CAP Foundation Digital Pathology and Artificial Intelligence Advanced Training Grant – sponsored by PathAI

PathAI is a leading provider of AI-powered technology tools and services for pathology, leveraging modern approaches in machine learning, with a mission to improve patient outcomes with AI-powered pathology.

About the Grant

The field of pathology has experienced unprecedented growth in the areas of Digital Pathology and Artificial Intelligence applications. It is essential for the future generation of pathologists to have a working knowledge and understanding of both the application and challenges in this field. This grant offers, CAP Junior Members, exposure to digital pathology and artificial intelligence, including how ML-based diagnostic tools are developed, from early concepts to validation and development, concentrating on the role pathologists play in this process. **This training elective will take place starting in Q4 2022**.

This four-week elective takes place in Boston, Massachusetts, under the direction of Dr. Fedaa Najdawi, senior pathologist, and Dr. Eric Walk, chief medical officer at PathAI. The training will focus on the process of translating the latest and most promising scientific discoveries and hypotheses in the fields of pathology and oncology using AI powered tools.

The participant will also be exposed to the various roles' pathologists can have within PathAI. The overall goal is to create awareness of how pathologists can significantly impact patient care on a global level through diagnostic innovations and personalized AI-powered pathology.

This includes exposure to several of PathAI teams as well as PathAI regular scientific and research meetings and education sessions.

Each elective is customized to the specific interests of the recipient based on a call with Dr. Najdawi prior to the start of the month.

Based on these interests and also project timing and availability, a schedule is created to include exposure to several of the following PathAI functions, weighted according to the recipients' interests and focus areas:

- **Scientific Team:** Exposure to PathAI scientific team that collaborates with industry and academic investigators and stakeholders to explore, assess, and validate new machine learning biomarker concepts that may lead to medically valuable diagnostic, prognostic, and predictive ML-tools that benefit clinical decision making.

- **Pathology group:** Exposure to the PathAI internal pathology team, consisting of multiple pathologists working on projects/programs across disease areas, and collaborating with the different teams across the company.

- **Product and Engineering/Machine Learning:** Exposure to PathAI engineering and ML teams both in the context of model development projects as well as part of the product and platform team.

- **Medical Affairs:** Exposure to the PathAI Medical Affairs group that develops educational and medical evidence programs in partnership with industry and academic partners.

- **Quality and Regulatory Affairs:** Exposure to the PathAI Quality and Regulatory Affairs group and key aspects of regulated product development such as a Quality Management System, FDA Design Control, and common regulatory pathways.

Residents are not typically exposed to digital pathology and AI algorithm development in training programs, therefore, this elective offers the recipient the following learning opportunities:

- Instruction and experience in digital pathology and machine learning algorithm product development.
- Working knowledge of regulated product development including associated challenges.
- Experience with the use and interpretation of digital pathology and machine learning tools as it pertains to all phases of pharmaceutical drug development and clinical diagnostics.
- Hands-on experience in how pathologists can have a career in the diagnostics industry, specifically in the start-up company environment. This includes becoming familiar with medically relevant functional areas such as Medical Affairs, Clinical Science, and Translational Pathology.

At the end of the elective, the recipient is expected to:

- Understand the overall process of, and challenges associated with, translating AI based applications into a validated diagnostic tool for routine pathology use, including collaborations between academia or industry, regulatory approval, and intellectual property issues.
- Have a better understanding of how ML models are developed, from ideation to validation.
- Understand the role pathologists can play in the diagnostics field as it evolves to include personalized AI-powered pathology approaches.
- Submit a photo and evaluation to the CAP Foundation summarizing their experience.