

Thank you for your support of this unique historic site. Your membership helps preserve the historic artifacts of Indiana's medical past, including the Old Pathology Building, and funds tours and educational programs for more than 6,000 visitors each year. A benefit of your membership to the Indiana Medical History Museum is a subscription to our electronic newsletter, which will be issued quarterly and will contain information about our upcoming events, the collection, staff and volunteers, and related news.

Indiana Medical History Museum

Fall 2013

Upcoming Events at IMHM

Another busy fall season is upon us here at the Indiana Medical History Museum. Don't miss out on these great programs, and keep an eye on our website or Facebook page for more as the information becomes available!



Sunday, October 27th 2 to 4:30pm
[9th Annual Wizards Academy](#)

Visit with wondrous creatures from Animalia, Inc. and explore the science behind your favorite boy wizard's magical world through hands-on experiments! Special guest speaker Michael Cohen, professor emeritus of Science and Environmental Education at IUPUI, will educate and entertain parents while their young wizards attend classes. Advanced registration is required for this program, and spots are limited. For more information or to register visit



www.imhm.org/registration.

Thursday, November 7th 6 to 8pm

[Scientific Heroism: Risk in Biological Research](#)

This is a [Spirit and Place Festival](#) event.

Embracing the 2013 Spirit and Place Festival theme RISK, our panelists, Nordschow Professor Emeritus Dr. James Smith and Senior Research Professor Dr. George Sandusky, both from the Department of Pathology and Laboratory Medicine at IU School of Medicine, and Norma B. Erickson, Assistant Technical Director at AIT Laboratories in Indianapolis and graduate student in History at IUPUI, will discuss the general history of risk in medical research and the overall risks of laboratory work. They'll describe specific cases of accidental exposure and laboratory-acquired infections over the last 150 years, including recent cases. They will also talk about specific risks, and steps taken to diminish those risks, in research on the malarial treatment of syphilis that was conducted in the laboratories of the Old Pathology Department of Central State Hospital, which now houses the Indiana Medical History Museum. This program is free and open to the public. Click [here](#) to register online or call Sarah Halter at (317) 635-7329.

From the Collection: LaMotte Comparator

by John Sturman, MD



Prominently displayed on the west counter of the Bacteriology Room is the LaMotte Comparator, manufactured in Philadelphia after 1919. It consists of a wooden block, which unbuckles to yield a top and bottom. The bottom (right side of the photo) supports a series of sealed tubes containing colored fluid and a dropper bottle. The dropper bottle contains a dye, bromocresol green (BCG), which changes color from blue-green to yellow as its environment becomes more acid. This color change to yellow identifies a mildly acid state at pH 5.4. The top (left side of picture) becomes the holder for the tested fluid and the Color Standards.



At pH above 7.8 all the dye molecules are linked in stable pairs, giving solutions a blue color. The color marks the pH or level of acidity in the test solution.

The operator tested the pH of a fluid by placing it in the test

Clinical laboratories need to be able to measure and control the acidity of their test solutions, and used color-changing dyes in the early 20th century to do this. BCG is a yellow dye at acidity below pH 5.4; at or above this level, the dye molecules begin linking into pairs, which give a green color.



tube in the center well of the upper half of the Comparator block, and a drop of the BCG was added. The upper block has open slots for the center well, and the two wells on either side, allowing light to pass through. The operator switched the Color Standard tubes in and out of the side wells, viewing the degree of color match through the open slots in the block against sunlight. Comparing the color of standard tubes to the test fluid allowed an estimate of the acidity or pH to the nearest 0.2 pH. The set included 6 tubes of increasing yellow color (lower pH), a distilled water tube or blank, and 3 tubes of blue-green color (higher pH). Because of this color matching process, this is called a *colorimetric* test.



Colorimetric testing was refined further by using artificial light sources and photoelectric cells to measure the color. This kind of testing was replaced by fully electronic testing of pH invented in 1934 by Arnold O. Beckman. He developed a pH probe for Sunkist to monitor their production processes for citrus fruit. His pH meter completely replaced the colorimetric methods.

During cataloging we found, stuffed in the well of the lower half of the Comparator with the BCG reagent dropper bottle, the instructions (in pieces) for using this equipment. The LaMotte Company is still in business with focus on water quality testing products, serving markets such as pool and spa water, industrial water boiling and cooling, drinking water, sanitation, laundry, fish farming and soil.

They relocated in recent years to Chesterton, Maryland, from Baltimore.

IMHM also has a larger comparator, of unknown manufacture, in the collection. It is displayed along side the LaMotte Comparator.

