

State of Vermont Artificial Intelligence Task Force

Meeting Minutes

January 18, 2019

1 National Life Drive, The Montpelier Room, Basement

12:00 p.m. - 4:00 p.m.

Members present: Brian Bresland, Honorable John Dooley, Milo Cress; Eugene Santos; Brian Cina; Donna Rizzo; Trey Dobson, MD; Joe Segale; Jill Charbonneau; Mark Combs; John Cohn

Members missing: Michael Schirling; Christopher Herrick; James Lyall

Staff present: Kayla Dewey

Others present: James Dean; Bree Derevanik; Dale Hackett; Charles Wells; Matt Swenson; Maddy Champagne; Nikoletta Sidiropoulous; Abiy Ambaye; Chris Danforth; Rep. Brian Smith; Rep. Annmarie Christensen; Rep. Woodman Page; Rep. Lippert; Rep. Mari Cordes; Rep. Anne Donahue; Ingrid Malmgren; Rep. Lori Houghton; Rep. Ben Jickling; Rep. David Durfee; Rep. Lucy Rogers

12:06 Meeting Begins

Introductions from members present

12:10 Motion to accept December meeting minutes passes

12:10 Request for public comment

Bree Derevanik of Rutland High School introduces her agenda to attract task force members to speak at her high school's conference on AI.

12:12 AI Overview

Q Is everything complete with the AI overview?

A Yes

12:15 Committee Discussion

Defining AI

- The definition keeps changing.
- There is no definition, it is continuously evolving.
- Instead of writing a definition the committee may define words to clarify terms in the report
- A clearer definition may emerge by June when the final report is due.
- The AI Overview definition may be a starting place to edit as needed: "Programs with the ability to learn and reason like humans."

12:18 Update from Subcommittee on Law Enforcement, Education, and Social Services

- The subcommittee is working to arrange testimony from national experts and local people to go into detail on privacy and facial recognition technology.
- If national experts speak, the task force needs to attract more of a public audience.

Q Is the task force in agreement with the direction the subcommittee is taking?

A Yes

Even with national experts, the subcommittee should also call local experts even if there is an overlap in testimony.

The police chief of Burlington might be a good resource because he is looking at the benefits and risks of AI and could suggest other witnesses.

Q Might the task force be interested in hearing from Coplink?

A The topic is so large that the subcommittee needs to balance the time with other topics.

Discussion of the March 22 Meeting

Topic is Services, Retail, and Food.

Q Should the task force now assign a chair and members for this group?

Public Forum

The purpose is to open up the conversation to hear questions and concerns from the public. There is some public fear so there should be a place to validate concerns and hear what the public wants to talk about.

Milo and Brian C. spoke on the radio about AI. There were a lot of Qs from the public.

There is public interest and concern and the public should join the meeting. It could be very powerful and would improve our transparency.

Could the subcommittee on public outreach be revived to work on increasing public outreach?

Could we find a recording of the radio broadcast and transcribe the Qs?

How did members of the public present here hear about this meeting?

Suggestions for public outreach: using Front Porch Forum or sending out a press release

Concern with holding public forums

- Time spent holding public forums is time taken from having committee discussions, coming to conclusions, and making recommendations.
- the task force may request more time from the legislature. Maybe that is the expectation.

Is the Feb. 15 report the time when the task force may ask for more time?

Can the task force request more flexibility with the deadline for the final report due in June? Can that be requested in the Feb. report?

With more time, there would be more time for public forums and public engagement.

If there is only time for one public forum, Burlington would be the place for the most accessibility.

The legality of requesting an extension.

The task force should produce an honest report in Feb. and ask for what is needed. Examples: The State should form a commission, The deadline is too soon – the committee will return with guidance on how to proceed and a response, which may be “no”.

Suggestions for request: The task force requests an extension by law or by committee to Jan. 1 to hold meetings as the task force determines necessary.

Q Some members cannot commit time beyond the planned time for the task force in the current Act.

A Members are appointed and new members can be appointed to fill vacant positions.

Q Should the report ask for an extension to Sept. 30 instead of Jan. 1 to keep with the legislative schedule?

A Yes

Add to Report

Request for amendment so that the task force may remain active until Sept. 30 when a final report will be due. A June report will also be submitted. Number of meetings will be determined by the task force as it deems necessary.

In order to maintain the agenda schedule, there is a motion to discuss the report after the speakers have presented, which passes.

12:55 Speakers

Introduction – The subcommittee had arranged a speaker from the insurance perspective, but because of a legal issue, he is not able to arrange a testimony in time for this meeting. He will be available for future meetings if the task force requests it.

Speaking today are four speakers to represent AI in healthcare.

Dr. Nikoletta Sidiropoulous, UVM Medical Center

Professional background and training – She is a trained physician who began studying pathology in Connecticut, interned in cytopathology (a minimally invasive biopsy.) Interned at Dartmouth, a well equipped research laboratory, and focused on small, cellular biopsies for patients, which provides targeted precision therapeutics for cancer.

Moved to UVM and was surprised at the lack of resources compared to a previous laboratory. Moved to San Francisco to continue training and started a genomic medicine lab in 2010. Genomic sequencing was a new technology in 2010 and eventually the cost of equipment dropped so that research could move into the clinical lab space. Moved back to UVM Medical Center to take position as medical director in 2013.

First priority as to set up a state-of-the-art facility to study clinical grade genomics and gain accreditation. They are able to do DNA and RNA sequencing and report data to the EHR (electronic health record.)

How does AI fit into the field?

There is a lot of AI used in this research to interpret massive amount of data and to observe multiple changes in data and what it all means together. This is used in the non-clinical space and there is interest in bringing it into the clinical space so that patients may benefit.

Vermont is small and mighty and poised to implement AI. There isn't clinical AI yet available, how will leadership vet which AI is appropriate considering that the clinical space must protect patient data? How do we make sure that there is quality control and assurance that is ongoing? How do we guard against AI failures and suggestions of wrong decisions? There is a concern for patient safety.

Q What are the roadblocks for scaling?

A The interpretation of results is a challenge. There are four faculty members currently who are trained in the field to do clinical grade interpretation and it is being done manually right now. There is potential to uniformly identify information so that interpreters are consistent and do not miss anything.

Q What is the role of government in this? How can government federate and be the trusted 3rd party? How can we get a sampling of a genome type and enough data?

Q Are we talking about AI doing interpretation or just bring in data and organizing data for a human to interpret?

Q Is this something that you can create or buy?

A It is something that we'll buy. Vendors will start presenting tech options and we need to make decisions about what tech to accept.

Q1. Can you provide some specific examples of benefits and risks of this tech?

2. Who will have access to this tech?

A1. Specific benefits are more efficient use of physician's time and more consultation with patient instead of running tests.

Q Will AI allow us to cure all cancer someday?

A No

Q How much of it then?

A AI implemented responsibly and used by experts can facilitate a better patient experience and could alleviate physician burn out because it would help facilitate. Instead of working through data points, a physician can spend time with the patient. Facilitate matching a patient with therapies more efficiently. Optimize benefits, minimize futility.

Q Is it a challenge to prevent the AI from being biased?

A and closing statement: I would like the committee to recognize the imperative to invest in certified laboratory professionals. Care will be different by location but there are national guidelines. We don't want those without the expertise mandating how AI is handled in the medical field, but we want to work together.

Charles Wells, Southwestern Vermont Health Care

Developer at the hospital for many years with a background in machine learning, Microsoft ML. Began building small programs without using patient data to protect from HIPPA violations. Current project is a training page to classify and organize help tickets. Tickets are categorized by importance, if it relates to a patient, and the type of issue. This allows the team to respond to help tickets more efficiently. The tool makes accurate predictions 74% of the time. The tool can also predict which technician is responding based on his/her/their writing style.

Q What if it doesn't predict correctly?

A The tool's work is still being monitored by a technician.

Program to login nurses to their work station – currently building a model that tracks what nurses are doing to automatically login to their machine and save time. Machine starts loading applications when the nurse swipes entry pass.

Q Do you have any key metrics of actual benefits?

A Metrics are now just being collected

Q What could we do to utilize anonymous data?

A I would like to see a standardized data set without patient data which data scientists could use

VITAL is Vermont Information Technology Leaders – They aggregate health claims data and create reporting snapshots to hospitals. It is funded by the state, but it is a private company. They have a massive amount of data.

Recommendation – a byproduct of this task force could be to create a space where professionals could collaborate and use knowledge. There is a lot of data being generated and professionals do not know what to do with it.

Data.vermont.gov is a data sharing site to support innovation. Information is published but static. There is a modernization project right now to allow live data sets to be added too.

Should the field consider AI assistants for doctors? Alexa and Google Home are now just a part of our private lives. It is interesting that that hasn't made it into professional fields.

Q Is the program shareable - what you're doing at your hospital?

A That motivates a desire for more collaborating and networking to advance AI in healthcare.

Final Recommendations: I encourage organizations to not keep data in silos especially in VT which is geographically spread out. I want more collaboration between professionals. I don't know what that looks like, but this meeting today has been a big part of that fulfilling that goal.

Abiy Ambaye, UVM Medical Center

Clinician specializing in breast and cervix health. Not an expert in AI but is able to give some examples to the task force with the hope that it will be helpful.

The pap smear test is a screening tool that has saved a lot of lives. It started in Western Europe and now cervical cancer is uncommon. The test is done by obtaining and viewing slides for irregular cells, which can be done digitally. Digitally viewed slides can be stored and contribute to a larger data set improving machine accuracy. Only one system has been approved by the FDA, so not many people are using this for diagnostics. A lot of pathologists will soon start using this.

Q Where does legal responsibility lie when a machine makes a diagnosis?

A 2% of readings are incorrect because of technical human error. Slides are made by humans so there is room for human error, but the margin of error is being reduced.

Q What if the machine makes a cancer diagnosis, you make a judgement that it is not cancer, and it turns out that it is cancer - who is responsible for the outcome?

A It is early days and it is up to agencies and judges to decide how to handle these situations.

Patients should seek second opinions with decisions like a cancer diagnosis.

Q Won't this encourage doctors to be inclined to diagnose cancer more often. Will he become biased to not bet against a machine?

A EKG's are currently being used to diagnose heart attacks and a doctor will disagree with it.

This is not a one person decision. When there are difficult decisions, professionals seek a consensus diagnosis with peers. There is no black and white with medical diagnosis.

Q What is the path that you see as new AI are being introduced? What can we do to get doctors to accept the AI and use it? There seems to be impatience. We expect it to be perfect from the beginning and AI only gets perfect with use.

A Using the example of a self driving car: people kill people all the time, but the moment a self driving car kills someone it will have an impact on opinion. More research should be done to demonstrate the benefits of AI use. Not just showing equivalences. Adoption will be slow and there will be a slow build up of trust.

Q Are there areas of medicine with resource shortage?

A There are geographic places where there are no experts to make diagnosis. Just having an image allows for access to an expert, which will be very beneficial for people with less access.

Maybe VT could look at areas that are underserved to identify areas that could benefit from AI diagnosis.

Q As AI takes on more decision making role. How will that affect informed consent and more control shifts from human to machine? When responsibility shifts from human to machine are we going to consider this?

A Patients are not always given all the details of what is done. There are regulatory bodies to protect people. There should not be a need for consent for everything.

Q Who decides to buy AI and use it in a practice?

Final recommendations: AI is not going away, so we ought to talk about it and continue to consider it. This will come weather we like it or not.

Chris Danforth, UVM

Background in weather prediction - one of the great success stories in science. Anything beyond a two week forecast was previously thought to be out of reach of prediction, but with the explosion of data and powerful algorithms scientists are now able to process billions of numbers that can be used to understand the earth's atmosphere. Hurricane forecasts are accurate a week in advance. Using big data, predictions can be made for a vast array of problems. (e.g., making a depression diagnosis from an Instagram feed.)

Regulation should not be focused on code, it should be focused on privacy and the data that AI relies on. Data should be treated like medical data and not be sold. There should be transparency on what is being collected and how it is being used.

Q Should AI be used to anticipate a suicide and provide an intervention?

A There have been subtle shifts. Example: Search engines will show intervention services first when “suicide” is queried instead of images of suicide.

Q If it’s not about AI, but about the data, data needs to be protected. What is the right government level to do that? Does this work at the state level?

A It could be done to show leadership for the nation. This is an incredibly important problem. It might lead to problems as soon as you drive into NH but you might want to do it anyway as a statement about what is right.

Q Help me with facial recognition. How do you regulate it for being misused?

A Algorithms that infer your face shouldn’t be allowed, but it doesn’t make sense to regulate the algorithm. It should focus on how the data is used.

Q I agree that you can't regulate an algorithm. I'm curious about who owns the data and how to regulate data. Do you think our country is headed toward data rights?

A I think that's what needs to happen. The data that we produce is becoming more and more valuable and companies are using it for things that we don’t consent to.

Q Could we do something at the state level?

A Someone has to start, it requires leadership somewhere.

Q You mentioned that it’s about access to data. There is an example that I’m curious about. Facebook employees are viewing live streamed suicide attempts. Do you see a difference between using an algorithm or having 1000 employees doing this?

A it makes sense to follow patterns to make predictions. There are examples of where this has helped people. The algorithm has helped produce timely interventions.

Public awareness should be increased. Students should have classes on the roles of algorithms in life.

Data scientists should take a Hippocratic oath to remember that human lives are at stake. The ceremony of reminding new professionals of their responsibility to the safety of others drives a certain personality to the field.

“Vermont is a state that is small but mighty” is the take away statement of the day.

Are we actually going to put laws on small companies that start here?

Q Why don’t we force companies disclose intentions? If you use a tool in a manner that is not disclosed there may be grounds for legal recourse. What’s your opinion on that?

A Company's intentions sometimes evolve.

Q But can’t they then disclose the new intention?

A I don’t know if you ever know up front what you’re going to do.

It reminds me of the food labeling law.

IBM is being sued for misusing data from the weather company. What if there was some unified labeling with data – an overly simplified version of an intention disclosure- it sounds bureaucratic, but it's distilled and easy to understand for the average consumer. Example: label reading, “This product uses facial recognition.”

Last comments: We're talking about data. One thing about AI that this group could focus on is how transparent and explainable this is. Weather prediction got good because we could examine mistakes and improve models. Awareness should be promoted. Education should be funded on these topics and AI in Vermont should be explainable.

Open Discussion

Feb. Report

How will it be edited and voted on?

Proposal -

Kayla and John D. will work together to create a final draft with the following schedule

Kayla and John D.'s version will be submitted to the task force via Slack by Feb. 1

There will be a task force discussion period on Slack until Feb. 10

All task force members will give final approval on the final version by Feb. 14

Motion to accept the proposal passes.

The chair of task force will connect with the chairs of the legislative committees to preemptively discuss what the task force is requesting.

Meeting minutes should be included in the report.

ORCA's presence should be included in the report.

Discussion on giving recommendations in the Feb. report or not -

We can't give recommendations yet. We haven't had a chance to synthesis anything yet.

It might be helpful in the report to explain the process. The first two meetings were for organizing the process, following were information gathering. The final are public involvement and synthesis.

Recommendations or speculations now would be irresponsible.

At the bottom, the task force might say, “while we are gathering lots of input, we are still in the fact finding stage. We explicitly are not ready to make recommendations, it is premature. We need more time to thoroughly study this.”

Public comment -

Informal feedback from the visiting members of House committee was positive. There can be informal communication in the State House on these topics. You should extend an invitation to the Senate committee that didn't attend today to help engage them more.

3:59 adjourn