Chemical Residue Laboratory

FAST Fellowship Program Content and Duration

The Program is a 24 month, 40-hour per week, rotational training assignment in multiple aspects of the division’s laboratory work. The recommended minimum times in the various phases are outlined below. A specific program, detailing the trainers, laboratory sections and work assignments, as well as selection of a Project will be decided together with the Trainee within the first 30 days of the program. This Individualized Training Plan (ITP) will be documented on FDACS form 14027 (See Appendix A) The Trainee must be given meaningful work assignments that will provide hands-on experience from a scientific perspective. The Trainee will become competent in assigned methodologies and work side-by-side with laboratory staff on routine samples for major portions of their program. This will provide the Trainee with real world experience in day-to-day laboratory work.

The Trainee and the Mentor will agree on a project from among several needed by the laboratory. All projects will be the work of the Trainee and one or more members of the laboratory staff with the Trainee being given the lead. Assignments will include written reports and formal presentations that help develop the Trainee’s communication skills. The Project assignment and completion of the Program are ultimately at the discretion of the Director.

The training schedule for an individual Trainee is dependent upon the needs and workload in the various phase areas. Normally, the training schedule will be developed using the recommended time frames below, but special needs may require the modification of the training schedules. The Trainee must, however, be scheduled and attend all phases of training in the following outline.

For example, a laboratory may have a specific need for a chemist in a certain method area and help with a specific project. In such cases, a special schedule may be developed to emphasize those areas that impact that method or project by requiring more than the recommended time be spent in related phases. If a project involves development of a new extraction clean-up, for example, the Trainee might spend more time in Sample Extraction. The specific program plan will be agreed upon with the Trainee. The Program Coordinator will determine the schedule to include both laboratory and administrative exposure in the following areas:

(A) Phase One - Department and Lab Overview Training (1 week)

- Orientation by Department and Division
- Personnel Orientation
• Safety Training
• Ethics Training
• Information Security Awareness Training
• Introduction to the ISO 17025 Management System
• Overview of pesticide residue regulations
• Begin Chemical Residue Training and Competency Checklist

(B) Phase Two - Laboratory Training - (20 Months)

Development of Program Specifics and Choice of Project

• Choose from available projects
• Appoint a mentor
• Assign a project supervisor and project team members
• Outline the project objectives and timeline
• Identify instrumentation, equipment and supplies needed
• Identify skills and training needed
• Define the deliverables for this project
• Detail the individualized Program schedule and goals

Sample Prep – 2 months

• Use of the Laboratory Information System (FSLIMS)
• Sample Receipt
• Sample Custody
• Sample Preparation
• Supply Ordering and Receipt

Standards – 3 months

• Introduction to Pesticide Chemistry
• Weighing
• Pipette use
• Standards preparation

Sample Extraction – 3 months

• Weighing
- Labeling
- Extraction
- Solid phase cleanup
- Concentration

**Gas and Liquid Chromatographic Mass Spectroscopy – 12 months**

(Due to the complexity of triple quadrupole, time-of-flight and high resolution mass spectroscopy, the Trainee will focus more attention on one instrumental technique related to the needs of the special project selected. This will allow the Trainee enough time to both learn and utilize the instrumental technique for completion of their project.)

**Secondary Instrumentation Familiarization – 3 months**

- Instrument operation
- Data processing
- Data analysis and reporting
- Instrument Maintenance

**Primary Instrumentation Technique – 9 months**

- Instrument operation
- Data processing
- Data analysis and reporting
- Instrument Maintenance

**(C) Phase Three – All Trainees – Project (This phase will run concurrent with the others.)**

The Project Phase begins in the first three (3) months of the program and will overlap with the second phase. In the first months of the Program the majority of the Trainee’s time will be spent in learning and perfecting routine laboratory techniques. By the 20th month, the Trainee will focus the majority of their time on their project. The purpose of this phase is to provide the Trainee with hands-on project experience and time to complete project objectives, reports and presentations. This phase of the Program is intended to be independent work under the direction of a project supervisor. It is expected that the Trainee will complete the agreed upon project work and prepare a detailed development and/or validation report.
(D) Masters and PhD Trainees – Oral or Poster Presentation

Program Master Trainees are required to complete work on their Project as defined in (C) and present an oral or poster presentation to the FDACS laboratory community. Opportunities to present work at a conference or workshop may be available.

(E) PhD Trainees Only – Journal Article Publication

Program PhD Trainees are required to complete work on their Project as defined in (C) and (D) and publish the results in a minimum of one journal article based on the Project complexity. It may not be possible to publish this work within the 24 month program. All data are property of the FDACS laboratory and the Trainee cannot publish the data without permission of the laboratory. If the results are not sufficient for full publication, the laboratory reserves the right to submit the publication (preferable in peer-reviewed journal) without the permission of the Trainee. The Trainee will be included as author or under "Acknowledgement" depending upon of the Trainee contribution to the project. Previously published or unrelated articles will not fulfill the Program requirement.