tuesday, Jun 8, 3:51 PM

To: Patrick Lyden | plyden@usc.edu, Diniz, Marcio A | Marcio.Diniz@cshs.org

Cc: Rogatko, Andre | Andre.Rogatko@cshs.org, Jessica Lamb | lambj@usc.edu, Karisma A Nagarkatti | nagarkat@usc.edu

Thanks, got it!

Ryan P. Cabeen, PhD
Chan Zuckerberg Imaging Scientist
Assistant Professor of Research Neurology
Laboratory of Neuro Imaging

USC Stevens Neuroimaging and Informatics Institute

Keck School of Medicine of USC

University of Southern California

2025 Zonal Ave.

Los Angeles, CA 90033

Tel: (323) 44-BRAIN

Email: rcabeen@loni.usc.edu

Web: cabeen.io www.ini.usc.edu

From: Marcio A | Marcio.Diniz@cshs.org

Tuesday, Jun 8, 3:49 PM

Hi Ryan,

To match with your data, please use enro_animal_id. The variable corner_index_d28 indicates whether it is 0 or 1.

Let me know if you need anything else,

Marcio

From: Ryan Cabeen | Ryan.Cabeen@loni.usc.edu To: Patrick Lyden | plyden@usc.edu

Tuesday, Jun 8, 3:42 PM

I think just two lists of the cases that make up the groups, corner test = 0 and corner test = 1. I don't think I have the behavior outcome measures on my end.

Ryan P. Cabeen, PhD

Chan Zuckerberg Imaging Scientist

Assistant Professor of Research Neurology

Laboratory of Neuro Imaging

USC Stevens Neuroimaging and Informatics Institute

Keck School of Medicine of USC

University of Southern California

2025 Zonal Ave.

Los Angeles, CA 90033

Tel: (323) 44-BRAIN

Email: rcabeen@loni.usc.edu

Web: <u>cabeen.io</u>

http://www.ini.usc.edu

WARNING

This email is from an external source. Do not click on links or open attachments unless you know the content is safe. Protect your username and password.

IMPORTANT WARNING: This message is intended for the use of the person or entity to which it is addressed and may contain information that is privileged and confidential, the disclosure of which is governed by applicable law. If the reader of this message is not the intended recipient, or the employee or agent responsible for delivering it to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this information is strictly prohibited. Thank you for your cooperation.

From: Patrick Lyden | plyden@usc.edu

Tuesday, Jun 8, 3:38 PM

Thanks. What do you need to pull it off?

From: Ryan Cabeen | Ryan.Cabeen@loni.usc.edu To: Patrick Lyden | plyden@usc.edu

Tuesday, Jun 8, 3:26 PM

Sounds like a great idea to me -- I'd be glad to implement it and make visualizations that we can review.

Ryan P. Cabeen, PhD

Chan Zuckerberg Imaging Scientist

Assistant Professor of Research Neurology

Laboratory of Neuro Imaging

USC Stevens Neuroimaging and Informatics Institute

Keck School of Medicine of USC

University of Southern California

2025 Zonal Ave.

Los Angeles, CA 90033

Tel: (323) 44-BRAIN

Email: rcabeen@loni.usc.edu

Web: http://cabeen.io http://www.ini.usc.edu

From: Patrick Lyden | plyden@usc.edu

Tuesday, Jun 8, 3:19 PM

Ryan,

We are still struggling to understand our corner test data, using your analysis of cortical vs striatal vs thalamic lesion volumes. I would like to try to simplify the problem, and I recalled your most excellent frequency map in which you plotted in 3-d the lesions and showed a beautiful lesion frequency map. I would like to try the same thing but first, split the data into two populations: corner test = 0 and corner test = 1. These are the extreme values, and if lesion location plays a role in turning direction, this two groups should differ in their lesion locations. Then you make the frequency map again, but show the two populations in different colors. The two distributions should center in different locations.

What do you think?

Patrick D. Lyden, MD, FAAN, FAHA, FANA Professor of Physiology and Neuroscience Professor of Neurology

Zilkha Neurogenetic Institute
Keck School of Medicine of USC
Room 245
MC2821
1501 San Pablo Street
Los Angeles, CA 90089-2821
plyden@usc.edu

From: Ryan Cabeen | ryan.cabeen@loni.usc.edu

Wednesday, Jun 9, 8:51 PM

To: Patrick Lyden | plyden@usc.edu

Hi Pat.

Just following up with some prelim results for this. I computed the lesion probability maps for each of the groups, defined by the "corner_index_d28" column (coded zero and one). The attached movies show the differences in lesion probability maps between the groups, where blue indicates that group "zero" was more likely have lesion, and red indicates that group "one" was more likely to have lesion. The coloring becomes more transparent as the difference approaches zero.

Hope that makes sense and is of some help, please let me know if you'd like to look at more with this or discuss.

Cheers,

Ryan

From: Ryan Cabeen | Ryan.Cabeen@loni.usc.edu

Tuesday, Jun 8, 3:51 PM

Thanks, got it!

Ryan P. Cabeen, PhD

Chan Zuckerberg Imaging Scientist

Assistant Professor of Research Neurology

Laboratory of Neuro Imaging

USC Stevens Neuroimaging and Informatics Institute

Keck School of Medicine of USC

University of Southern California

2025 Zonal Ave.

Los Angeles, CA 90033

Tel: (323) 44-BRAIN

Email: rcabeen@loni.usc.edu

Web: <u>cabeen.io</u> <u>www.ini.usc.edu</u>

From: Marcio A | Marcio.Diniz@cshs.org

Tuesday, Jun 8, 3:49 PM

Hi Ryan,

To match with your data, please use <u>enro_animal_id</u>. The variable <u>corner_index_d28</u> indicates whether it is 0 or 1.

Let me know if you need anything else,

Marcio

From: Ryan Cabeen | Ryan.Cabeen@loni.usc.edu To: Patrick Lyden | plyden@usc.edu Tuesday, Jun 8, 3:42 PM

I think just two lists of the cases that make up the groups, corner test = 0 and corner test = 1. I don't think I have the behavior outcome measures on my end.

Ryan P. Cabeen, PhD

Chan Zuckerberg Imaging Scientist

Assistant Professor of Research Neurology

Laboratory of Neuro Imaging

USC Stevens Neuroimaging and Informatics Institute

Keck School of Medicine of USC

University of Southern California

2025 Zonal Ave.

Los Angeles, CA 90033

Tel: (323) 44-BRAIN

Email: rcabeen@loni.usc.edu

Web: <u>cabeen.io</u>

http://www.ini.usc.edu

WARNING

This email is from an external source. Do not click on links or open attachments unless you know the content is safe. Protect your username and password.

IMPORTANT WARNING: This message is intended for the use of the person or entity to which it is addressed and may contain information that is privileged and confidential, the disclosure of which is governed by applicable law. If the reader of this message is not the intended recipient, or the employee or agent responsible for delivering it to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this information is strictly prohibited. Thank you for your cooperation.

From: Patrick Lyden | plyden@usc.edu

Tuesday, Jun 8, 3:38 PM

Thanks. What do you need to pull it off?

From: Ryan Cabeen | Ryan.Cabeen@loni.usc.edu To: Patrick Lyden | plyden@usc.edu Tuesday, Jun 8, 3:26 PM

Sounds like a great idea to me -- I'd be glad to implement it and make visualizations that we can review.

Ryan P. Cabeen, PhD

Chan Zuckerberg Imaging Scientist

Assistant Professor of Research Neurology

Laboratory of Neuro Imaging

USC Stevens Neuroimaging and Informatics Institute

Keck School of Medicine of USC

University of Southern California

2025 Zonal Ave.

Los Angeles, CA 90033

Tel: (323) 44-BRAIN

Email: rcabeen@loni.usc.edu

Web: http://cabeen.io
http://www.ini.usc.edu

From: Patrick Lyden | plyden@usc.edu

Tuesday, Jun 8, 3:19 PM

Ryan,

We are still struggling to understand our corner test data, using your analysis of cortical vs striatal vs thalamic lesion volumes. I would like to try to simplify the problem, and I recalled your most excellent frequency map in which you plotted in 3-d the lesions and showed a beautiful lesion frequency map. I would like to try the same thing but first, split the data into two populations: corner test = 0 and corner test = 1. These are the extreme values, and if lesion location plays a role in turning direction, this two groups should differ in their lesion locations. Then you make the frequency map again, but show the two populations in different colors. The two distributions should center in different locations.

What do you think?

Patrick D. Lyden, MD, FAAN, FAHA, FANA
Professor of Physiology and Neuroscience
Professor of Neurology
Zilkha Neurogenetic Institute
Keck School of Medicine of USC
Room 245
MC2821
1501 San Pablo Street

Los Angeles, CA 90089-2821

plyden@usc.edu