Dr. Jennifer Myers opened the first meeting of the academic year at 11:35AM, introduced herself as Chair and asked the committee members to introduce themselves.

Dr. Myers asked the committee for suggestions for presenters for the two remaining slots in the spring. In order to answer and provide suggestions, new committee members asked for a description of the charge of the committee.

Victoria Mulhern of Faculty Affairs and Professional Developed (FAPD) explained that the committee is present to represent the interests of the faculty and any and all issues that impact their professional lives. We encourage you and expect you to translate this information back to the department.

Can you think of any examples of charges in this committee that have impacted the faculty in the past?

Ms. Mulhern stated that the requirement for new assistant professors to have some training to teach when they were appointed was a committee recommendation. Teaching workshops have been created and continue to be developed. In the same year, there was a recommendation that faculty have an annual performance evaluation or career planning meeting. These recommendations were approved by Dean Arthur Rubenstein.

Dr. Myers said that there are instances where recommendations do not get implemented for various reasons. For example, many would like an Academy for Teaching. From the Dean’s perspective it was not the right time.

Suggestions for presenters:

About a year ago, there was a presentation by representatives from PMACS about the email transition and PW transition. It would be helpful for them to come again to discuss security and changes that impact faculty and staff.

Because Penn is expanding its footprint, hearing someone from Global Health would be useful, such as Dr. Larry Shulman discussing the Rwanda clinic and other initiatives in which he is involved and also Dr. Glen Gaulton who serves as Vice Dean and Faculty Director for the Center for Global Health.

Emerging diagnostics: Drs. David Roth and Mitchell Schnall. Many technologies are going both into the clinic and research. The landscape is changing for physicians and researchers.

Conflict Resolution is another topic that would be helpful for faculty. It could be helpful if FAPD held workshops.
Dr. Myers introduced Drs. C. William Hanson and Jason Moore to speak on the topic of Big Data.

Dr. Hanson is Professor of Anesthesiology and Critical Care at the Hospital of the University of Pennsylvania, Chief Medical Information Officer, Vice President, University of Pennsylvania Health System

Dr. Hanson described an initiative regarding ideas on how to best work with Epic, making it more user-friendly and reducing burnout among users. There is a strong belief that people are putting more work in EMR than they are getting out of it.

Data Science overview: Electronic Data gets distilled into a knowledge engine and produces recommendations. It is necessary for tech companies and clinicians to work together to make optimize the use of technology. Penn has the ability to transform what we do with our hands into knowledge that is derived from electronic data. Now, such as we do with google maps, you have constructs in the cloud that adapt with your personalized devices.

We have a predictive healthcare team which includes a steering committee.

Machine learning is basically taking data sets and using labels of true positives to train an engine to distinguish true from false. You will get whatever your label is, so there is human bias in artificial intelligence.

Penn Medicine Data – we house data sets to do modeling to create an outcome. This outcome will then be sent to the physician – email or epic.

We understand how predictions may work with our amazon purchases but we have to figure out how to best use this in our clinical work.

There is more and more data that we have to work with. We want an efficient health system, rapid diagnosis and treatment and monitoring impacts and opportunities.

A committee member asked if Dr. Hanson’s team is looking for partners for interesting projects. Dr. Hanson stated that, given the fact that we have 8 people and there are entrepreneurial projects that might surface, we can only work on high value targets.

We work with clinicians to choose the best interventions based on what is currently happening and what is most likely to happen (prediction).

Data science is very helpful with risk stratification. We want to identify those who are at high risk for readmission.

We identified as a high value area of focus. We brought in the data science team to use a broader array of rules and we were able to predict sepsis hours earlier. We did not move the outcomes. However, now in Version3.0, the Leonard Davis Institute is working on this to predict a positive blood culture because we know what to do in that case.

Another project was on lung cancer. The project was to take high risk known cancer patients and predict
the likelihood that they would have an emergency room visit. At the end of the day, the work flow was complicated.

Palliative care is another area of interest. If you can identify if palliative care is appropriate earlier, then we can avoid giving care that is not appropriate. This is an area where human judgment and data must work together. We have identified people who previously were not covered for palliative care and were able to receive a palliative care consult. We are rolling this out to the broader Penn Medicine community.

Jason Moore, PhD is the Director of the Institute for Biomedical Informatics and the Edward Rose, M.D. and Elizabeth Kirk Rose, M.D. Professor

Dr. Moore said that he was brought to Penn to build the Institute of Biomedical Informatics (IBI) about three years ago. IBI works closely with colleagues across Penn Medicine. Penn Medicine is uniquely poised to create at this interface because of the way that the institute is structured with access to the clinical setting and data.

The IBI was launched in March of 2015 following a ten-year planning process. The mission is to build and nurture an informatics ecosystem across Penn Medicine and Penn more broadly. There has been substantial faculty recruitment, 10 over the past 3 years. The goal of the faculty recruitment is to fill in the gaps where we need expertise and for collaboration and to build education.

Education Programs. A certificate in Biomedical Informatics was launched fall 2017. We have 10 students per year and is available to anyone at Penn. We are close to getting a new masters program in Biomedical Informatics, with a focus on clinical informatics. Currently, we are starting a planning process for Biomedical Informatics PhD.

Informatics Infrastructure Overview – Data comes from various places at Penn including Epic EHR, Penn Data Store, Penn Omics and Research Data and we have two cores. Clinical Research Informatics Core (CIC) and Bioinformatics Core (BIC).

Clinical Research Informatics Core - Danielle Mowery is the Scientific Director of CIC.

Bioinformatics Core - Paul Wang is the director. Focus is on next generation sequences and genomics.

It is a new core that we just launched. If you have a research question and it requires clinical data, the core will shepherd you through the entire process. A Data Science Navigator will sit with you and work with our Data Wrangler (IS). They have direct access to data resources to do the queries and pull the data. They will pass it off to the Data Scientists to do machine learning, analysis, etc. and work with the Data Science Navigator to return the results back to you.

This core will replace paper queries through the DAC only if it is for research, it will not complete with the clinical side request.

The Idea Factory is Penn’s first data visualization facility. Staff are available to help you and you can bring your own devices. We have a sign up sheet on the IBI website.
IBI is also building software tools. How can we bring this technology to everyone so that it is simple and easy to use? Penn AI – AI can do automated machine learning for you. Pennai.org. will use methods that it thinks is best for your data set. This will be launched in the next month or so for the Penn community. You can use it in the BIC core or work with PMACS to setup a server and use it for yourself. If you use AI yourself on your own machines, you will pay just for the server and not the tool.