



Kansas State University hosted training workshops in collaboration with the NVSL, Diagnostic Virology Laboratory and Foreign Animal Disease Diagnostic Laboratory, for the use of high-throughput testing systems. Sessions were held the weeks of May 19, June 23, and July 22, 2008. Representatives from 31 NAHLN laboratories participated in a two-day training course that included an overview of high-throughput systems, instruction on equipment programming, and breakout sessions that provided hands-on use of each piece of equipment. The systems have been validated for use with real time PCR analysis for AI, CSF, and FMD.

The evaluation format was structured to provide feedback on presentation and laboratory instruction, the training manual, as well as additional comments on pros and cons of each and overall comments on the course. Each question is provided below as well as a summary of the responses. Participants were asked to respond with a numerical score of 0 – 10 with 10 being the most favorable.

The first summary of results is from the Beta Session that took place in September 2007, and the remaining summary of results is from Sessions 1, 2 and 3 that were held this year.

### Beta Session Summary of Results

#### ➤ Presentation and Laboratory Instruction

##### 1) **Course material was relevant and informative**

The range of scores was 8-10 with an average score of 9.3.

Overall comments were that the material presented was relevant, helpful, informative, and well-organized. The participants appreciated the hands-on opportunities during the training.

##### 2) **Course material was presented in a manner that was clear and comprehensive**

The range of scores was 7-9 with an average score of 8.2.

Overall comments were that the pace of the presentation was comfortable with adequate time for questions and discussion. Highlighted segments that the participants liked were the dry and wet lab training days. Minimal improvements can be made to the presentation and training manual materials, but was good overall.



**3) Presenters clearly demonstrated a working knowledge of the subject matter**

The range of scores was 7-10 with an average score of 8.3.

Overall the presenters were good, varying in levels of experience. More expertise was needed in the area of instrument troubleshooting.

**4) Presenters were open to questions and able to provide sufficient responses**

The range of scores was 8-10 with an average score of 9.2.

Presenters did a wonderful job providing responses to questions and if the answer was unknown, were willing to find answers and get back to the participants. Certain presenters were recommended for future training.

**5) My learning objectives for this course were met by the material provided during this training session**

The range of scores was 9-10 with an average score of 9.7.

The training enabled participants to feel comfortable with performing procedures. Good background was provided for using the equipment (i.e. Biomek NXp).

**6) The time allotted for hands-on training and demonstration of the equipment was appropriate to provide background and confidence to use these systems in my laboratory**

The range of scores was 8-10 with an average score of 9.2.

Some thought there was appropriate time allotted for discussion and practice and others wanted more. A suggestion was made to form smaller groups during the initial programming to avoid the crowding around the instrument.

**Pros and Cons of the Presentation and Training - Improvement for future programs**

**Pros:**

- Liked the location of the training
- Like the format/layout of the training
- It was a collaborative experience



- Hands-on
- Discussion of points among students
- Learning through networking
- Excellent training course
- Helpful in development of process
- Instructors and individuals involved were intelligent/helpful/open to suggestions

**Improvements:**

- Point out "Do's and Don'ts"
- More info on "dry" day before tackling instrumentation
- More description on Biomek in intro, basic description of plate set-up - what it does and how it works

➤ **Training Manual**

**7) The manual was a useful aid in examining the information presented in lecture and labs**

The range of scores was 6-9 with an average score of 8.2.

The training manual was well received as informative and helpful but some improvement suggestions were to add page numbers, add graphics along with the text, and to provide more clarity in the Biomek system portion.

**8) The manual was well organized, allowing for easy access and reference to the material**

The range of scores was 6-9 with an average score of 7.6.

Participants commented that the manual was informative and also liked the tab dividers and color coordination of the manual. A comment was made that this training benefits all participants, and that there is a lot to know and understand with a high throughput system.

Improvement suggestions were to add graphics along with the text, diagrams next to outlined instructions, overall formatting changes, and to provide clarity in the Biomek system portion.

**Pros and Cons of the Manual - Improvement for future programs**

**Pros:**

- ISU provided good lab space and materials for the training; similar quality should be considered for the next training



**Improvements:**

- Have a bigger binder ring size so that pages can be turned more easily
- Include blank pages in manual for note taking
- Have diagrams match text
- Add troubleshooting section on each training portion (individual systems would be helpful)
- It would be nice to be able to review the manual prior to the training session
- Don't recommend combining CSF/FMD with AI – that should be 2 separate manuals.
- The manual should be organized with workflow
- A brief presentation on each component of the system would be helpful.
- Add a Table of Contents for each section

**General Comments:**

Participants commented that they were thankful for the training session and the helpfulness of instructors. It was noted that this training was needed and that the objectives were met.

There were comments that the manual could be organized better and to add visual representations right after instruction. The information was mostly clear, but a bit choppy due to this being the first training session.

Participants were actively involved and open about what they felt was needed or changed. Will need to get input again as we continue to develop the final SOP.

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**Sessions 1, 2 & 3 Summary of Results**

➤ **Presentation and Laboratory Instruction**

**1) Course material was relevant and informative**

The range of scores was 7-10 with an average score of 9.3.

Received feedback that the Biomek NXp training was valuable, but that the ABI 7500 and the Kingfisher 96 have already been readily used in certain laboratories.

Received feedback that the course was a good introduction/exposure to equipment; but would need more hands-on time with equipment to face problems or gain a better understanding.



Participants commented that the course material was informative, easy to follow, a good reference for laboratory use, and condensed to what they really need to know, pertaining to work currently being done in the laboratory.

**2) Course material was presented in a manner that was clear and comprehensive**

The range of scores was 7-10 with an average score of 9.4.

Participants commented that the course material was well organized for easy reference and that it was well presented in a clear, concise, easy to follow format.

**3) Presenters clearly demonstrated a working knowledge of the subject matter**

The range of scores was 6-10 with an average score of 9.5.

Participants commented that the presenters and assistants were helpful and knowledgeable/familiar with the subject matter.

**4) Presenters were open to questions and able to provide sufficient responses**

The range of scores was 7-10 with an average score of 9.7.

Participants commented that the group size was optimal, and that the presenters were well prepared and open and knowledgeable about the subject matter, in addition to other NAHLN-related topics. Presenters provided complete answers to participant inquiries.

**5) My learning objectives for this course were met by the material provided during this training session**

The range of scores was 7-10 with an average score of 9.4.

Received feedback of wanting more information on troubleshooting the equipment, not just how to set up the programs.

Received feedback that new knowledge was learned in the Biomek section, but that the ABI 7500 and BioSprint equipment had previously been used.

Participants commented that some of the course was an overview, but that they still learned new information. Some also commented that the course provided a great forum to discuss different ideas, problems, etc. with other participants, and the hands-on section was critical – just the manual alone would not have been sufficient.



**6) The time allotted for hands-on training and demonstration of the equipment was appropriate to provide background and confidence to use these systems in my laboratory**

The range of scores was 5-10 with an average score of 9.3.

Received feedback that the 7500 and BioSprint were already being used in the laboratory, but that the Beckman instrument training was valuable.

A participant commented that the experiment set-up time was a great opportunity to ask questions.

Comments reflected that there were different experience levels participating in the course and that more hands-on time was needed for the less experienced participants.

➤ **Training Manual**

**7) The manual was a useful aid in examining the information presented in lecture and labs**

The range of scores was 7-10 with an average score of 9.1.

Received feedback that some typos in the manual made parts confusing.

Received feedback that the manual seemed useful and will hopefully be helpful in the participants' laboratory setting with own equipment.

**8) The manual was well organized, allowing for easy access and reference to the material**

The range of scores was 7-10 with an average score of 9.4.

Received feedback that the manual was useful in that it compiled in one spot all programs for high-throughput equipment.

**Pros and Cons of the Presentation and Training - Improvement for future programs**

**Pros:**

- The smaller group size was well received and fostered instructor/student communication
- Beneficial/good training session



- Training session conducive to information exchange
- Appreciative of patience of instructors

### **Improvements:**

- Striving to meet the needs of all trainees and their set of skills and knowledge level
- More time devoted to the Biomek (comment from a participant with limited knowledge of this machine)
- Would have liked more information on how to troubleshoot equipment in response to errors/malfunctions
- Incorporate Qiagen lecture into the first day instead of the laboratory lecture
- Recommended class presentation improvement for certain instructor
- Include the BioSprint/Kingfisher protocol on the training CD

### **Pros and Cons of the Manual - Improvement for future programs**

#### **Pros:**

- The training manual was well organized and easy to follow – much better than the manufacturer’s manual
- The manual will be a good guide for use in own laboratory
- Liked the color diagrams that showed exactly what you would be looking at.

#### **Improvements:**

- The manual was vague without the hands-on application. The manual could include more step by step detail (e.g.: more detailed procedures in the “pause” and “drying” step in the BioSprint/Kingfisher procedure)

### **General Comments:**

Participants commented that they were extremely thankful to Kansas State for hosting the training and that the facility was excellent/top notch.

The smaller group size was well received and fostered communication with individuals in the NAHLN system. The open and friendly environment provided opportunity to exchange ideas and ask questions, and to interact with other people who are already using the equipment.

The training was organized well, given the time allotted and equipment available. Comments were received that the training was enjoyable and that the trainers were friendly and knowledgeable in helping with various phases of the training.

Both working with the software and the practical hands-on training deemed useful. The participants commented that they were more comfortable with the equipment than prior to the training.



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Received feedback that the technicians/equipment reps were helpful and demonstrated troubleshooting the equipment and showing things about the equipment that normally wouldn't have been known. More focus on troubleshooting common problems would be helpful.

Suggestion made to make the class material information on the projector a little bigger so that it is easier to read in order to follow the flow of the lecture.

Suggestion made to include the presenters and helpers contact information for assistance.

Suggestion made to offer this training in conjunction with the AAVLD meeting.

Feedback received that the arrangement instructions around room reservations needed to be clearer and also that Manhattan, KS was a difficult location to get to.

Participants were appreciative and thankful for the trainers and the NAHLN staff's time and efforts in providing a "successful informative training session."

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