STUDENT WORKING GROUP





Working Student Group

August 2024



Showcase your research Want to nominate yourself for a student spotlight? Let us know about your work

Looking to get feedback on a work-inprogress project? Present your ideas to an AMIA working group

Positions

Looking for a postdoctoral fellowship? Find positions here

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Alumni Spotlight: Dr. Scott McGrath



Student Spotlight: Gregory Kell



Publications Spotlight: Student **First-Authored Papers**

Sove the dote:

AMIA Annual **Symposium** November 9-13, 2024 San Francisco, CA

AMIA Informatics Summit

March 10-13, 2025 Pittsburgh, PA



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Alumni spotlight



Academic Program Management Officer CITRIS Health UC Berkeley



When did you first become involved with AMIA and the STWG?

I was the only one in my lab that was interested in clinical informatics. Every time I went to a conference with my department, I never was able to connect with people on their research or when I shared my own work. I decided I needed to mix things up, and I started searching for alternative informatics conferences to submit to. That's how I found AMIA. I attended my first annual symposium in 2015, in Chicago. That conference was electric because I instantly knew I had found my tribe. I quickly wanted to get more involved, so I self-nominated myself for chair of the Student Working Group, and the rest is history.

What advice do you have for students starting in informatics? In STWG?

Get to know your peers, and it doesn't have to be work focused. Go out to lunch or dinner as a group, and just ask about what people are working on and get to know them better as an individual. When you do finally get to your career journey, having a mental list of people and what they are working on will be the first step in potential collaborations. One of the reasons that so many people enjoy coming to AMIA is that they get to see people they've learned from and worked with over the years. These are the first steps that can pay dividends in your career down the road.

How can students get the most out of their AMIA conference experiences?

I'm going to steal recommendations from Dr. Jessie Tenenbaum, who shared these on Twitter a few years ago. Overall, this is my top recommendation: try to make it to at least one AMIA conference per year, and the Annual Symposium is the best starting point.

- 1. In sessions, ask questions after talks and identify yourself (name, affiliation, when you do).
- 2. Attend the "State of the Association" Town Hall.
- 3. Join "Working Groups" and Discussion Forums related to your areas of interest. Don't forget to participate! Show up! Send messages, reply to messages, contribute to discussions!
- 4. Run for leadership positions in WGs.
- 5. Introduce yourself to someone you don't know at a coffee break (you can take cues from ribbons).
- 6. Resist the temptation to hide in your hotel room during breaks (as I used to want to do, especially as a student). They are some of the most important parts of the conference! Network!

Alumni spotlight

- 7. Seek out people with "ACMI Fellow" ribbons and "FAMIA" ribbons. These are members who have been recognized for their contributions to the field.
- 8. Seek out people with "Board Member" ribbons. Ask about their careers and solicit advice about your work and ways to get more involved in AMIA.
- 9. Use the conference app to look at who will be attending. If there is someone from a company, hospital network, or university you are interested in, reach out via the app to see if they have time to meet with you at the conference.
- 10. Take advantage of the various tools AMIA has scheduled during the conference, like resume reviews, and the headshot photo booth.
- 11. Attend networking events like WINE and the Student Working Group in-person meeting. Stop by the Bagels with the Board event.
- 12. Read (at least skim!) eNews blasts. This is an excellent way to spot opportunities to get involved and learn about new developments.

What is your research process and what challenges have you faced in your research?

I've primarily been involved in the development of a digital health platform called ACTIVATE, where we are using remote patient monitoring to target rural and underserved populations. A project, I should mention, I'm involved with entirely due to my involvement in AMIA. We've faced the dual challenges of building a company, solving the technical challenges with our platform, and conducting research. I'd say the variety of challenges is the constant element I face. One site may need a meeting for legal review of the platform and our data sharing agreement and another may request technical assistance due to data not uploading properly. It has been exciting to see it grow and watch the impact we have been able to make.

What impact do you hope your research will have?

Our outcome results from ACTIVATE have been super exciting. Our next challenge is trying to scale the platform and replicate the results we've had so far. I'm really excited about our next phase where we will be looking at ways that AI can help guide the process, and assist with integration, interoperability, and driving engagement. Our goal is to ramp ACTIVATE up from a project we've run in rural California, to across the United States, and then eventually across the globe. When we say data driven results, we mean that in a way that we back up with research, and I think it is fascinating to have the opportunity to work on something that is covering both the research side of informatics and the implementation side.

STUDENT SPOTLIGHT



Gregory Kell. MPhil

PhD Researcher at King's College London

"Methodology for creating a biomedical question answering dataset containing realistic clinical questions" AMIA LEAD Fund Trainee Awardee for the 2024 Clinical Informatics Conference

Briefly describe your research interests.

My research is dedicated to leveraging Artificial Intelligence to meet the information needs of clinicians through biomedical question answering systems. Despite two decades of research, these systems have yet to see widespread adoption in clinical settings. During my PhD, I aim to uncover the reasons behind this gap and explore potential solutions.

How was your experience at your first AMIA conference?

I thoroughly enjoyed my time at the Clinical Informatics Conference. The event provided a valuable perspective on medical informatics from the clinicians' viewpoint, deepening my understanding of their experiences with current technologies and offering insights into future advancements. Additionally, I connected with several colleagues working in my field, fostering invaluable relationships that may lead to future collaborations.

Can you elaborate on your student paper?

In my paper, I introduced RealMedQA, a novel biomedical dataset comprising realistic clinicians' questions and clinically approved guideline recommendations that answer these questions. Medical students, along with a large language model (GPT-3.5-Turbo), generated the questions based on the guideline recommendations and an instruction sheet we developed. The students then verified each other's questions, as well as those produced by the language model.

How do you see your work contributing to the field of informatics?

Much of the progress in Artificial Intelligence has been driven by the availability of public datasets for training and evaluating machine learning models. While the dataset I developed is currently too small for training, it offers valuable insights on how it can be extended cost-effectively. This extension could facilitate breakthroughs in biomedical question answering, ensuring that physicians receive the most relevant information available.

What role do you think informatics plays in addressing global challenges?

Informatics is set to keep revolutionizing global healthcare, from disease surveillance through social media tracking to providing medical consultations in conflict zones via telecommunication technologies. Specifically, biomedical question answering will enable clinicians to access medical guidance and evidence from diverse regions, ensuring their decisions are based on the most relevant, reliable, and up-to-date information.

PUBLICATIONS SPOTLIGHT

First-Authored Publication by Students, Trainees, and Fellows; Our apologies in advance for any unintended errors or omissions. Thank you.

JAMIA Volume 31, Issue 8, August 2024

- Chowdhury, S., Chen, Y., Li, P., Rajaganapathy, S., Wen, A., Ma, X., ... & Zong, N. (2024). Stratifying heart failure patients with graph neural network and transformer using Electronic Health Records to optimize drug response prediction. *Journal of the American Medical Informatics Association*, *31*(8), 1671-1681.
- Jacquemyn, X., Van den Eynde, J., Chinni, B. K., Danford, D. M., Kutty, S., & Manlhiot, C. (2024). Computational simulation of the potential improvement in clinical outcomes of cardiovascular diseases with the use of a personalized predictive medicine approach. *Journal of the American Medical Informatics Association*, 1704-1713.
- Ren, Y., Wu, Y., Fan, J. W., Khurana, A., Fu, S., Wu, D., ... & Huang, M. (2024). Automatic uncovering of patient primary concerns in portal messages using a fusion framework of pretrained language models. *Journal of the American Medical Informatics Association*, *31*(8), 1714-1724.
- Seinen, T. M., Kors, J. A., van Mulligen, E. M., & Rijnbeek, P. R. (2024). Annotation-preserving machine translation of English corpora to validate Dutch clinical concept extraction tools. *Journal of the American Medical Informatics Association*, *31*(8), 1725-1734.
- Tejani, A. S., Bialecki, B., O'Donnell, K., Sippel Schmidt, T., Kohli, M. D., & Alkasab, T. (2024). Standardizing imaging findings representation: harnessing Common Data Elements semantics and Fast Healthcare Interoperability Resources structures. *Journal of the American Medical Informatics Association*, 1735-1742.

JAMIA Open Volume 7, Issue 2 , July 2024

- Barata, F., Shim, J., Wu, F., Langer, P., & Fleisch, E. (2024). The Bitemporal Lens Model-toward a holistic approach to chronic disease prevention with digital biomarkers. *JAMIA Open*, 7(2), ooae027.
- Balasubramanian, J. B., Choudhury, P. P., Mukhopadhyay, S., Ahearn, T., Chatterjee, N., García-Closas, M., & Almeida, J. S. (2024). Wasm-iCARE: a portable and privacy-preserving web module to build, validate, and apply absolute risk models. *JAMIA Open*, 7(2), ooae055.
- Yoon, E., Hur, S., Curtis, L. M., Benavente, J. Y., Wolf, M. S., & Serper, M. (2024). Patient factors associated with telehealth quality and experience among adults with chronic conditions. *JAMIA Open*, 7(2), ooae026.
- Garcia-Agundez, A., Kay, J. L., Li, J., Gianfrancesco, M., Rai, B., Hu, A., Schmajuk, G., & Yazdany, J. (2024). Structuring medication signeturs as a language regression task: comparison of zero- and few-shot GPT with fine-tuned models. *JAMIA Open*, *7*(2), ooae051.
- Wieland-Jorna, Y., van Kooten, D., Verheij, R. A., de Man, Y., Francke, A. L., & Oosterveld-Vlug, M. G. (2024). Natural language processing systems for extracting information from electronic health records about activities of daily living. A systematic review. *JAMIA Open*, 7(2), ooae044