

## AIMS FELLOWSHIP CURRICULUM

### ANATOMICAL PATHOLOGY

Module Code: APIV (Elective Module)

Module Title: Image Analysis and Macroscopic and Microscopic Photography

Module Convenor: Mr Barry Gormley  
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Discipline Committee: Mr Ron Rainbow  
Mr Roy Ellis

Discipline Modules: API Laboratory Histology (Compulsory)  
APII Specialised Histology (Compulsory)  
APIII Electron Microscopy (Elective)  
APIV Image Analysis and Macroscopic and Microscopic Photography (Elective)  
APV Molecular Biology (Elective)

Data Module Outline last reviewed: October 3, 2004  
Data Module Outline last modified May 4 2007

## **A. Objectives**

This module is designed to provide the candidate with an in depth knowledge of image analysis including methods, image analysis software, specimen analysis and the uses of image analysis in anatomical pathology. It is also designed to provide the candidate with an in depth knowledge of macroscopic and microscopic photography including camera types, black and white and colour processing. This module assumes that the candidate has a good grounding in histological / histopathological technique.

## **B. Interrelationship of the Module to Other Modules**

This module should be taken after completion of Modules API, APII and APIII.

## **C. Brief Description**

This module will provide an in depth knowledge of the imaging of specimens including image analysis and macroscopic and microscopic photography, both in black and white and in colour and the uses of imaging of specimens to anatomical pathology.

## **D. Content**

An in depth knowledge of Image Analysis

- Point processes
- Area processes
- Frame processes
- Geometric processes
- Image analysis software
- Specimen Analysis including specimen preparation for image analysis and quantitative data from image analysis
- Uses of image analysis in anatomical pathology

An in depth knowledge of macroscopic and microscopic photography

- Macrophotography including
  - Black and white photography and processing
  - Colour photography and processing
- Camera types including digital
- Microphotography including
  - Black and white photography and processing
  - Colour photography and processing
- Camera types

### **Objective**

To understand the use of image analysis and macro and micro photography in the histopathology laboratory.

## **E. Rationale for the content.**

The knowledge of image analysis and macro and microphotography will further facilitate an understanding of the role of the histopathology laboratory in the diagnosis and treatment of disease.

## **F. Examination**

Under the Fellowship Regulations a 3 hour written examination will be held at the completion of each Module. Each examination will contain a mixture of short answer questions and essay style questions. In some examinations clinical and laboratory management case based scenarios will be included in the question mix.

Examination for this module will focus on an overall understanding of the major topic themes outlined in the content section.

The examination will consist of:

- Two essay questions, each with a total value of 35 marks; suggested time allocation 30 minutes per essay – total 60 minutes.
- Twenty short answer questions, each worth five marks – total value for the short answer questions 100 marks; suggested time allocation five minutes per question – total 100 minutes.
- Twenty minutes for re-reading and review

There will be an initial reading time of fifteen minutes, during which no writing will be permitted.

#### **G. Texts and supporting material**

The following texts should be consulted. Bancroft and Gamble, Woods and Ellis as outlined in previous modules, and those listed below all provide an excellent resource.

- Johne,B . *Image Processing for Scientific Applications*. CRC Press 1997
- Marchevsky,AM, Bartels,PH, *Image analysis A primer for pathologists* Raven Press 1994
- Westra,WH, Hruban,RH, Phelps,TH, Issacson,C, *Surgical Pathology Dissection – An illustrated guide* Springer, 2<sup>nd</sup> Edition 2003 (Chapter 4)
- Wooton,R, Springall,DR, Polak,JM *Image analysis in Histology* Cambridge University Press 1995

It is suggested you consult these texts in the library to broaden your knowledge.

#### **H. Appointment of a Mentor**

Candidates are strongly advised to nominate a mentor for the Module at the time of application for entry into the Fellowship program. If a candidate is unable to nominate a mentor then they should contact the Module Convenor for assistance. The appointment of a mentor is made by the Examinations Council.

#### **I. Module Communications:**

Module Convenor : Mr Barry Gormley  
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Fax : 61-8-83572135

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#### **J. Candidate Feedback**

Immediately following notification of the examination result, each candidate will be asked to complete a feedback questionnaire on the module. However feedback at any time during the study of the module is encouraged through the mentor or directly to the Module Convenor.