Orchard and the University of Ontario Team up to Prepare the Next Generation of Medical Technologists

The University of Ontario Institute of Technology (UOIT) opened its doors in 2003, and a year later, it began accepting students into its Medical Laboratory Science (MLS) program which is housed within the Faculty of Health Sciences. Approximately 145 students are currently enrolled in the program, which boasts a four-year degree where students learn the five core laboratory disciplines of Biochemistry, Microbiology, Hematology, Transfusion Science, and Histotechnology, along with breadth courses in Health Science.

"We knew when we started the program that we wanted to expose our students to everything they'd encounter in a professional setting," says Nancy Bergeron, a faculty member in the MLS program. "All of our instructors have a clinical lab background, so we understood the importance of having students use a laboratory information system while in training."

During UOIT's search for an LIS, the faculty quickly realized most of the Canadian laboratory systems were too large to meet their needs. "We couldn't find something

University of Ontario Institute of Technology faculty from left to right: Ruth Simpson, Nancy Bergeron, Evelyn Moreau, Connie Thurber, and Joan Laurie.

that fit us," recalls Nancy. In 2008, Nancy and another faculty member were given the opportunity to attend the Clinical Laboratory Educators' Conference, where they discovered Orchard® Harvest™ LIS. "We needed a system that was scalable, and Harvest was able to do just what we needed. From day one we knew this was the system for us," explains Nancy.

UOIT purchased the system in July 2008. "After we purchased the system, Orchard sent someone to our lab to get a lay of the land and to figure out how we would use the software. It was great! They then came back for the installation and training," recounts Nancy. The lab has been live since January 2009 and students have already been placing orders, approving results, and printing reports. "It really is a nice system to use," says Nancy. "Everything is simple to set up and easy for our students to learn. Using Harvest helps our students learn valuable skills which they will take with them into the field," explains Nancy. Harvest LIS has become a competitive advantage for UOIT, setting them apart from other medical laboratory sciences programs, and one of which they are very proud. "We needed Harvest LIS to run the program we wanted in the way we wanted," says Nancy.

Currently, the curriculum includes students in the lab running samples, logging results into the LIS, and printing QC reports. "We have created benches that students must work through," explains Nancy. The program currently runs two labs a day, with 20 students per lab. "It is important to have students in the lab using the system. The hands-on experience gives them the opportunity to see the LIS in action and solve

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UOIT

possible problems as they arise.

According to Nancy, a few features in Harvest LIS have helped to enrich the curriculum taught at UOIT. A favorite Harvest feature is the Patient Previous Results button, which will take a student back to all prior hematology results for the particular patient. This feature shows them how results can change over time.

This method of hands-on LIS education provided by UOIT is an asset to its students. The program is one of a few in Canada, and the faculty looks toward the future when they expand the experience by interfacing Harvest LIS to the other information systems used in the nursing and health information management programs giving students exposure to inter-profession activites. Until then, Nancy encourages anyone looking to implement an LIS into their teaching curriculum to consider Orchard Harvest LIS, as it is easily scalable to fit the unique needs of a teaching program.

News@orchard is Now Available Via Email!

Because of your feedback, Orchard is now offering our quarterly newsletter via email in addition to our printed and mailed version. If you or someone you know would like to receive a copy of our newsletter electronically, please visit our website, **www.orchardsoft.com**, to sign up to receive your quarterly issue. We hope you enjoy the alternative format, and thank you for taking time to visit us at the Orchard.

employee spotlight

Daphne Davis:
Systems Engineer Training Manager

When Daphne Davis joined the Orchard team six years ago, she traveled the country as a Systems Engineer, installing our software in labs of all shapes and sizes. Today, Daphne works in the corporate office in Carmel, Indiana, training and preparing our team of Systems Engineers. She also helps develop Orchard's technical and reference documentation.

Before coming to Orchard, Daphne worked as a Technical Administrator, designing clinical trial studies, and as a laboratory bench tech. She attended Indiana University East, Ball State, and Ivy Tech while obtaining her MLT(ASCP)(NCA) accreditations.

Daphne and her husband have two children, Brittney and Joshua, both of whom are in college. They have a three-year-old grandson named Israel, who is a source of great joy in their lives. Their beloved dog, Neko, a full-bred Siberian Husky, was found in Gulfport, Mississippi, where Daphne's husband was helping his cousin rebuild after Hurricane Katrina. Neko had survived the hurricane alone but was severely injured. He was lovingly brought back to Indiana and is now an important part of their family.

Tech Tip: Min and Max Functions

In the May 2009 issue of *Annals of Internal Medicine*, Drs. Levey and Stevens proposed a new equation for estimating Glomerular Filtration Rate (eGFR). Data cited in the article suggest the equation, known as the CKD-EPI equation, to be superior to that of the MDRD equation currently in use by most laboratories. This equation uses many of the same parameters as the MDRD equation and was derived from "cross-sectional analysis with separate pooled data sets for equation development and validation, and a representative sample of the U.S. population for prevalence estimates." It is of note that this equation is valid only for creatinine methods that are traceable to the IDMS standard.

This equation can be expressed in one of two ways: a unified equation that uses the math functions MIN and MAX, or a set of formulae that are based on patient race, patient sex, and the measured creatinine value. The second approach would require that the patient race field is filled; however, many of our clients do not populate this field for a variety of reasons. They would, therefore, be unable to use that configuration.

The first approach could be written as a set of two cascading conditional formulas:

(#PATIENTSEX#=1)?141*(MIN((#CREAT#/0.7),1)^-0.329)*(MAX((#CREAT#/0.7),1)^-1.209)*
(0.993^#PATIENTAGE#)*1.018*{#PATIENTRAC#}

(#PATIENTSEX#=2)?141*(MIN((#CREAT#/0.9),1)^-0.411)*(MAX((#CREAT#/0.9),1)^-1.209)*
(0.993^#PATIENTAGE#)*{#PATIENTRAC#}

The following ACOs are needed to support this formula:

```
[Formulas]
SEX_EGFR_F=1
SEX_EGFR_M=2
RACE_eGFR_Black=1.159
RACE_eGFR_Asian=1
RACE_eGFR_Caucasian=1
RACE_eGFR_Hispanic=1
RACE_eGFR_N/A=1
RACE_eGFR_NativeAmerican=1
```

Also, note the curly braces around the patient race parameter. This allows the use of patient race to be more flexible—this syntax tells Harvest LIS to fill the patient race per the ACO, but to use 1 if no patient race is assigned. Also, it is not needed in the "if" clause in the condition. However, this version of the calculation requires the use of the MIN and MAX math functions. These functions are now available in versions of Harvest LIS 8.0 build 100126 and higher.

The second approach is more complex: a cascading series of formulas based on patient race, sex, and measured creatinine value:
- if the patient is black, female, and her creatinine is <=0.7, 166*(#CREAT#/0.7^-0.329)*(0.993^#PATIENTAGE#)
- if the patient is black, female, and her creatinine is > 0.7, 166*(#CREAT#/0.7^-1.209)*(0.993^#PATIENTAGE#)
- if the patient is black, male, and his creatinine is <=0.9, 163*(#CREAT#/0.9^-0.411)*(0.993^#PATIENTAGE#)
- if the patient is black, male, and his creatinine is >0.9, 163*(#CREAT#/0.9^-1.209)*(0.993^#PATIENTAGE#)
- if the patient is not black, female, and her creatinine is <=0.7, 144*(#CREAT#/0.7^-0.329)*(0.993^#PATIENTAGE#)
- if the patient is not black, female, and her creatinine is >0.7, 144*(#CREAT#/0.7^-1.209)*(0.993^#PATIENTAGE#)
- if the patient is not black, male, and his creatinine is <=0.9, 141*(#CREAT#/0.9^-0.411)*(0.993^#PATIENTAGE#)
- if the patient is not black, male, and his creatinine is >0.9, 141*(#CREAT#/0.9^-1.209)*(0.993^#PATIENTAGE#)

Due to constraints in populating patient race, this approach is more limiting and the setup more complex.

In either case note that, to have the new equation and the original MDRD equation exist side-by-side, you must create a separate test record with a unique identifier for the new GFR value and edit the ACOs accordingly.

While it appears the clinical use of this equation is still being evaluated, interest was expressed on the Harvest LIS Online Forum, leading to the development and addition of the new math functions. Once again, valued input from our users has assisted and guided the expansion of Harvest LIS functionality. Should you and your medical director elect to implement the CKD-EPI formula in your Harvest LIS and you need assistance, please call Orchard Technical Support at **(800) 571-5835**. 🍑

Feature Focus: Orchard Harvest LIS v8.5 Offers Many Benefits

Orchard Harvest LIS v8.5 offers a number of new features and an improved, faster, and more scalable database engine. Many customers have taken advantage of these powerful additions to the formidable Harvest LIS tool set. Here are a few of the best reasons for you to schedule your upgrade today!

• **Additional options for data mining, such as the option to create pie charts using numeric data in the data browsers.** In addition to all the powerful capabilities in the data browsers, you may now create line or pie charts natively in Harvest LIS to make interpretation of the data visually understandable.
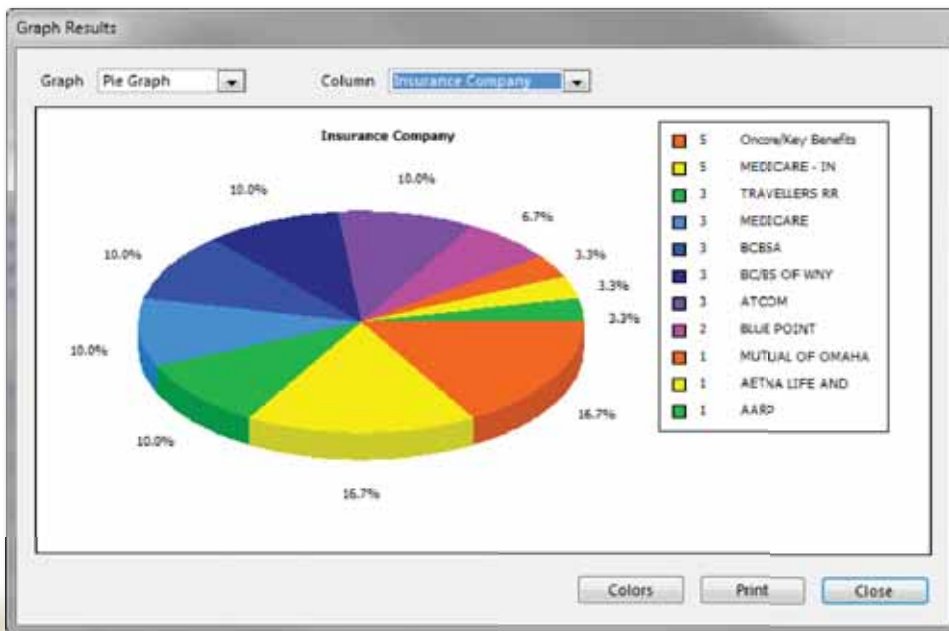
• **Unlimited user defined fields for order choices, tests, locations, personnel, and patients.** This feature allows facilities to store additional information required for their unique situation or for state and local regulation compliance. Add fields to your patient file to store latex allergy or stated blood group. Add a field to the personnel table to store the provider's specialty or local license numbers. You can add as many as you need and make them specific to your requirements.

• **Enhancements to the database allow for greater scalability of 64-bit hardware and 64-bit operating systems, including Windows Server 2008.** Harvest LIS version 8.5 offers greater data storage capacity, which provides the option for less archiving, so that more data can be kept online for reports and analysis. The updated database engine improves scalability through multi-threading and multi-core awareness. The new database server takes advantage of all available processors, providing much greater throughput and faster response times throughout the application.

• **Full TWAIN interface capabilities provide for manual scanning and storing documents.** Linking documents in Harvest LIS is easier than ever. The TWAIN interface to scanners and cameras allows you to import pictures, microphotographs, and documents directly into Harvest LIS with a few mouse clicks. In version 8.5, you can also link documents to specific order choices, locations, and personnel, allowing you to store documentation of procedures, employee training, and other regulatory information right where it's needed most.

• **A modularized interface engine allows you to get updates to your instrument interfaces separately from upgrading your main Harvest LIS application.** Updating your interfaces became simpler than ever: just download the update from the customer-only area of our website and run the Installshield. There is no need to reinstall or update the entire application just to get those critical changes or new interfaces.

To take advantage of all the new features and keep your Harvest LIS up-to-date, please sign in to the customer-only area of **www.orchardsoft.com** to complete and submit the online Request for Upgrade form in a timely manner. Remember, upgrades are on a first-come, first-served basis, so don't delay! ●

Tech Tip: Customizing the Look of Copia

Copia makes it easy to customize image, color, and display settings so you can apply your organization's branding to the application. For example, you may define the logo that appears on the Sign In page, the logo that appears in upper left-hand corner of Copia, the logo that appears on reports and faxes, and the color scheme.

Before you begin customizing the appearance of Copia, there are some important considerations to keep in mind.

- **High-resolution images bloat file sizes and slow the system down.** When you upload an image into Copia, it saves the image to the database at whatever file size and resolution you have it in. When it displays the images, Copia scales the display size of the image to fit the page or report, but it does not modify the file size. This means that even if the image on the report looks small, it will still be a high-resolution image that requires a lot of space to store it and processing time to display it. In the case of PDF reports, for example, Copia adds the images to each report that will print, which will make the PDFs very large in file size and take longer to display.

- **Color choices drastically affect readability of buttons, tabs, etc.** One nice feature of Copia is that you can set the color scheme at the system default or practice levels (see below) to provide a more customized experience for your users. Many sites use their corporate colors. While this is helpful for your branding, be careful with white and with very dark colors, as they can make buttons, tabs, and other on-screen elements difficult to read and/or not be visually appealing.

  Also, keep in mind that each user's monitor will likely have different contrast settings, so it is best to test different color combinations on different monitors to find the best balance between the colors your facility wishes to use and those that work well on-screen.

- **Deleting images potentially affects multiple practices**. Copia allows you to delete image files when you are selecting images on the Appearance Setup, Sign In Page Setup, and Layout Templates pages. If you choose to delete an image, Copia permanently deletes it from the system. This means that any places in the program that referenced that image will no longer be able to display it. For example, if you have three practices, A, B, and C, that all use Image 1 as their Display Logo and you delete Image 1, then Copia will remove the Display Logos for all three practices (A, B, and C).

Sign In Page Settings

To modify the settings for Copia's Sign In page, click the Sign In Page Setup button on the System Defaults administration page. The Sign In Page Setup page appears, and you may set the following options:

- **Sign In Page Logo**
  The Sign In Page Logo section allows you to select an image to appear on the page users access to sign in to Copia. You may wish to use your organization's logo or perhaps a photo of your facility. If you cannot find the desired image in the drop-down list, click the Browse button to select or add an image to use from the Images page. Copia will use this image for all users who sign into your Copia system. The default splash logo is the Orchard Copia logo (590x315 pixels).

- **Sign In Page Background Color**
  Enter a hexadecimal RGB color code in the Sign In Page Background Color field to set the background color for the Sign In page. Many users enter the color code that corresponds to the background color of their Sign In page logo image, so the image appears to float on the page. You may also click the Default Color button to use Copia's default color for the background.

- **HTML**
  Copia allows you to add HTML to the top, right, left, or bottom of the Sign In page to further customize the look of the Sign In page. This is handy to provide links to information that your clients might find useful regarding billing or test costs, or you could even add links to promotional or training videos.

  As you enter your HTML code, Copia presents a preview to the right of the text field. You may also click the Insert Example button to add an example of a links section using the system colors, which you may then modify to fit your needs.

Appearance Settings

If desired, you may define custom logos for reports and for the program menu display (the upper-left corner of Copia), as well as determine the color scheme for the application. To modify these settings, click the Appearance button on either the System Defaults or Practices administration pages. Be aware that the way you access the Appearance Setup page determines whether Copia applies the settings at the system default or practice levels.

Once set, Copia uses the system default-level appearance settings for the color scheme and for all display and report images, unless you have established practice-level appearance settings via the Practices administration page, or if you are printing some types of reports (see below). Remember that Copia applies the practice settings, if available, for the practice associated with the user's signed-in location.

Customizing Copia

When establishing settings on the Appearance Setup page, you may set the following:

- **Display Logo**
The Display Logo section allows you to select an image to appear in the upper-left corner of the Copia application, above the navigation menu. Many users add their company logo here. The maximum recommended size is 160x54 pixels.

    IMPORTANT: If you use images wider than the recommendations, Copia puts space between the menu and the main portion of the page. This is typically not aesthetically appealing, and it reduces the amount of horizontal space for the main Copia page.

- **Report Logo**
The Report Logo section allows you to select an image to appear on reports throughout the program. When displaying report logos, Copia automatically scales the images to a maximum size of 350x45 pixels.

    As mentioned above, Copia uses the system default report logo, unless you have set a report logo for a practice. However, there are a few exceptions where the logo Copia displays on reports can vary between the system default image and the practice's image, based on the report you are printing:
    - **Print Job Manifest Reports:** The signed in user's location's practice-level setting.
    - **Lab Reports:** The requisition's practice-level setting.
    - **Error Report (when printing a lab report):** The system default-level setting.
    - **Fax Cover Sheets:** The system default-level setting.
    - **ABN:** The signed in user's location's practice-level setting.

- **Color Scheme**
The Color Scheme section allows you to set the colors Copia uses for on-screen elements in the application. Enter the desired hexadecimal RGB color codes for Color 1 and Color 2. Color 1 controls the title bar and the sign out/button bar background color. Color 2 controls the section header and navigation button background color. Select the "Use the default color scheme" option to use Copia's default colors.

    IMPORTANT: As you select colors, be sure to keep in mind the color considerations listed at the beginning of this article.

Displaying Patient Images

To enhance patient verification, Copia allows you to display patient images throughout the program. When importing patient photos, Copia accepts .JPG, .BMP, or .GIF images with a maximum file size of 350KB. Keep in mind that when Copia displays these patient images, it scales them to 120x160 pixels, so be sure to upload photos that size or with the same aspect ratio, so the images appear correctly.

Depending on your settings, Copia will display patient photos in the following locations:

- **Demographics:** If you have enabled the display of patient images on the System Defaults administration page, Copia displays patient images on the left side of the Demographics page.
- **Lab Result Reports:** If you have enabled the display of patient images on the System Defaults administration page, Copia displays patient images on PDF lab result reports.
- **Layout Templates:** When creating custom layout templates, Copia allows you to add the Patient Photo content type to display the patient photo, if available, on the selected page or report. ●

Where in the World is Orchy?

Orchard's unofficial mascot, Orchy, recently visited a city in North America overlooked by a famous hotel. If you can identify where Orchy was, send your answer to news@orchardsoft.com by May 15 to be eligible to win an Orchard prize package. Last newsletter, Dr. Julie Robinson of Takeda Global Research and Development Center, Inc. in Lake Forest, Illinois, sent in the winning entry that Orchy was visiting London, England. Sign in to the Orchard website to see where in the world Orchy has been lately! ●

Orchard's 2010 Spring Symposium is Coming to North Carolina

Orchard is pleased to announce that we are once again bringing a little of the Orchard to your own backyard. This spring, Orchard will pack its crates and head to Durham, North Carolina, for our spring 2010 symposium. On Thursday, June 10, 2010, at the Sheraton Imperial Hotel & Convention Center, Orchard will host this day-long event. Much like in years past, this symposium is designed for current users and prospective users alike, providing each with an opportunity to learn more in-depth information about Orchard Software and Orchard's laboratory information products. For more information about this event, please visit our website at **www.orchardsoft.com**.

As always, the event is of no cost to those who attend. A complimentary breakfast and lunch will be provided. For your convenience and to help minimize travel costs, we have reserved a block of rooms at a special rate of $110 plus tax. For more information and to register for the event, please visit our website at **www.orchardsoft.com/symposiums.asp**.

We would like to thank all those who have attended our symposiums in the past, and we look forward to seeing and meeting more of you in North Carolina, or seeing you in Indianapolis for our fall symposium!

What Does "Meaningful Use" Mean to Laboratories?

At the recent HIMSS show in Atlanta, Georgia, all the buzz throughout the exhibit hall was meaningful use. Regardless of the company or their products, they all presented some way of using their product or service to take advantage of stimulus money and meet the meaningful use criteria.

As part of the government's stimulus package, the American Recovery and Reinvestment Act (ARRA) of 2009, $17-18 billion was set aside to stimulate the adoption of electronic medical record (EMR) technologies by physicians and hospitals.

The proposed details of the meaningful use stages and financial incentives were published in January 2010 by the Department of Health and Human Services Centers for Medicare & Medicaid Services (CMS) and the Office of the National Coordinator for Health Information Technology (ONC). To obtain a copy of the document (CMS-2009-0117-0002) and read the 170-page proposal, go to **www.regulations.gov/search/Regs/home.html#documentDetail?R=0900006480a7c4a8** and download the PDF of the document at the bottom of the web page. You can also obtain a copy from the Orchard blog on our website.

To qualify for these incentives and avoid penalty, physicians and hospitals need to adopt certified EMR technology, achieve meaningful use, and then apply for the incentive payment. Certification of use and payment of the incentives will occur in stages over time.

As for what meaningful use means for Stage 1 implementation of an EMR, there is a proposed checklist of just fewer than 30 items for both physicians and hospitals. Of those items, three of them are related to laboratory order entry and result reporting. They are Computer Physician Order Entry (CPOE), Lab Test Results, and Reportable Laboratory Submission.

So in a nutshell, what might all this mean to the laboratory if these proposals are adopted?

Integration is the single biggest issue facing laboratories regarding the ARRA and the proposed criteria for Stage 1 of meaningful use. As best as we can tell, these integration issues will affect all labs, including POLs, clinics, hospitals, and reference laboratories. The ability to electronically integrate your laboratory to your facility's EMR or your laboratory clients' EMR system will be a major focus.

We encourage you to stay abreast of these proposals and determine how they will impact you. We here at Orchard will do our best to keep you aware of the proposals and final determinations for "Meaningful Use" as they are announced. Monitor our blog and our website for updates as we learn of them.

OrchardSoftware

Harvest the Power

701 Congressional Blvd., Suite 360
Carmel, Indiana 46032

Phone: (800) 856-1948
Fax: (317) 573-2633
Email: news@orchardsoft.com
Website: www.orchardsoft.com

Orchard's Spring Symposium to be held on June 10, 2010, in Durham, North Carolina

Introducing Orchard's Online Tutorials

Orchard knows that the better trained you are on your lab system, the more you can take advantage of each feature to help your laboratory be more productive and efficient. To maximize your understanding and the use of the many features and rules-based technology, Orchard offers various training options. For basic training and easy access, Orchard's online tutorials via the Internet touch on eight key areas of the software. For more in depth training, Orchard offers four different week-long training classes held multiple times throughout the year at our headquarters in Carmel, Indiana.

Orchard's online tutorials offer web-based training sessions to augment our hands-on training classes at our corporate offices. By the end of each session (averaging 45 minutes), users should gain sufficient familiarity to more effectively execute the functions presented. For more information on these sessions, how they work, their dates and times, or to sign up for one of the courses, go to **www. orchardsoft.com/support/training/training.asp**.

Online Tutorials Available:
- Introduction to Orchard Harvest LIS
- Using Order Patient Samples
- Using Review Results
- Using Release Stored Orders
- Using Find a Patient
- Using Quality Control
- Rule Basics in Harvest LIS
- Using Order Entry Rules
- Using Result Evaluation Rules
- Using CPT Code Rules
- Using Data Browsers

Orchard's Trade Show Calendar 2010

Date	Name	Location
4/21-4/24/10	COLA Symposium for Clinical Laboratories	Baltimore, MD
4/27-4/29/10	Executive War College*	New Orleans, LA
4/30-5/1/10	Centricity® Healthcare User Group Meeting (CHUG)	Tucson, AZ
5/4-5/6/10	CLMA ThinkLAB '10	Las Vegas, NV
5/5-5/6/10	CLSA (Clinical Lab Scientists of Alaska) 2010 Annual Conference	Fairbanks, AK
6/1-6/5/10	ACHA 2010 Annual Meeting	Philadelphia, PA
6/2-6/4/10	Washington G-2 Lab Outreach 2010 Conference	Baltimore, MD
6/10/10	Orchard Spring Symposium	Durham, NC

* Orchard is not exhibiting