**Clinical Informatics Fellowship – Practical Curriculum Objectives**

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| **Topic** | **Location** | **Objectives** |
| CoN Process – Army Only | MAMC | Learn the steps and the proper forms to use in applying for a CoN in the Army system: CoN Checklist, PIA, Waiver, CHESS Waiver. Include when to use them and why. Provide soft copies of completed CoN documents as Go-By’s. |
| DIACAP – Overview | MAMC/NHB | Learn the proper steps and proper forms to use when applying for a DIACAP, as well as POC’s, what to tell vendors and total cost estimate. As much as possible, learn when a capability requires DIACAP vice CoN. |
| IA – Overview | MAMC/NHB | General overview of IA and introduction to concepts of network security, software security, EUD security, hacking, DDOS, malware, etc. |
| SAIC On-Site Responsibilities | MAMC | Brief overview of SAIC on-site responsibilities and assistance. Also a brief discussion of Tier 1-3 support functions. |
| IMD - Overview | MAMC | Brief overview of the functions provided by and functions of an IMD. Focus on high level topics like network, servers, PBX, etc. |
| Deployment Ops | MAMC/NHB | Review and learn about the process for deploying EUD’s, to include the requirements for creating and deploying an image (with or without virtualization), what a “gold disk” is, nuances of client software and driver loads, standardized images, troubleshooting |
| End User Support – Overview | MAMC/NHB/McChord | Learn about the requirements and execution of end user support to ensure deployment of network, virtualization, clients, images, troubleshooting occur at the clinic/department level |
| Hardware - Clinical | MAMC/NHB | Work with IMD, CI and Biomedical Repair to gain an understanding of the requirements for implementation, sustainment, maintenance and troubleshooting clinical hardware. This would include EKG machines, X-ray machines, bedside and portable monitors, and any other device for clinical care that can or does connect to the network or can transmit information electronically |
| Hardware - General | MAMC | Work with IMD to understand the installation and maintenance of general IT hardware, such as switches, routers, servers, UPS, Ethernet cable, etc. Overview. |
| Help Desk – Overview | MAMC/NHB | Learn the basic function of a help desk; understand the capabilities of a help desk at the local and enterprise level; |
| Software - Clinical | MAMC | Learn about the basics of clinical software; learn the superuser role for all major clinical software; become very familiar with text macros for both Asutype (AUT) and Dragon; learn how to use the clinical software with a tablet and handwriting recognition; learn how to troubleshoot clinical software problems; |
| Software – Non-Clinical | MAMC | Learn about the basics of non-clinical software; learn about updates in a virtual and client-based environment; learn the management basics for each application (challenges, solutions); learn about versioning and images |
| Large Clinic – Challenges | McChord | Work with IMD to learn the challenges in supporting a large, external clinic; learn from the clinical end users and administrative leaders the challenges of Health IT in a remote, large clinic |
| Large MTF – Challenges | MAMC | Work with the IMD team to learn the challenges in supporting a large, tertiary care medical center; learn from the clinical end users and administrative leaders the challenges of Health IT in a large MTF with multiple specialties, GME, and many systems to use |
| Medium MTF – Challenges | NHB | Work with the IMD team to learn the challenges in supporting a community hospital, especially one with a GME mission; learn from the clinical end users and administrative leaders the challenges of Health IT in a moderate sized MTF with both an operational support mission and a GME mission |
| Systems/Servers - Overview | MAMC/NHB | Learn from both IMD and Informatics staff at a large tertiary care medical center and a medium-sized MTF an overview of the process and challenges in installing, configuring and maintaining servers and entire systems (often with their own, dedicated servers) |
| Virtualization - Application | MAMC/McChord | Learn from IMD the process and challenges in application virtualization (to include server configuration and maintenance); from the clinical end users, learn the benefits of and challenges to application virtualization at their level, especially with regards to work flow |
| Virtualization – Desktop/User | MAMC/McChord | Learn from IMD the process and challenges in desktop/user virtualization (to include server configuration and maintenance); from the clinical end users, learn the benefits of and challenges to desktop/user virtualization at their level, especially with regards to work flow |
| Virtualization - Server | MAMC/McChord | Learn from IMD and Informatics the processes and challenges in configuring and maintaining virtualized servers. This is to be distinct from application virtualization, which is powered from the virtualization server. |
| DBC - Overview | MAMC | Learn from Informatics and IMD about the DBC process (overview only) and what sort of projects/capabilities fall under the auspices of this program |
| Switches - Overview | MAMC/NHB | Learn from IMD about configuration and maintenance of network switches (overview only) |
| Network - Overview | MAMC/NHB | Learn from IMD about configuration and maintenance of networks (overview only) |
| Wireless Access Points - Overview | MAMC/NHB | Learn from IMD about configuration and maintenance of network WAP’s (overview only) |
| Ethernet LAN | MAMC/NHB | Learn from IMD about configuration and maintenance of an Ethernet LAN (overview only) |
| Dead Zones | MAMC/NHB | Learn from IMD about identification and resolution of network (WLAN) dead zones (overview only) |
| Workflow Analysis – Overview | MAMC | Work with and learn from the Madigan CWA’s about the steps and processes involved in performing, publishing and implementing clinical workflow analyses for different levels of clinics and departments |
| Predictive Analytics - Overview | MAMC | Learn from Informatics personnel the concepts and tools used for predictive analytics. If possible, we will engage in practical applications and established programs at MAMC or local entities. |
| Workflow Analysis – Case Example | MAMC | Work with one or more CWA’s to perform and develop the analytics for a real-life workflow analysis. Not the entire project, but enough to understand how it is done and the level of effort involved. |
| Standardization – Case Example | MAMC | Work with Informatics personnel to learn about the process involved in standardizing software and content. Work with both CI and IMD personnel to discuss and learn how best to approach standardization using case examples…as both good and bad methods to use. |
| Standardization – Principles | MAMC | Discuss the approaches to standardization of both software and hardware, using the principles of portfolio management, user engagement, governance |
| GUI Design – Overview | MAMC | Discuss the concepts of GUI design using real world examples of GUI’s considered to be excellent and those considered to be not good, even horrid. Discuss the principles of GUI design. |
| Training – Overview/Concepts | MAMC/NHB/McChord | Work with CI personnel to review concepts of training software and systems, and sit in on some classes to understand the different approaches to ILT. Go over the principles of training and teach some classes. |
| Usability and Testing | MAMC | Review the principles of usability and testing, and visit with CI designers to go over how those principles are applied to BI products and other applications. If possible, visit with Microsoft to go over how usability testing is designed and carried out. |
| DBA – Overview | MAMC | Work with the CI DBA’s to learn what the DBA’s role is in designing data queries and BI tools; understand the challenges and limitations of data…to include accessing data sources, designing queries and the effect of data integrity |
| Business Analytics – Overview | MAMC | Work with the members of the MAMC BI team to learn about the basics of business analytics.  Business analytics (BA) refers to the skills, technologies, applications and practices for continuous iterative exploration and investigation of past business performance to gain insight and drive business planning. Business analytics focuses on developing new insights and understanding of business performance based on data and statistical methods.  Business analytics makes extensive use of data, statistical and quantitative analysis, explanatory and predictive modeling, and fact-based management to drive decision making  Analytics may be used as input for human decisions or may drive fully automated decisions. |
| Business Intelligence – Overview | MAMC/NHB | Work with the members of the MAMC BI team to learn about BI, how it is designed, how it is developed and how it is deployed. Learn about Agile processes involved in delivering what the customers need and making it both functional and usable.  Business intelligence traditionally focuses on using a consistent set of metrics to both measure past performance and guide business planning, which is also based on data and statistical methods.  Business intelligence is querying, reporting, OLAP, and "alerts." |
| Project Management – Basics | IMD/CI | Work with MAMC CI and IMD personnel to learn the basics of project management.  The topics for discussion include planning, organizing, motivating, and controlling resources to achieve specific goals. |
| Project Management – Advanced | IMD/CI | Work with MAMC IMD and CI personnel to learn advanced project management principles.  A traditional phased approach identifies a sequence of steps to be completed:   1. initiation 2. [planning](http://en.wikipedia.org/wiki/Project_planning) and design 3. execution and construction 4. monitoring and controlling systems 5. completion   Will discuss the traditional approach as well as the other available approaches, and use a real world example of how to manage a Health IT project from start to finish. |
| Budgeting – Basics | CI/RMD | Work with CI and possibly RMD personnel to learn the basics of budgeting in the DoD/MHS environment. \*\*\* |
| Budgeting – Advanced | CI/RMD | Work with CI and possibly RMD personnel to learn the advanced budgeting principles in the DoD/MHS environment, to include both departmental and project budgeting. \*\*\* |
| DFAR – Overview | CI/RMD | Work with CI and possibly RMD personnel to learn the basics of the DFAR, to include the regulatory and legal components that could cause problems when trying to perform the CMIO role. \*\*\* |
| Governance/Portfolio Management - Basics | IMD/CI | Work with CI and IMD personnel to understand the basics of portfolio management and governance for hardware, software and development capabilities. |