

HTT update 20180423

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4/23/18 announcement to the group

Quickly, I'd like to give myself a deadline for sharing progress on analyzing the eeDAP studies conducted at MSKCC.

Yukako et al., Can we get a critical mass of your group on a T-con Wed. 5/2? What time?

Below I'm sharing some interesting related technologies with exciting clinical applications. I could also imagine some powerful studies if integrated with eeDAP.

Yukako et al., Can you ask their Olympus rep if we can attach this to the multi-head microscope so all the pathologists see the in-microscope-eyepiece display?

Augmentiqs: <http://journals.sagepub.com/doi/pdf/10.1177/0192623317743722>

Google: <https://research.googleblog.com/2018/04/an-augmented-reality-microscope.html>

Brandon

3/29/2018 Emails about the Augmentiqs device

From: Gallas, Brandon D., Sent: Thursday, March 29, 2018 3:32 PM

Subject: RE: PI abstract – novel method for automated data acquisition

We are sharing the eeDAP technology liberally. Everything is in the public domain. Our goal is to improve public health.

The technology described in the abstract is telepathology: from a remote location, you can see the same field of view as the microscope. The device is modular so it appears to work with any microscope (pretty cool), it covers the entire FOV (not such a huge deal), and they integrate the ability of all pathologists viewing the "webex" like session to download and annotate images in real time.

Their device does not have any relationship to the WSI. This is what makes eeDAP different, the ability to relate the wsi with the slide. They cannot pre-determine locations to visit on the microscope or record locations visited on the microscope and link those to a wsi.

Their abstract about collecting annotations for AI training is similar to our work, but I feel that without the relationship to the WSI, they will miss the opportunity to train algorithms to work with WSIs, and WSIs are part of our current/new reality and WSI archives are being created at a

pretty fast pace.

Thank you for sharing. I'll make sure to look for the authors at PI summit. It's good to know the landscape of things happening. I've been distracted so far this year with wrapping up other projects and I am about to get much more tuned into our collaborative work. I'm excited about that.

Brandon

From: sirintrs, Sent: Thursday, March 29, 2018 11:14 AM

To: Gallas, Brandon D. Subject: RE: PI abstract – novel method for automated data acquisition

If you patented some of your components, it might be there are some patent infringements. Not to stir the pot.

From: Gallas, Brandon D., Sent: Thursday, March 29, 2018 9:38 AM

Subject: [EXTERNAL](#) RE: PI abstract – novel method for automated data acquisition

Interesting. It does seem to link the microscope image back to the WSI. I'll read closely.

Thank you,

Brandon

=== From: sirintrs, Sent: Tuesday, March 27, 2018 3:34 PM To: Gallas, Brandon D. Subject: Fwd: PI abstract – novel method for automated data acquisition

Hi Brandon, I got this from a vendor at USCAP. This sounds a lot like eeDAP

Sent from my iPhone

Begin forwarded message:

=== From: Gabe Siegel, Date: March 26, 2018 at 9:39:08 PM EDT Subject: [EXTERNAL](#) PI abstract – novel method for automated data acquisition

Hi to all,

I wish to bring to your attention a new technology with implications for pathology informatics. Called Augmentiqs, this technology was shown for the first time to clinical pathologists at USCAP, and one the MSKCC pathologists who stopped by our booth believed this could be of interest.

Technology Overview:

Augmentiqs integrates within the existing microscope, transforming it into a connected device. An integrated camera with a field of view equal to the eyepiece captures a live view of the stage, while a digital overlay projected on the optical plane enables use of morphometrics, annotations, image comparison, or any other data – while looking through the eyepiece.

With the ability to communicate directly from the microscope, we perform real-time telepathology, sending images directly to SMS, and saving images to LIS patient files.

Pathology Informatics:

By essentially upgrading the microscope with computer capabilities – while not changing the methodology of the pathologist's routine, Augmentiqs is able to record images and metadata while the pathologists work. When considering the comparison to using WSI for digitizing the data, Augmentiqs captures only the region of interest and piggybacks off the work of live cases, both of which allows Augmentiqs to build pathology databases faster, cheaper and with greater clinical relevance. However, Augmentiqs is further unique in that preset parameters can be set up to score the pathology images and corresponding case and metadata based on time spent looking at a particular region, change of objective, use of annotations, saving to case report etc...

To further emphasize the potential, by integrating within the microscope and offering tools which improve the workflow, Augmentiqs is a technology which pathologists would want to use, making large scale data collection easy with an immediate ROI.

I invite you to read the attached abstract submitted to PI in May. The work was performed by Prof. Edmund Sabo based in Haifa, Israel.

About Us:

We're a young company based in Israel. We envision our technology being used by pathologists to speed up workflow, and by AI developers to build learning sets. We also see our product as a platform upon which to eventually run the algorithms within the workflow. On the latter note, we designed our system to act essentially like a cell phone and "app store", where pathologists can choose to integrate 3rd party pathology software (i.e., Visiopharm analytics, [ViewsIQ](#) image stitching etc...).

I hope the information above is relevant to Paige and MSKCC. And if so, I would like to explore the possibility of collaboration.

I also invite you to read the telepathology article published in the Journal of Toxicologic Pathology, and to view the product video.

all the best,

Gabe

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Video Link: <https://youtu.be/QkU6cHaB9dU>