

**Division of Cancer Prevention and Control** 

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#### HISTOLOGIC CLASSIFICATION OF TUMORS IN THE ERA OF MOLECULAR MEDICINE

By Dr. M. Nadji

The traditional classification of human neoplasms based on their morphology has served the medical community well. In fact, most diagnostic and therapeutic decisions are currently based on a combination of tumor topography and histology. On the other hand, the rapidly expanding fields of pharmacogenomics (drug development based on the understanding of human genome) are creating a paradigm shift in the way that tumors are diagnosed and treated. Furthermore, and as a corollary, target-directed therapy is now becoming an integral part of the management of patients with cancer.

Unlike conventional chemotherapy, which causes significant damage to normal cells, target-directed drugs are able to identify and attack specific molecules on cancer cells without causing significant harm to normal cells. This has necessitated the development of appropriate tests to identify various biomolecules in patient's

tumor as potential targets of tailor -made therapeutic approaches. Pharmacodiagnostics, or testing patients for customized treatment, is hence emerging as an important part of pharmacogenomics. This process includes studying the molecular fingerprint of patient's tumor at the level of DNA, RNA or proteins. When unique molecular markers are identified, they could be used to diagnose and classify tumors, or guide to targeted therapy.

It has been observed through the years that morphologically identical tumors may show radically different clinical outcomes. including their response to treatment. In reality these histologically similar tumors represent biologically different diseases. Recent molecular profiling of human neoplasms has demonstrated distinct molecular signatures of histologically identical tumors. A "one-size-fits-all" chemotherapy therefore, may be effective against one molecular subtype and not the other. For the same

(Continued on page 2)



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## Inside this issue: Histologic Classification 1–2 Process Improvement 3–4 Calendar of Events 5 Completeness Report 5 Announcements 6

reason, a number of targeted therapies require identification of targets specifically in each patient's tumor to ensure maximum effectiveness. Currently, immunohistochemistry and molecular techniques are the main methodologies for tissue identification of such therapy targets.

In the past quarter of a century the histopathology laboratories have used immunohistochemistry to study protein profiles of tumors, primarily to classify them by demonstrating cvtoplasmic or nuclear markers. More recently, the technique has been utilized to identify predictive markers and treatment targets in patients' tissues; such as estrogen receptor and HER2 in breast cancer. While immunohistochemical techniques are routinely performed on the same tissue that is used morphologic diagnosis.

more advanced molecular studies of tumors require special handling of patient biopsies to ensure preservation of biomolecules. This is because there is evidence that molecular classification of neoplasms is becoming as important, if not more important, than the conventional histomorphology The approach has of tumors. already been established in classification of lymphomas and leukemias where molecular signature of tumors is the basis for their classification, as well as for therapeutic decision and prognostication. More recently, molecular fingerprinting is being applied to classification of a number of solid tumors such as breast cancer.

Most diagnostic and therapeutic decisions are currently based on the evaluation of small tissue biopsies and pathology laboratories are expected to use the same

small volume of tissue for histology and ancillary tests. The pathology laboratories should therefore, devise and adhere to standardized tissue handling platforms that allow for morphological diagnosis while rendering the same archival tissues amenable to advance biomolecular testing. This will allow for a more clinically relevant classification of tumors.

The promise of personalized medicine requires a tailor-made approach to each patient's overall disease management. Tumor classification based on morphology alone will not fulfill that promise in the 21<sup>st</sup> century. Molecular signature of tumors along with identification of therapy targets with the attendant bioinformatics will represent the first steps towards a truly individualized medicine. Are we ready?

# **Congratulations!**

#### New Floridian CTRs - October 2008

Charisse L. Creech
Angie M. Droz
Stephanie Fox
Tammy A Green
Susan B. Huffstutlar
Iris G. Irizarry
Sabah M. Rafraf



### Process Improvement FCDS Annual Meeting



By Gary Levin, BA, CTR

This is the first of several articles to keep you updated on the progress of ideas suggested during our process improvement session at the FCDS Annual Meeting this year. For those that attended the session, thank you so much for your input and involvement which made this a very productive activity. With your assistance we have come up with many good ideas.

During this session, all attendees were broken into small groups and given various items to discuss. Initially each workgroup had to come up with a name to be identified by. The names selected were Edith's Angels, The Peanut Gallery, The Purple Pen Pals, The Prolific Group, The Dynamic Cancer Registry Professionals and The Innovators. Each group was assigned two questions to address.

With regards to process improvement, what three suggestions would you have to improve FCDS IDEA to make your processing more efficient (i.e. additional reports, enhance current modules, develop additional modules etc)?

With regards to education/training, what three topic areas do you feel will enhance your knowledge/productivity? What is the preferred method of training (i.e. webinar, face to face, on-demand web based, etc)?

After group discussion, each workgroup selected a speaker who presented their ideas to the attendees. As ideas were presented, both the attendees and FCDS staff addressed their merits and explored implementation concepts. From the session, 27 items were proposed for improvements in FCDS IDEA and 15 from education/training. This process worked very well and was extremely productive.

Since the annual meeting, FCDS has had three staff meetings to discuss these ideas. The first meeting was to review all the ideas and organize them in a spreadsheet for review. The second meeting analyzed each of the 42 concepts and assigned them into two categories. These categories were:

Keep – Items that will be incorporated into the FCDS processes

Tabled – Items that will not be worked on currently due to:

Already exists at FCDS or Nationally Budgetary/Staff Resource Constraints State Legislature Restrictions

In the third meeting we did a detailed analysis of all items in the Keep category. A lead person was assigned to each of the tasks and the methodology of implementation was discussed. Our next meeting is scheduled for the middle of December which will gather the lead person of each topic to discuss priorities, timeframe and resources needed to accomplish each task.

This process has also been added to the FCRA/FCDS Taskforce agenda and will be discussed on these calls as well.

Below is a list of items that we are actively working on. In future articles, we will keep you updated on progress being made. Thanks to all of you who participated in this exercise. I personally found it very useful and hope that all of you did as well.

We hope all of you have a wonderful holiday and a Healthy and Happy New Year.

(Continued on page 4)

#### **Process Improvement for FCDS IDEA** Report Force documentation electronically. Indicate pending errors on these cases as well State Specific Edit's Metafile Make sure Time Out Warning Window is always in front in IDEA Single Entry IDEA Single Entry - Save between pages Review Backspace button issue in IDEA Single Entry Make Enter do the same thing as Tab in IDEA Single Entry In AHCA Follow-Back Highlight both rows associated with the case so easier to read Add links from IDEA Menu to Training Modules Allow Entry of Name in AHCA Follow-Back even if Non-Reportable and allow printing of it Update Long Edit Message including instructions about documentation needed for force edits. Once Long Edit Messages developed, modify web edit journals to make the edit number link to the long message. Also add a Edit Message FAQ to web site **Process Improvement for Education** Head and Neck Training for all aspects including MPH 2007 Data Acquisition Manual for Dummies Edits that fail on upload should be used for training FCDS On-Demand Webinars for more advanced topics More hands on/interactive experience taken from annual conferences. Better balanced agenda. More training on Day 1 Mentoring Program Speed up On-Line DAM Access Webinar on Ethnicity Coding

#### CALENDAR OF EVENTS

#### NAACCR CANCER REGISTRY & SURVEILLANCE WEBINAR SERIES 2008—2009

**Time:** 9:00 am—12:00 pm

**Locations:** Boca Raton Community Hospital (Boca Raton, FL)

Moffitt Cancer Center (Tampa, FL)

Shands University of Florida (Gainesville, FL)

■ Contact: Meg Herna at 305-243-2625 or mherna@med.miami.edu

To Register: http://fcds.med.miami.edu

**Information:** http://www.naaccr.org/filesystem/pdf/2008-2009%20webinar%20schedule.pdf

**Dates:** 

January 8<sup>th</sup>, 2009 ♦ Measuring and Minimizing the Disclosure Risk of a Cancer Data Public Use File

• February 5<sup>th</sup>, 2009 ♦ Collecting Cancer Data: Pharynx

• March 5<sup>th</sup>, 2009 ♦ Cancer Staging In-depth

• April 2<sup>nd</sup>, 2009 \$\phi\$ Collecting Cancer Data: Central Nervous System

#### A.FRITZ & ASSOCIATES—CTR EXAM PREPARATION WORKSHOP

**Date:** January 22—24, 2009

**Location:** Reno, NV

■ **Website:** http://www.afritz.org

#### NCRA—CTR EXAM PREPARATION WORKSHOP

Date: February 7—8, 2009Location: Baltimore, MD

Contact: Lilly Grossman 703-299-6640 ext 314 or lgrossman@ncra-usa.org

#### PRINCIPLES OF ONCOLOGY FOR CANCER REGISTRY PROFESSIONALS

**Date:** April 20-24, 2009

**Location:** Reno, NV

**Website:** http://www.afritz.org

#### COMPLETENESS REPORT—2008 CASE REPORTING

Month	Complete	Expected
July 2008	1%	8%
August 2008	3%	17%
September 2008	12%	25%
October 2008	20%	33%
November 2008	27%	41%



To find joy in work is to discover the fountain of youth.

Pearl S. Buck



www.afritz.org

#### **Look What's New from April Fritz**

As the year draws to a close we wish you the best for the holiday season and the coming year. We are looking forward to 2009 too and want to bring you up to date on April's training program schedule and the new Volume II of the Cancer Registry CASEbook.

#### Volume II of the CASEbook is at the Printer

Volume II includes site-specific chapters on six of the more challenging primary cancers: head and neck, cervix, corpus, ovary, central nervous system, and malignant lymphomas. There are also supplementary chapters on diagnostic tests, abbreviations and acronyms, lymph node illustrations and other topics of use to both new and seasoned registrars.

#### **Principles of Oncology Training Program for 2009**

The course is best suited for registrars with less than three years experience. Although there are no prerequisites for attendance, April recommends that new registrars should work in the registry for 3 to 6 months before attending so that they have a basic knowledge of how a registry operates or, alternatively, have some experience in other medical areas (e.g., nursing, medical records, etc.)

#### CTR Examination Preparation Workshops for 2009

This course is a concentrated 3-day review of all the areas that may be tested on the CTR exam. The workshop covers the 2009 content of the exam, emphasizing areas that are not usually covered in state meetings or in other short CTR exam prep classes. If you are planning on taking the CTR Examination in 2009, you should consider attending this workshop. For more information on this workshop go to www.afritz.org/CTRws.htm. The first opportunity to take the CTR Exam in 2009 will be during the period March 7-21. April will hold her preparation workshop in Reno on January 22-24. Our second workshop will be August 13-15 prior to the September 12-26 examination period. Register now for either workshop.

#### Schedule April for Your Organization's 2009 Meetings Now.

2008 has been a very busy year for April. She has been traveling all across the country and around the world. In the last twelve months, she has taught classes or given lectures/presentations in Australia, Singapore, Nigeria, Japan, France, Canada and more than a dozen states. We expect her to be just as busy this year, so if your organization would like to have April give a presentation at a meeting in the new year, now is the time to contact her.

A.Fritz and Associates, LLC, 21361 Crestview Road, Reno, NV 89521 775-636-7243 or www.afritz.org

SYLVESTER MILLER GARGING CARGE CONTROL CONTROL

Fig. 5. Ployida Concer Data System

HEALTH



A joint project of the Sylvester Comprehensive Cancer Center

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The FCRA/FCDS Task Force is actively working on many issues that all registrars are facing. If you have any questions, issues or suggestions that you would like the task

force to review, please email them to taskforce@fcra.org.

The task force meets the first Thursday of every month. We will respond back to your inquiries as quickly as possible.



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