Session 4: Progress Towards a Master’s Degree Profession

Karen Atkison  
M.P.A.,CT(ASCP)  
CPRC Vice-Chair

Robert Goulart M.D  
ASC Commissioner to  
CAAHEP

David Wilbur M.D.  
Cytotechnology  
Program Review Committee
Conflict of Interest

- Karen Atkison – none
- Bob Goulart – none
- David Wilbur – none
Educational Objectives

At the conclusion of this session the participant will be able to:

• Reference publications and data supporting a Master’s level profession

• Identify the actions taken to revise the CAAHEP Standards and Guidelines

• Assess the role of the ASCP BOC

• Prepare for discussions with educational/institutional administrators on moving to a Master’s Program
Agenda

1. Catching Up (10 min)
2. Standards and Guidelines (10 min)
3. ASCP BOC (15 min)
4. Experience Share with Peers (50 min)
   • Applying new skills – The IU experience
   • Conversations towards Masters
     • Central Piedmont
     • Old Dominion
     • Nebraska
     • Loma Linda
5. Open Forum (30 min)
6. Wrap Up (5 min)
Catching up
Quick Review of the Past Year
Professional Growth Factors Workshop

- 2-hour interactive round table format
- Six focused topics relevant to the Master’s Level discussion
- Each topic assigned a facilitator from a current Master’s Level Program in Cytotechnology
Round table topics

- STUDENT RECRUITMENT
- FACULTY DEVELOPMENT
- CONSORTIUM PROGRAMS
- SCOPE OF PRACTICE AND STUDENT PLACEMENTS
- BUDGETS
- NEEDS ASSESSMENTS
Outcome

Practical & relevant conversation

Generated focused targets for future actions
Forward March: Master’s Degree Here We Come

Karen M. Atkison, MPA, CT(ASCP), Robert A. Goulart, MD and David C. Wilbur, MD
Cytotechnology Programs Review Committee (CPRC)
What next

- Communication amped up
<table>
<thead>
<tr>
<th>Reference</th>
<th>Volume</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASC Bulletin</td>
<td>LV</td>
<td>The Road to the Master’s Degree</td>
<td>Jennifer A. Brainard, MD, Chair, CPRC, Cleveland Clinic Cleveland, Oh</td>
</tr>
<tr>
<td>ASC Bulletin</td>
<td>LV</td>
<td>A Perfect Storm in Pathology Restructuring of Traditional Pathology Roles in Response to Evolving Workforce, Practice Patterns and Healthcare Reimbursement</td>
<td>Brenda J. Sweeney, SCT[ASCP]CLA, Editor, The ASC Bulletin Massachusetts General Hospital Boston, Massachusetts</td>
</tr>
<tr>
<td>ASC Bulletin</td>
<td>LV</td>
<td>New Profession/New Name/New Scope—What it is and What it is not</td>
<td>ASC/ASCP Workgroup</td>
</tr>
<tr>
<td>ASC Bulletin</td>
<td>LV</td>
<td>Forward March: Master’s Degree Here We Come</td>
<td>Karen M. Atkison, MPA, CT[ASCP], Robert A. Goulart, MD and David C. Wilbur, MD</td>
</tr>
<tr>
<td>Journal of the American Society of Cytopathology</td>
<td>(2018) 7, 250-260</td>
<td>Voices from the field: supporting the educational needs of cytotechnologists</td>
<td>Maria A. Friedlander, MPA, CT (ASCP) CMIAAC Lynnette S. Pineault, MBA, SCT (ASCP) Amber Donnelly, PhD, MPH, SCT (ASCP), Sandra Giroux, MS, SCT (ASCP) CFIAC, Kalyani Naik, MS, SCT (ASCP)</td>
</tr>
<tr>
<td>Journal of the American Society of Cytopathology</td>
<td>(2018) 7, 229-231</td>
<td>The evolution of cytotechnology: data, continuing professional development, and school infrastructure</td>
<td>Karen Atkison, MPA, CT(ASCP), Robert A. Goulart, MD, David C. Wilbur, MD, Cytotechnology Programs Review Committee (CPRC) members</td>
</tr>
<tr>
<td>ASC Bulletin</td>
<td>LV</td>
<td>Satellites in Orbit</td>
<td>Amber Donnelly, PhD, MPH, CT(ASCP) Professor and Director, Cytotechnology Education, University of Nebraska MC</td>
</tr>
</tbody>
</table>
Contributors

• CPRC
• ASCP/ASC Work Group
• Bulletin Editor
• Program Director
• Other
Take-a-Ways

• Data supporting changing practice patterns
• Timelines - What has been done and what must be done
• Guidance
Standards & Guidelines

Update
Sub-Committee

• Kalyani Naik
• Amber Donnelly
• Karen Atkison
• Bob Goulart
Standards and Guidelines for the Accreditation of Educational Programs in Cytotechnology


American Society of Cytopathology
American Society for Clinical Pathology
American Society for Cytotechnology
College of American Pathologists
Cytotechnology Programs Review Committee
Commission on Accreditation of Allied Health Education Programs
Outline

• Standards
  1. Sponsorship
  2. Goals
  3. Resources
    1. Personnel
  4. Evaluation
  5. Fair Practices

• Appendix A:
  • Application, Maintenance and Administration of Accreditation

• Appendix B
  • The Curriculum in Cytotechnology for Entry-level Competencies
Actions

- Standard template language
- Eliminate process vs outcomes language
- Numbers, time frames
- Guidelines that do not add to the Standard eliminated
- Impact in all areas of MS
- Entry Level Competencies
- Guideline Handbook
How

Sub-committee
• Teleconferences
• Email homework

CPRC
• Annual meeting
• Retreat (2019)
ELCs- bit of history

• Sponsors submitted list of ELCs thought to be required in programs (2013)
• CPRC evaluated all ELCs and prioritized based on current practice and ease of acceptance.
• Likelihood of acceptance Scale
ELC Likelihood Scale (2014)

**T1: ACCEPTABLE; PROCEED IMMEDIATELY TO DEVELOP**

**T2: PLAUSIBLE; HOLD/INVESTIGATE; RECONSIDER IN TIME**

**T3: UNLIKELY TO BE ACCEPTED; CONSIDER DROPPING**
<table>
<thead>
<tr>
<th>Competency</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Triage of specimens for technology (molecular, flow cytometry, tissue banking)</strong></td>
<td>1.2</td>
</tr>
<tr>
<td>HPV test <strong>performance and interpretation</strong></td>
<td>1.2</td>
</tr>
<tr>
<td>Special/immunohistochemical stains (Interpretation, <strong>ordering</strong> and troubleshooting)</td>
<td>1.2</td>
</tr>
<tr>
<td><strong>Digital pathology (e.g., digitizing slides, photography)</strong></td>
<td>1.2</td>
</tr>
<tr>
<td><strong>FISH Performance and interpretations – understanding of the principles</strong></td>
<td>1.2</td>
</tr>
<tr>
<td><strong>Screening for microorganisms</strong></td>
<td>1.2</td>
</tr>
<tr>
<td>Accessioning of anatomic pathology specimens*</td>
<td>2</td>
</tr>
<tr>
<td><strong>Interpretation of PCR and RT-PCR</strong></td>
<td>2</td>
</tr>
<tr>
<td><strong>Test development/Implementation validation</strong></td>
<td>2</td>
</tr>
<tr>
<td>Competency</td>
<td>Priority 3</td>
</tr>
<tr>
<td>------------</td>
<td>------------</td>
</tr>
<tr>
<td>Screening of histologic specimens (e.g.) prostate biopsies</td>
<td>3</td>
</tr>
<tr>
<td>Circulating tumor cell technology and interpretation</td>
<td>3</td>
</tr>
<tr>
<td>Circulating tumor cells</td>
<td></td>
</tr>
<tr>
<td>Microarray technology</td>
<td>3</td>
</tr>
<tr>
<td>Training in diagnostic imaging pathology to include both interpretative and matriculative skills</td>
<td>3</td>
</tr>
<tr>
<td>General AP Management and Management of Molecular Diagnostic Oncology</td>
<td>3</td>
</tr>
<tr>
<td>Gross training (small biopsies)**</td>
<td>3</td>
</tr>
<tr>
<td>FNA Performance Collection of superficial FNAs</td>
<td>3</td>
</tr>
<tr>
<td>Management of Companion Diagnostics (cytology, histology, molecular) Interpretation, ordering, and troubleshooting</td>
<td>3</td>
</tr>
<tr>
<td>Primary analysis and sign-out of negative or normal Non-Gyn specimens</td>
<td>3</td>
</tr>
<tr>
<td>Histotechnology training, with the depth to be determined by the CPRC</td>
<td>3</td>
</tr>
<tr>
<td>Data analysis and critical thinking</td>
<td>3</td>
</tr>
</tbody>
</table>
It takes time!
Clarification

A Masters’ Degree in Cytology means:

Certificate programs can no longer enroll MS degreed students and then provide a certificate of completion in cytology.

It means a Master’s degree in “name to be determined” will be awarded.
Experience Share

Conversations with Peers

Melissa Randolph
Kim Kaylor
Deb Krzyzaniak
Amber Donnelly
Matt Riding
Wrap Up
Catching up

Quick Review of Last Year
Strategies in Cytotechnology Education

ASCP Board of Certification and Transition to Master’s Degree in Cytotechnology

Robert A. Goulart, MD, MASCP
New England Pathology Associates, PC
Trinity Health of New England
ASC Commissioner to CAAHEP
Educational Objectives

• Quick overview of the ASCP Board of Certification (BOC)
  • *What it is – what it is not*
• Review recent discussions between the CPRC and BOC
• Describe the parallel process of development of a new BOC certification exam for the Master’s level CT graduate
• Discuss timeline for exam transition
• Review plan to develop a FAQ sheet
Collaborative Efforts

CAAH
HEP

COI

Sponsors

CPRC

BOC
Collaborative Efforts
• First certification agency (1928, 90 years!)
• Largest
  • Over 525,000 individuals certified to date
• Global certification (U.S. and International)
• Administratively *Independent*
  • Pat Tanabe, MPA, MLS(ASCP)\(^{CM}\), Executive Director
  • Board of Governors: *Many* lab professional organizations represented
• What it is not
  • Does *not* accredit or approve educational programs or labs
  • *Not* a membership organization
• Constantly monitors scope of practice for all certifying exams
  • Committee discussions, professional judgment, job task surveys, subject matter experts, etc.
  • *Much akin to the CPRC*

• Certification Exam Committees/Qualification Work Groups
  • Cytotechnology Examination Committee
  • Michael Berry, SCT(ASCP)\textsuperscript{CM}, MB\textsuperscript{CM}
Meetings with BOC Leadership
New Exam Needed

• Once a Master’s Degree is required for certification; need for a new exam which reflects scope of practice (SOP)

• Specialist in Cytotechnology (SCT) Exam
  • Poorly taken
  • Only 14 test takers in past year
  • Well-poised as “backbone” of a new certification exam
  • Appropriate SOP adjustment of test questions
    • Incorporation of material from current CT exam (hybrid exam)
    • *Plus, new subject matter/questions (new ELC’s)*

• BOC would mandate that this new (hybrid) exam is the certification exam for a Master’s level CT
Transition Period

- 3 -5 years
  - Reasonable/sufficient for education programs and BOC
  - BOC
    - Test question evaluation
    - Allows for at least 50 test takers/question
Transition Period

• “Window period” after graduation
  • Typically 5 years

• BOC maintains current CT exam for 5 years after the deadline for Master’s Degree transition

• Fair to last graduates of Bachelor’s CT programs

• May discontinue prior test after all graduates have taken the exam
  • Less than 5 year period – as may not be needed
Overall Transition Timeline

• CPRC makes recommendation to CAAHEP
• CAAHEP endorses, BOC is informed
• BOC works with CPRC to develop FAQ sheet
  • *We are listening for your questions today...!*
• BOC morphs SCT exam into a new Master’s Degree Certification Exam (3-5 year parallel process)
• New exam becomes required Master’s level exam
• Current CT exam continues for at least 8 years (all Bachelor’s degree graduates fully grandfathered)
CHANGE
Questions or Comments
Thank you
Crafting the Cytology Practitioner We Need Now. An Institutional Experience.

Melissa L. Randolph, BS. SCT(ASCP)
Department of Pathology and Laboratory Medicine
Indiana University Health
Conflict of Interest

• I have nothing to disclose.
The laboratory was being inundated with requests for block send outs.

The platforms were unknown.

The material requirements were vague. Most of them required 20% tumor.
  - But what does that really mean?
  - How does that translate to something pure like a cell block?

Despite being an academic center, the dialogue between oncology and pathology was poor.

“Well, what’s another request?”

Oncologists “Do what we tell you.”
Greater than 43% of the time reports would come back insufficient. Or worse, specimens were rejected after multiple attempts.

- Pull the same case.
- Pick a different block.
- “Hey as long as its tumor it should work right?”
- Lather, rinse repeat.
- Precious delayed time for the patients.

But no one stopped to figure out why.
The Patients Are Losing

• One day, picked up a failed report off of the copier and realized that a surgical ordered on sequencing had a fantastic corresponding cytology cell block from the same patient.

• Decided to dialogue with oncologist and ask if they wanted us to try with that specimen instead.

• It worked, found targetable mutation.

• The light bulb went on.

• The hard work started.
Proving My Case

• The success of that case and the conversation between the oncologist and I caught fire.

• Petitioned to research the failed cases and offer to analyze the “why”.

• At the same time we had started to feel pressure to support the Precision Genomics program launch and they were receiving poor/insufficient outcomes for their patients.

• After my analysis, presented the findings to the heads of the PG program and demonstrated the microscopic findings and other factors to them that could be incorporated into a much needed pre-analytic process.
Proving my Case

• Here’s what we weren’t considering.
  • Surgicals may not be the best specimen—even resections!
  • Cytology cell blocks may be more robust.
  • Lack of awareness when blocks had been previously sent out for second opinions or other commercial testing was a problem for oncologists and pathologists.
  • Lack of attention to tumor content, types of preservation, necrosis, purity, tumor deposition.
  • Knowing whether or not a platform used microdissection is also really important to triage.
  • Examining all case material was prudent to having the best specimen to test.
Proving my Case

• **Who has the time, analytic ability and morphologic expertise to handle this?**

• **Our Cytotechnologists!**
Proving my Case

• Worked for 2 years directly with the PG program as a consultant.

• Introduced them and the commercial companies we were working with to the idea of cell transfer, and tumor purity with cytology specimens.

• Setup trials with the companies to prove the worth of cytology specimens and showed that we could be successful 86% of the time by relying on Cytopathology specimens OVER surgical biopsies.
The Pitch

- This was solely my responsibility for a couple of years and it was becoming intense.
- Asked the PG program based on our growing success, would they fund the salary of a cytotechnologist to take over for me if we promised to give them the same attention we had been.
- They were excited. They wanted to grow and we wanted to expand these ideas.
- In the current licensure environment we were able to spare the pathologists time as well as provide value to our system and their investment in this high-stakes patients program!
- Now is the time to develop more cytotechnologists with these skills.
Implications for Masters Education

• Crafting the Skills.
  • Excellent communicator.
    • Effective communication with pathologists when needing to consult on difficult cases.
    • Respectful communication with oncologists.
    • Communication with support staff who are pulling case materials. (what when how)

• Expanding Morphologic understanding.
  • Assessing tumor content in all types of specimens.
  • More surgical pathology training and exposure.
  • Resections versus biopsies, versus cell blocks, versus direct smears.

• Willingness to exhaust all possibilities by using analytic abilities.
  • Gross examination of block material.
  • Young legs
How to impart the knowledge

• Conducted side by side sessions with 2 of my strongest techs.
• Educated how to analyze platform requirements and how to delve into problems associated with various biopsy targets.
• Showed them how to document morphology, how to present case to tumor boards.
• Helped them integrate into the program.
• Showed how to lessen the gap with clinicians and communication.
The Devil is in the Details

- Simultaneously developed a protocol to handle the procurement of these high stakes biopsies.
- Cytotech responsibility to follow the protocol and ensure these biopsies are triaged in an intentional way. Technical assessment is an important skill of a cytotechnologist. Gained radiology buy-in as communication improved.
- Continued to educate what directed cell blocks should look like at collection.

Figure I
Assessing Turbidity and Sedimentation
• After the learning curve, we have 2 cytotechnologists that sit shoulder to shoulder with a room of our brightest oncology minds.

• They are asked to use their expertise to find the most suitable material for the patients in question.

• They are asked to help with confirmatory testing for expression after cases are returned from sequencing.

• They are asked to interact with pathologists from other disciplines and other institutions and plead cases for patient material.

• **Our failure rate has improved from 43% to 4% as a result of Cytotechnologist involvement.**

• Our Precision Genomics Program is incredibly proud of how we are better able to serve our patients.
The Future

• Teaching more cytotechnologists in our group how they can use their skills to serve in this capacity for the rest of our system.

• Teaching my staff to reach out to nursing staff and coordinators to share when we think we have a better specimen in mind that they may not realize.

• Teaching the staff what standard of care options may still need to be fulfilled based on report audits.

• Sustaining and promoting an exciting future.

• Parlaying all of these skills into patient advocacy by being able to field requests for additional testing and becoming pathologist extenders.
## Expanded Cytotech Responsibilities

<table>
<thead>
<tr>
<th>TEST</th>
<th>TUMOR THRESHOLD</th>
<th>TUMOR GRADE</th>
<th>SPECIMEN TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decipher (GenomeDX): Post-Op</td>
<td>60% tumor (by surface area)</td>
<td>Gleason $\geq 7$</td>
<td>block</td>
</tr>
<tr>
<td>Decipher (GenomeDX): Biopsy</td>
<td>Greater than 5%</td>
<td>highest Gleason Score</td>
<td>block</td>
</tr>
<tr>
<td>OncotypeDx (Genomic Health): Colon</td>
<td>block with the most tumor</td>
<td>highest grade carcinoma (primary site-no mets)</td>
<td>block</td>
</tr>
<tr>
<td>OncotypeDx (Genomic Health): Breast</td>
<td>block with the most tumor</td>
<td>highest Nottingham Score (primary site-no mets)</td>
<td>block</td>
</tr>
<tr>
<td>OncotypeDx (Genomic Health): Prostate</td>
<td>block with the most tumor (Greater than 5%)</td>
<td>highest Gleason Score (primary site-no mets)</td>
<td>block</td>
</tr>
<tr>
<td>Foundation One CDX (FDA-approved)</td>
<td>30% (liver: double the amount of tumor to benign liver)</td>
<td></td>
<td>block</td>
</tr>
<tr>
<td>Foundation One</td>
<td>20-30% (liver: double the amount of tumor to benign liver/LN)</td>
<td>Cell transfer slides go to FOUNDATION ONE</td>
<td>block or direct smear</td>
</tr>
<tr>
<td>Caris</td>
<td>30%</td>
<td>highest grade carcinoma</td>
<td>block</td>
</tr>
<tr>
<td>Agenda</td>
<td>30%</td>
<td>primary tumor site- no mets</td>
<td>block</td>
</tr>
<tr>
<td>Interpace/ThyraMIR (Thyroid)</td>
<td>60-100 cells</td>
<td>FLUS/Non-diagnostic</td>
<td>any type of preparation</td>
</tr>
<tr>
<td>Companion Diagnostics (PDL-1)</td>
<td>50-100 cells</td>
<td></td>
<td>block</td>
</tr>
</tbody>
</table>

*New indications 5/17: Melanoma/ NSCLC (22C3 clone)/HNSCC/Classical Hodgkin Lymphoma/ Urothelial Carcinoma/

block (cell transfer WF smear: PDL-1 (make 2 slides on cell transfer--include negative tissue if possible) and Her 2*
## Expanded Cytotech Responsibilities

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Requirements</th>
<th>Specific Indications</th>
<th>Additional Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MSI-High Tumors (Keytruda Requests)</strong></td>
<td>Should be a PCR based test! Also need NEGATIVE CONTROL TISSUE from same patient. If no negative control tissue available, flip to dMMR, next block down</td>
<td>New indications 5/17: Gastrointestinal (Biliary/Colorectal/GE junction/esophageal/gastric/Small intestinal) Bladder, Renal, Prostate, Endometrial, Breast, Primary Peritoneal Carcinoma/Small Cell/Thyroid</td>
<td>block SCROLLS of both tumor tissue and negative tissue such as LN, benign polyps, etc. Need at least 20% tumor proportion, if not flip to slides.</td>
</tr>
<tr>
<td><strong>dMMR Mis-matched repair deficiency</strong></td>
<td>50-100 cells per IHC/ There are 4 MLH-1/MSH-2/PMS-2/MSH-6</td>
<td>Performed for colorectal/endometrial cancers including metastasis.</td>
<td>SCROLLS. Need at least 20% tumor proportion, if not flip to slides.</td>
</tr>
<tr>
<td><strong>Companion Diagnostics (Her2)/ALK IHC</strong></td>
<td>50-100 cells per IHC (ER/PR/Her2)/ FISH 50-100 per cell block section</td>
<td>Any breast malignancy at any point in treatment (Check for concurrent surgical)</td>
<td>block sections/ Cell transfer WF. Can NOT perform Cell Transfer for FISH testing</td>
</tr>
<tr>
<td><strong>Molecular Any (BRAF, KRAS, EGFR, NRAS)</strong></td>
<td>at least 10 cells in cell block section. If performing cell transfer at least 100 tumor cells</td>
<td>Melanoma’s Standard of Care BRAF upfront/ NSCLC Lung panel upfront</td>
<td>block or cell transfer (AD smear preferred)</td>
</tr>
<tr>
<td><strong>Molecular FISH (Ros1)</strong></td>
<td>100 cells in cell block/tissue section</td>
<td>Both tests performed off of same sections</td>
<td>block sections. Can NOT perform Cell Transfer for FISH testing</td>
</tr>
</tbody>
</table>
Current Curriculum: Bachelor of Science Degree: Cytology

**Third Year – Fall: PREREQUISITES**

- CHP 450 - Public/Comm Hth 3
- MDTS 400 Molecular Diag. 3
- MDTS 401 Molecular Lecture 3
- CYTO 404 Clinical Histology 3
- CYTO 404 - General Pathology 3

**Third Year – Spring (Technical Year)**

- CYTO 403 - GYN Cyto Lab 3
- CYTO 428W - Cytoprep 3
- CYTO 405 -- Normal GYN Cyto 3
- CYTO 415 --- Abn GYN Cyto 4
- CYTO 442 --- Gastrointestinal 2
- CYTO 458 Advanced Screening Lab 3

**Fourth Year – Summer**

- CYTO 424 – Respiratory 3
- CYTO 444 – Genitourinary 2
- CYTO 445 – Breast 2
- CYTO 446 – Body Fluids 3
- CYTO 448 – Non-epithelial 2
- CYTO 468 Clinical Internship I 4

**Fourth Year – Fall**

- CYTO 455 – FNA Cytology 6
- CYTO 478 – Cyto Internship III 8
- CYTO 497 – Seminar 1
MASTER’S DEGREE IN MEDICAL LABORATORY SCIENCES: CYTOTECHNOLOGY: 2021

• Third Year – Fall
  • MDTS 505 Laboratory Management 3
  • MDTS 500 Molecular Diag.(Lecture/Lab) 3
  • MDTS 502 Research Methodology 3
  • CYTO 504 Clinical Histology 3
    CYTO 507 Pathology 3
  • Third Year – Spring (Technical Year)
    CYTO 503 – GYN Cyto Lab 3
  • CYTO 528 – Cytopreparatory Methods & Special Techniques
    CYTO 505 -- Normal GYN 3
  • CYTO 515 --- Abnormal GYN 4
  • CYTO 542 --- Gastrointestinal 2
  • CYTO 558 Advanced Screening Lab 3

• Fourth Year – Summer
  • CYTO 524 – Respiratory 4
  • CYTO 544 – Genitourinary 2
  • CYTO 545 – Breast 2
  • CYTO 546 – Body Fluids 3
  • CYTO 548 – Non-epithelial 2
  • CYTO 568 Clinical Internship I 4
  • CYTO 596 Research Project I 1

• Fourth Year – Fall
  • CYTO 555 – FNA Cytology 6
  • CYTO 578 – Cyto Internship III 8
  • CYTO 597 – Research Project II 3
MAJOR CHANGES IN COURSE WORK: WHAT WILL IT MEAN?

• MORE COURSEWORK IN RESEARCH METHODOLOGY: PREPARATION FOR “RESEARCH” PAPER
• MORE CONCENTRATION ON “SPECIAL TECHNIQUES”: CYTOPREPARATORY COURSE (FISH, FLOW, IMMUNOCYTOCHEMISTRY: INTERPRETATION OF TESTS)
• ADDITION OF RESEARCH PROJECT: WE WILL NEED TO ASSIGN MENTORS TO WORK ON PROJECT PAPERS WITH STUDENTS
• ADVANCED COURSE WORK; EXTRA READINGS
• INTERNSHIPS WILL REMAIN THE SAME: ADDITION OF EXIT EXAMS UPON FINISHING CLINICAL ROTATIONS
CHALLENGES & CONCERNS IN CHANGING FROM BACHELORS TO MASTERS

• 1. QUALIFIED STAFF FOR GRADUATE EDUCATION
• 2. APPROVAL OF SCHEV (STATE COUNCIL ON HIGHER EDUCATION IN VIRGINIA)
• 3. HIGHER TUITION
• 4. RECRUITMENT OF QUALIFIED CANDIDATES
• 5. LOWER ENROLLEMENT AND A DROP IN GRADUATES
• 6. SATISFYING THE VACANCIES FOR CYTOTECHNOLOGIST PARTICULARLY FOR PRIVATE LABS
POSSIBLE ADVANTAGES TO ALL MASTER’S LEVEL EDUCATION

• HIGHER SALARIES WITH MORE RESPONSIBILITIES?
• MORE QUALIFIED APPLICANTS APPLYING THAN THOSE APPLYING FOR BACHELOR’S DEGREE
• ADVANCEMENT IN THE FIELD OF CYTOTECHNOLOGY
“The world as we have created it is a process of our thinking. It cannot be changed without changing our thinking.”

— Albert Einstein

Thank You, Deborah A. Krzyzaniak, MS, SCT(ASCP), Program Director & Educational Coordinator
Central Piedmont Community College
Cytotechnology Program

Evaluation of Masters Degree

Kim Kaylor, SCT(ASCP)CM & Danielle Hensley, CT(ASCP)CM
Central Piedmont Community College
Charlotte, North Carolina
• Initial accreditation 1993
• Certificate program
  • Only program at a community college
• Bachelors degree required to apply to the program
• 12 month program (August-July)
• 57 Credits – all CYT courses
• Accept 6 students per year
• 2 FT Faculty and 2 Medical Directors
• 11 Clinical sites
## Curriculum

### FALL SEMESTER

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Class</th>
<th>Lab</th>
<th>Clinical</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>CYT 210</td>
<td>Introduction to Clinical Cytology</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>CYT 212</td>
<td>Introduction to Cytologic Techniques</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>CYT 214</td>
<td>Gynecologic Cytology</td>
<td>8</td>
<td>12</td>
<td>0</td>
<td>14</td>
</tr>
<tr>
<td>CYT 216</td>
<td>Clinical and Diagnostic Interpretation I</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>CYT 222</td>
<td>Cytopreparation Techniques</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

28 Total

### SPRING SEMESTER

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Class</th>
<th>Lab</th>
<th>Clinical</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>CYT 220</td>
<td>Non-Gynecologic Cytology</td>
<td>8</td>
<td>8</td>
<td>0</td>
<td>12</td>
</tr>
<tr>
<td>CYT 224</td>
<td>Gynecologic Cytology Clinical Practicum I</td>
<td>0</td>
<td>0</td>
<td>12</td>
<td>4</td>
</tr>
<tr>
<td>CYT 226</td>
<td>Clinical and Diagnostic Interpretation II</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>CYT 236</td>
<td>Cytology Literature Review</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>CYT 238</td>
<td>Ancillary Studies in Cytopathology</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

23 Total

### SUMMER SEMESTER

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Class</th>
<th>Lab</th>
<th>Clinical</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>CYT 230</td>
<td>Non-Gynecologic Cytology Clinical Practicum</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>CYT 232</td>
<td>Clinical Cytology Practicum</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>CYT 234</td>
<td>Gynecologic Cytology Clinical Practicum II</td>
<td>0</td>
<td>0</td>
<td>9</td>
<td>3</td>
</tr>
</tbody>
</table>

6 Total

Clinical Hours: 448
Factors for CPCC to Consider for Moving to a Masters Degree Program

- Impact on the College
- Impact on our Students
- Input of Alumni, Advisory Board members and Employers – will survey
Impact on the College

• Per current NC Community College System guidelines, community colleges are not allowed to award bachelor’s or master’s degrees.

• For CPCC to offer a masters degree:
  • NC Community College System would have to approve.
  • CPCC’s accrediting body, Southern Association of Colleges and Schools Commission on Colleges (SACSCOC), would have to approve CPCC moving from our current status as a Level 1 institution to a Level 3 institution.
    • This is a lengthy process.
Impact on the College

• Since our program is at a community college, what are our options if the college cannot offer a Masters degree?
  • Partner with a local university?
  • Partner with a current cytotechnology masters program?

• Concerns with partnering with a university/current masters program:
  • Will CPCC support this partnership?
  • Will we find a local university/distance education option that will support this partnership?
  • Will the credits students take at CPCC transfer to the partnering university?
  • Would current CPCC faculty have to obtain a masters degree to continue teaching in the program?
  • Would students still be interested in the program if the time and/or costs increase?
Impact on Students

- Our students currently take 57 credits of cytology courses in a 12 month period
  - What would the additional cost and time commitment be for students?
  - If we had to partner with a university, students need to take a minimum number of credits in order be awarded the masters degree. What would that number be?
  - Would additional credits be CYT courses?
Question: With our outcomes on the Board of Certification exam, why is there a need to go to a Masters level? CPCC students are performing higher than the national mean.
National Exam Data Trends

Questions/Concerns: With the decline in # of examinees over the past 4 years, with fewer students entering the field, will we be able to fill our seats in the future?
Tuition vs. CYT Credit Hours

Cost per CYT credit hour. Graphic shows the best option for students is the Community College option which provides the highest number of credits at the lowest cost to students.
Next Steps for CPCC

• Gather more data from our alumni, advisory board, and employers by sending out a survey.

• Questions generated from members of our Cytotechnology Advisory Committee:
  • Is it **mandatory** for all cytotechnology programs to become Masters?
    • If so, what generated this move?
  • Is there a standard curriculum for the Masters programs?
  • What is the added value of having a Masters degree?
  • Do pathologists support this move?
  • Where does CAP &/or the ASCP stand on this issue?
  • Is there assurance that starting salaries will increase?
  • What is the return on investment for companies hiring CTs with Masters?
• Ultimately, CPCC would need to decide as an institution if it is willing to make this change
Medical Service Learning Study Abroad in Ecuador

Please Support our Cytotechnology Students!

Please consider making a tax deductible donation to support our faculty and staff. Click the link or scan the QR code below, to make a donation. Any amount will help us reach our goal!

https://secure.cpccfoundation.org/projectfunder/medical-service-learning
UNMC Cytotechnology Program Transition to Master’s “The Struggle is Real”

Amber Donnelly, PhD, MPH, SCT(ASCP)
Professor & Director, Cytotechnology Education
University of Nebraska Medical Center
Conflicts of Interest

- No Conflict of Interest
UNMC’s Struggle
Gain approval for new program at college level (2015)

Write proposal for Board Of Regents approval of new program (12 pages)
- Description
- Centrality to role & mission or program, college & University
- Evidence of Demand
- Adequacy of resources
- Projected 5 year budget
- Consistency with comprehensive statewide plan for postsecondary education
- Curriculum plan (course titles and semester hours)
- (Letters of support)
• Dean, CAHP, UNMC
• Vice-Chancellor of Academic Affairs, Dean of Graduate Studies, UNMC
• Chancellor, UNMC
• Provost, Univ of Nebraska
• President, Univ of Nebraska
• Board of Regents
Stuck!
Hang in there!
Next steps

• Designing courses
  • CAHP course requirements
    • Contact/semester hours
    • Apply for new course number/official name

• Approval from Curriculum Committee, CAHP
  • Fall courses – April 15, Approval by June 15
  • Spring courses – September 1, Approval by October 15
  • Summer Courses – February 15, Approval by March 15
<table>
<thead>
<tr>
<th>Courses</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fall Semester Year 1</strong></td>
<td></td>
</tr>
<tr>
<td>CYTO 701/801 Intro to Cytology and Cytopreparation</td>
<td>1</td>
</tr>
<tr>
<td>CYTO 702/802 – Cytology of the female genital tract</td>
<td>4</td>
</tr>
<tr>
<td>PAMM 690 – Biology of Disease</td>
<td>5</td>
</tr>
<tr>
<td>SAHP 723 – Principles of critical inquiry</td>
<td>2</td>
</tr>
<tr>
<td>CYTO 703/803 – Cytology of the Respiratory Tract</td>
<td>2</td>
</tr>
<tr>
<td>CYTO 704/804 – Cytology of the Urinary Tract</td>
<td>1</td>
</tr>
<tr>
<td>CYTO 705/805 – Cytology of body fluids &amp; CSF</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total Credits:</strong></td>
<td><strong>16</strong></td>
</tr>
<tr>
<td><strong>Spring Semester Year 1</strong></td>
<td></td>
</tr>
<tr>
<td>CYTO 710/810 – Cyto of GI Tract</td>
<td>1</td>
</tr>
<tr>
<td>CYTO 711/811 – FNA Cytology</td>
<td>3</td>
</tr>
<tr>
<td>CYTO 712/812 - Immunocytochemistry</td>
<td>1</td>
</tr>
<tr>
<td>CYTO 713/813 – Cytology laboratory management</td>
<td>1</td>
</tr>
<tr>
<td>CYTO 714/814 – Cytology Clinical Practicum</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total Credits:</strong></td>
<td><strong>12</strong></td>
</tr>
<tr>
<td><strong>Summer Semester Year 1</strong></td>
<td></td>
</tr>
<tr>
<td>CYTO 714/814 – Cytology Clinical Practicum</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total Credits:</strong></td>
<td><strong>4</strong></td>
</tr>
<tr>
<td><strong>Fall Semester Year 2</strong></td>
<td></td>
</tr>
<tr>
<td>CYTO TBD – Advanced Practices in Non-GYN Cytology (on-line)</td>
<td>1</td>
</tr>
<tr>
<td>CYTO TBD – Advanced Practices in FNA Cytology (on-line)</td>
<td>2</td>
</tr>
<tr>
<td>CYTO TBD – Application of Companion technologies (On-line)</td>
<td>3</td>
</tr>
<tr>
<td>CYTO TBD – Digital Pathology (on-line)</td>
<td>1</td>
</tr>
<tr>
<td>CYTO TBD – Advanced laboratory operations (On-line)</td>
<td>1</td>
</tr>
<tr>
<td>CYTO TBD – Research project/ capstone (on-line)</td>
<td>2</td>
</tr>
<tr>
<td>CYTO TBD – Advanced Histology for cytotechnologists (On-Line)</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total Credits:</strong></td>
<td><strong>12</strong></td>
</tr>
<tr>
<td><strong>MCP Degree Program Total Credits</strong></td>
<td><strong>44</strong></td>
</tr>
</tbody>
</table>
Next steps – Student & Academic Services

• Change in Tuition from Post-Bacc Certificate to Master’s?
  • Tuition per semester (Approval by CAHP, UNMC, BOR)
  • Fees per semester (Approval by CAHP, UNMC, BOR)
  • Financial Aid & Scholarships

• Change the student enrollment system (WebAdmit) & CAHP website/brochures/links/outcomes
Goal
Questions.....

• Degree Completion (Previous grads & Until Mandatory)
  • Graduates of UNMC’s program
  • Grads of other Post-Bacc programs
  • Bachelor’s degree grads (extra courses?)
  • Sit for ASCP BOC after 32 credit hours
  • Flexible schedule for additional 12 credits?
  • Research/capstone

• Full Master’s Degree (Mandatory entry level)
  • Sit for ASCP BOC upon completion of masters
  • On-line/not on-line (↑students = ↑space & resources)
    • Satellite Sites - Participation in 2nd phase
    • Daily screening/interpretation practice
      • Glass slides / virtual microscopy
  • 22 months (Aug – May) or flexible
  • Research/capstone
• Textbook(s) for advanced practice
  • Surgical pathology
  • Management
  • Pathology Assistant texts

• Content experts (Who?)
  • Who will create content
  • What is their incentive to help

• Time (How do WE find it?)
  • Time to develop content and e-modules (months for one)
    • Gathering content, writing script, video recording, voice over, editing, interactive questions, closed-captioning, build into software
<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Designing curriculum</td>
<td>NOW</td>
</tr>
<tr>
<td>Curriculum committee approval</td>
<td>8/2020</td>
</tr>
<tr>
<td>External review</td>
<td>10/2020</td>
</tr>
<tr>
<td>• 2 members of CPRC</td>
<td></td>
</tr>
<tr>
<td>• 2 non-members</td>
<td></td>
</tr>
<tr>
<td>BOR approval (Same as before)</td>
<td>1/2021</td>
</tr>
<tr>
<td>• Dean, CAHP, UNMC</td>
<td></td>
</tr>
<tr>
<td>• Vice-Chancellor of Academic Affairs &amp;</td>
<td></td>
</tr>
<tr>
<td>Dean of Graduate Studies, UNMC</td>
<td></td>
</tr>
<tr>
<td>• Chancellor, UNMC</td>
<td></td>
</tr>
<tr>
<td>• Provost, Univ of Nebraska</td>
<td></td>
</tr>
<tr>
<td>• President, Univ of Nebraska</td>
<td></td>
</tr>
<tr>
<td>• Board of Regents, Univ of Nebraska</td>
<td></td>
</tr>
<tr>
<td>Begin Master’s program</td>
<td>8/2021</td>
</tr>
</tbody>
</table>