

# *Health Open Educational Resources*

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# *Agenda*

- OER at Michigan
- Health OER Origins
- Motivation for Health OER
- Health OER Examples



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# ***OER at Michigan***



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# *OER at Michigan*

- Part of open.michigan effort
  - dScribe, open learning, open access, ...
- Beyond Health OER, grass roots efforts across rest of campus



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# Open.umich.edu web site

help | search:  go

# open.michigan

Connecting the global learning community

- home
- about
- community
- education
- projects
- contact

**Open.Michigan:** a University of Michigan initiative to create and share knowledge, resources, and research with the global learning community.

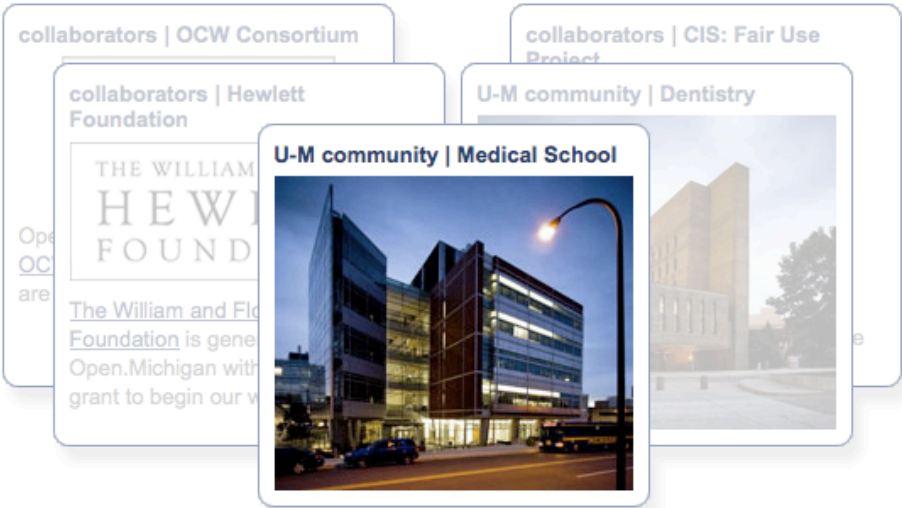
collaborators | OCW Consortium

collaborators | CIS: Fair Use Project

collaborators | Hewlett Foundation

U-M community | Dentistry


U-M community | Medical School



THE WILLIAM AND FLORENCE HEWLETT FOUNDATION

The William and Florence Hewlett Foundation is generous to Open.Michigan with a grant to begin our work.


**David Stern, M.D., Ph.D. Talks About Global REACH**




OUR GLOBAL CHALLENGE

University of Michigan Medical School

OPEN ACCESS WEEK  
23 -27 March 2009



MLibrary



**dScribe**  
Opportunities for students & faculty

community education projects

**featured**

recently added

go to community »


**open.blog**

**Recent Posts**

Mar 2:  
Creative Commons CTO to Present on "Why CC Matters"

Feb 10:  
CloudSocial: Increasing Accessibility to Open Content

Feb 6:  
Standing up to Big Content



The background features a large, faint, light blue seal of The University of Michigan. The seal is circular and contains the text "THE UNIVERSITY OF MICHIGAN" around the top and "1817" at the bottom. In the center is a shield with a lamp of knowledge and the motto "SCIENTIA VERITAS".

# *Health OER Origins*



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# 2007

- Fall 2007, the Medical School commits to publishing all of its pre-clinical materials as OER.
  - Part of vision to be a global medical school and innovator in medical education
- Medical School and the School of Information collaborate on developing dScribe publishing process
- All U-M health science deans pledge their support
- Health OER planning grant submitted to Hewlett Foundation



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# 2008

- U-M President Mary Sue Coleman leads delegation to Ghana and South Africa (February and March)
- Hewlett Foundation awards planning grant (March)
- Health OER workshop in Ghana
- dScribe development and materials piloting
- Grant writing trip in Africa (July and August)
- Institute of Medicine meeting (September)



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# *Existing Med School Curriculum*

- All lecture materials (slides, streaming video) available online through CTools
- Some online learning materials have replaced older teaching strategies (anatomy, histology)
- Now deploying highly interactive and adaptive learning experiences (Skill Builder, Advanced Medical Therapeutics)



# *2008 Planning Grant*

- U-M is awarded a Hewlett Foundation planning grant, with supplemental funding from Soros Open Society Institute and FAIMER (Foundation for Advancement of International Medical Education and Research)
  - Deliverables include community building in Africa and U.S., pilot development of U-M course materials, and validation of dScribe approach



# *May 2008 Africa Workshop*

- U-M held a Health OER workshop in Ghana with participants from multiple countries
  - Reviewed opportunities, benefits, and challenges for OER
  - Consensus to move forward with community building proposal (“walk before we run”)



# *2009 Health OER Design Phase*

- U-M and OER Africa working with University of Ghana, Kwame Nkrumah University of Science and Technology, University of Cape Town, and University of the Western Cape.
  - Hold policy/sensitization workshops
  - Identify curricular needs
  - Emphasis on co-creation of OER that work in respective local contexts
  - Assess capacity to collaborate and design framework for assessing OER use



# *Major Deliverable*

A long term logic model and sustainable, scalable, collaborative content development programs for comprehensive, open health professions curricula.



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# *Gates Human Resources for Health Grant*

- Two year planning grant awarded in November 2008
- Partnership of U-M, UG, KNUST, Ghana Ministry of Health, Ghana Health Service
- OER processes embedded in education goals



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# *Clinton Global Initiative University*



Kathleen Ludewig, Matt Simpson, Nejay Ananaba



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# *How Health OER is Different*

- Health science materials
- Entire curriculum – not stand-alone courses
- Goal of scale through dScribes
- “Pull” from countries/institutions in need
  - Adopting, adapting, co-creating materials
- Research agenda to measure outcomes
- Applying “Fair Use”



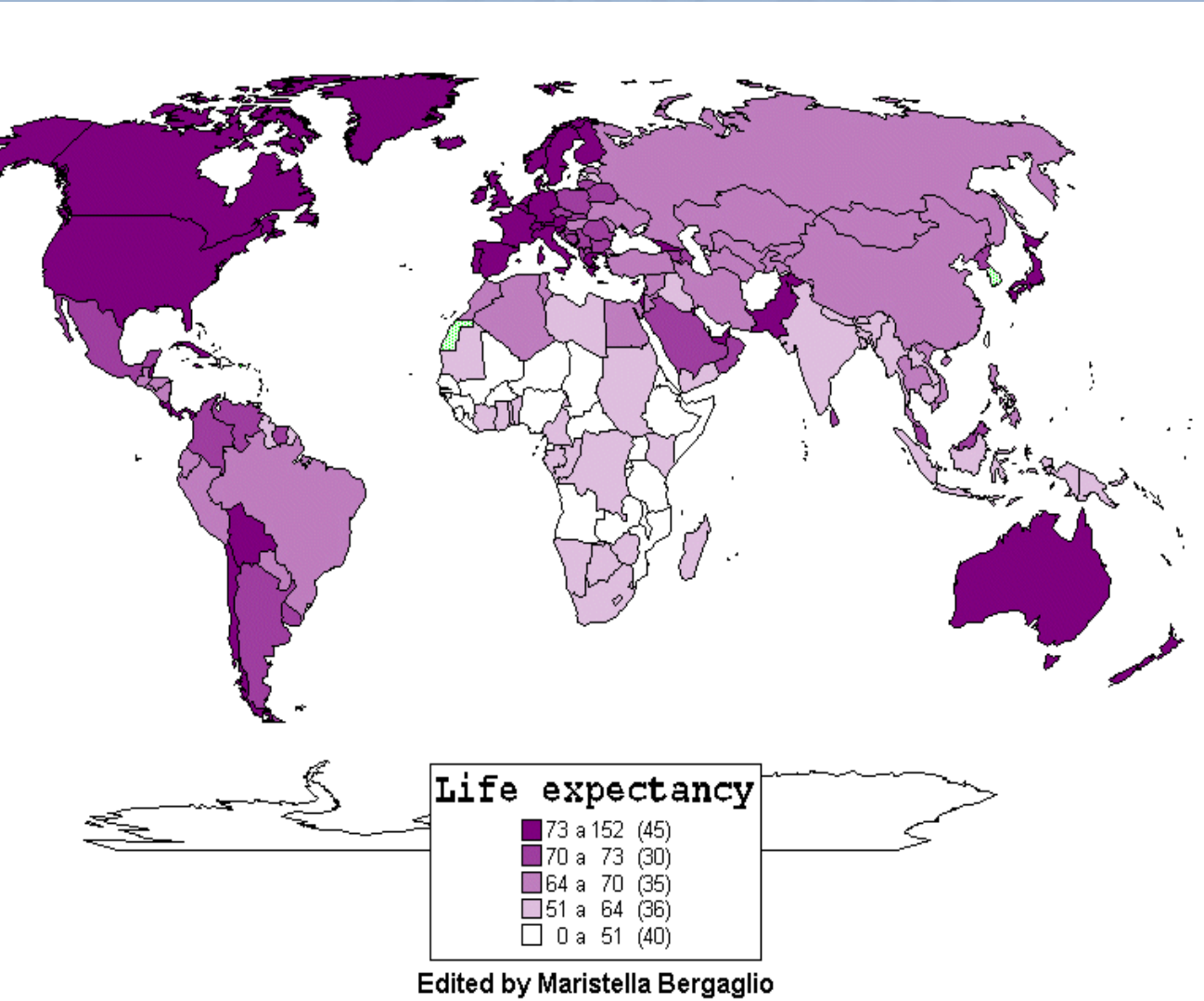


# *Motivation for Health OER*



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# *Life Expectancy*



**Life expectancy  
in years:**

- **North America: 76**
- **Latin America: 69**
- **Africa: 51**



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# *Global Health Crisis*

- Large differences in quality of and access to care *between* developing and developed countries
- Large differences in quality and access to care *within* countries
- Global epidemics
- The successful treatment of acute disease has left an epidemic of chronic disease



# *Millennium Development Goals*

- Reduce Child Mortality
  - Drop the under-five rate by two thirds
- Improve Maternal Health
  - Reduce maternal mortality by three quarters
- Combat HIV/AIDS, malaria, and other diseases
  - Halt and begin to reverse the spread of HIV/AIDS and the incidence of the others



# *Human Resources for Health*

- Any long-term solution to the global health crisis requires investment in human resources.
- Only well-trained health providers can ensure:
  - Achievement of the UN' s Millennium Development Goals,
  - Implementation of global vaccination and medication distribution, and
  - Preparation for the next epidemic





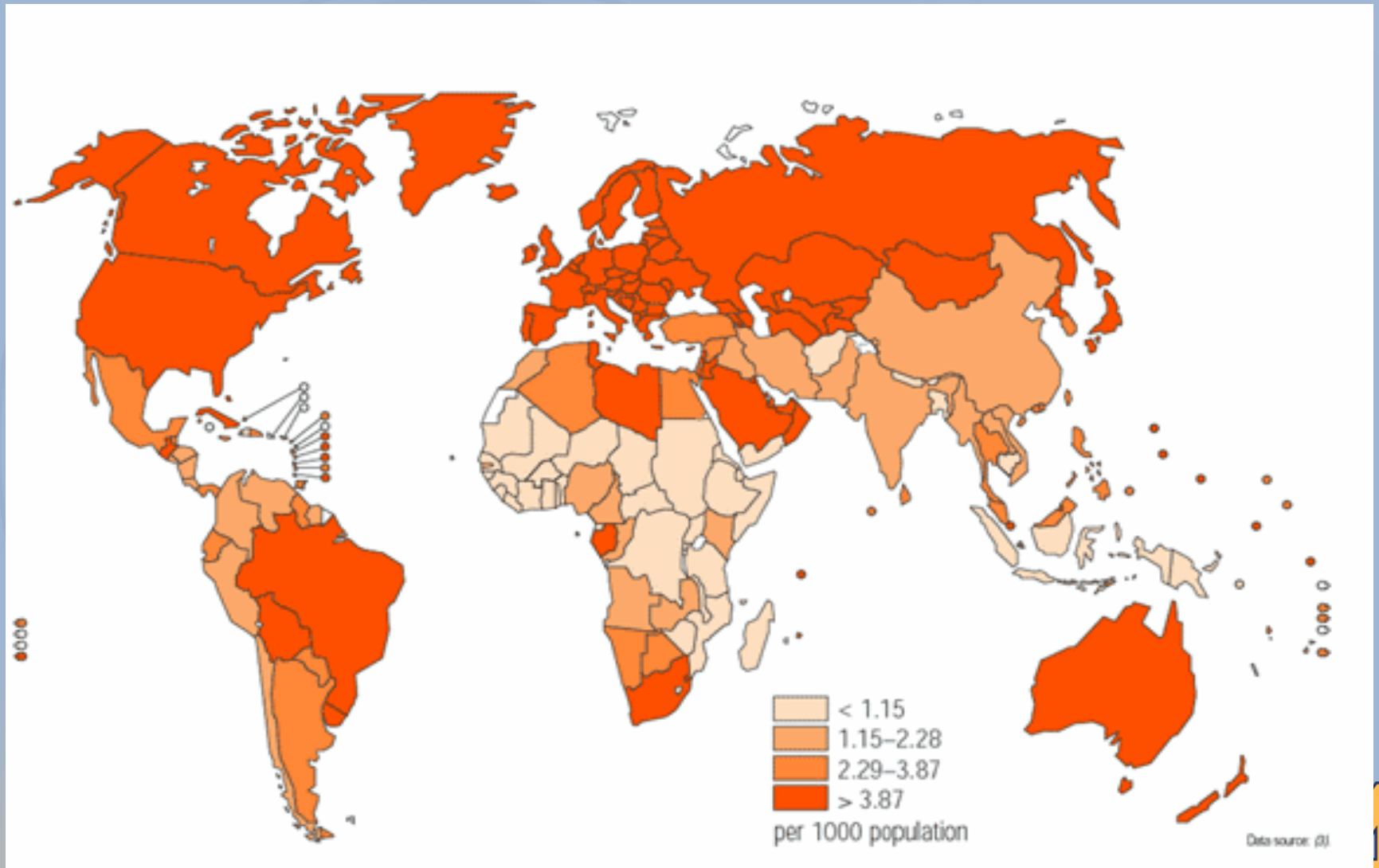
# *Global Health Workers*

- 60 million healthcare workers
  - 9 million are MDs (1M in the US, 3M in China)
- 75% are in government-run organizations
- Ghana case study
  - One half of Ghanaian med school grads practice outside the country
    - U-M OBGYN specialist training as an exception to brain drain
  - Ghana has goal of tripling the number of healthcare workers
  - Already at 15:1 student:teacher ratio on wards





# *Distribution of Health Workers*



## Distribution of health workers by level of health expenditure and burden of disease





# *Health OER Examples*



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# Welcome to Automated Blood Counts in Clinical Practice!

A problem-based tutorial on the interpretation of automated cytometry data in diagnosis of common hematologic conditions.

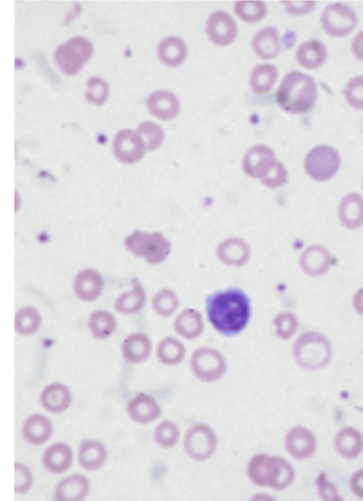


presented by

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**School of Medicine Sciences,**  
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**Kuamsi, Ghana**

with the collaboration of:

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**Department of Internal Medicine,**  
**University of Michigan Medical School**  
**Ann Arbor, Michigan, USA**



[Click here to begin](#)



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## Interpretation of Hematologic Indices

### Overview & Instructions

Dr. Engleberg interviews Dr. Opare-Sem about this programme

What is blood cell cytometry?

System Requirements

Download Flash Player (WINDOWS)

Download Flash Player (MAC)

Acknowledgments

### View or Read



### Links to Learning Modules and Self-Evaluations

[Review the cases](#)

[Self-evaluation](#) (click here after you have completed the cases in the basic programme)



Interview with Dr. Opare-Sem concerning the programme



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## Cases

[Normal](#)[Microcytic 1](#)[Normocytic 1](#)[Macrocytic 1](#)[Haemolysis 1](#)[Other 1](#)[Microcytic 2](#)[Normocytic 2](#)[Macrocytic 2](#)[Haemolysis 2](#)[Other 2](#)[Microcytic 3](#)[Normocytic 3](#)[Macrocytic 3](#)[Microcytic 4](#)[Macrocytic 4](#)[Macrocytic 5](#)[Go to References Page](#)[Return to Index](#)

### Microcytosis 3:

Recovery from iron deficiency shows an increasing RBC count, two populations of erythrocytes (pre-existing microcytes and newly formed normocytes. MCV will not have changed early in recovery. The contribution of the two populations lead to higher RDW. (These changes are not easily appreciated on peripheral smear.)

#### These are the blood indices associated with this problem --

- RBC 3.90
- Hb 9.7
- Hct 30.0
- MCV 76.8
- RDW 23.7

[View Dr. Opare-Sem's discussion of the case](#)

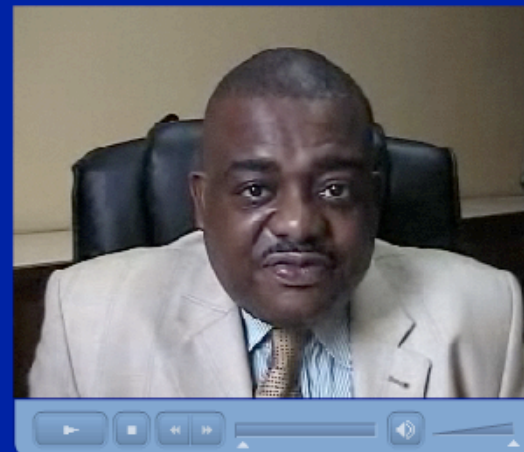
Consider what the distribution should look like, then click below to confirm your impression.

[View the plotted distribution of erythrocytes.](#)

Consider what the peripheral smear should look like, then click below to confirm your impression.

[View the blood smear.](#)

For more extensive information about [iron deficiency](#), click on this active link

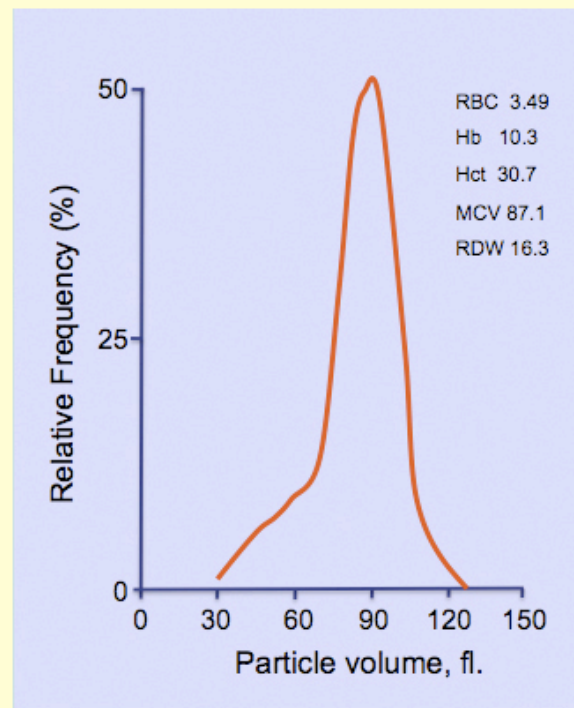


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## Question 1 :

A 52 year-old man presents with fever and progressive malaise, preceded by 2 days watery diarrhoea. Two of his family members suffered similar illnesses within 24 hours of a common meal.

His automated blood report:



**Q1: Which of the following is the most likely diagnosis?**

- ☐ A. severe dehydration
- ☐ B. haemolytic-uremic syndrome
- ☒ C. sickle-cell hemoglobinopathy with *E. coli* diarrhoea
- ☐ D. thrombotic thrombocytopenic purpura
- ☐ E. anti-diarrhoeal-drug-induced anaemia

[Click here for discussion of the question.](#)

**Q1:**

**C.** sickle-cell hemoglobinopathy with *E. coli* diarrhoea

Incorrect. Try again.





# Laboratory Procedures

## Files Available for Viewing

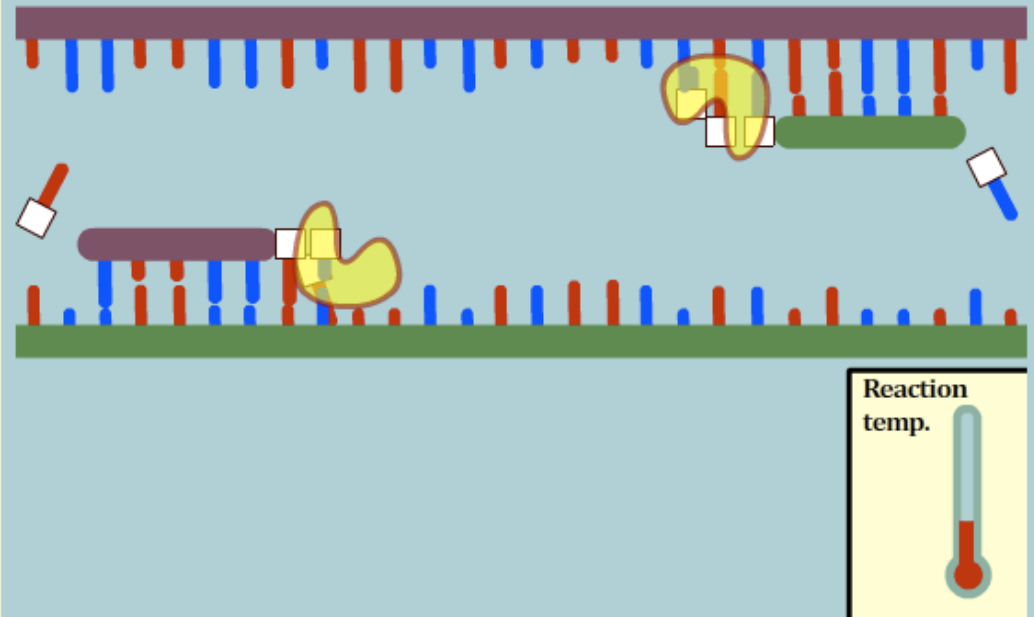
Gram stain technique demonstration ([video](#))

Gram stain of Gram-positives ([Flash](#))

Gram stain of Gram-negatives ([Flash](#))

Fundamental principle of polymerase chain reaction (PCR) ([Flash](#))

Real-time PCR ([Flash](#))



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# *How to Distribute to Students?*

- No learning management system or web servers
- Thumb drives, CD/DVD
- Cell phones?



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# *Where to Publish?*

- OER Africa website
- AAMC MedEdPortal
  - Peer reviewed learning material publishing





*More info:  
[open.umich.edu](https://open.umich.edu)*



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