

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

Summer 2013

## The Microscope: Window to an Unseen World, Bridge Between Past and Present

by David Zauner, member and volunteer at IMHM

The microscope is a device that provides a way to observe very small things. The word “microscope” is derived from two Greek words that mean “small seeing”. A simple microscope consists of a single lens that magnifies at a low power. The most familiar example is the magnifying glass used to read small print or examine fine detail in photographs. A compound microscope is made up of two or more adjustable lenses that together give a highly magnified view. Bacteria, plant cells, and animal cells can be seen in detail through this type of microscope. Simple microscopes with relatively crude lenses were first made around the middle of the fifteenth century and were continually improved as better quality glass became available and techniques for grinding lenses to specific shapes were perfected. The compound microscope was developed in the late sixteenth or early seventeenth century in The Netherlands, and soon afterward these instruments were widely available from European opticians. By the late nineteenth and early twentieth century, as a result of advances in optics and manufacturing techniques, microscopes were finely made, precision scientific instruments essential to the work of any laboratory.



The laboratories of the Pathological Department of the Central Indiana Hospital for the Insane were no exception. Microscopes were primarily used in two areas: histology, or the study of various tissues of the body and the cells that comprise those tissues, and bacteriology, the then-new study of tiny single-cell organisms that often cause disease. Microscopic examination

of tissue sections taken during autopsies of patients often provided valuable clues about the injuries or diseases that afflicted these individuals, and sometimes caused their deaths, by revealing abnormalities or damage in individual cells. Bacteria were classified and identified by the shape, form, and arrangement of their cells and how the cells were colored by chemical dyes. The Museum's collection includes simple and compound microscopes, a few dating back to the opening of the Pathological Department but most from later periods, which are on display in the Histology and Bacteriology laboratories. Also on display, in the photography studio, is a combination of microscope and camera that was used to make photomicrographs of microscope slides on glass plate negatives. Scientists and physicians working in the Pathological department could then send prints produced from these negatives to colleagues in other cities for consultation, or use them to illustrate research papers or books for publication.

Technology has advanced far beyond the capabilities of 1896, when the Pathological Department opened. Digital microscopes that project images on a computer monitor allow several scientists to examine and discuss an image together, rather than individually taking turns squinting through eyepieces, and then send that image halfway around the world in an instant. Electron microscopes, unimaginable in that era, allow things as small as viruses, molecules, and even sometimes individual atoms to be seen. What remains unchanged is the value of studying small parts to more fully understand the whole. Although the Museum's exhibits and collection focus on the use of microscopes in medical diagnosis and research, scientists in many fields use them to examine a variety of tiny objects: pollen and seeds, butterfly wings and housefly eyes, hairs and fibers, soil samples and mineral crystals, and so much more. Much of science involves the study of very small things, and the microscope is an instrument that, in many ways, not only ties these different branches of science together, but joins different times as well.

**The Indiana Medical History Museum  
has once again been nominated for  
BEST MUSEUM on the Indy A-List.  
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## Volunteer Spotlight: Kathi Coon Badertscher



Kathi Coon Badertscher is a doctoral candidate in the Indiana University Lilly Family School of Philanthropy. She teaches undergraduate classes in philanthropic studies at IUPUI. Her recently published article in the Indiana Magazine of History, “A New Wishard Is On the Way,” examines the changing face of public health care and the tradition of philanthropy at Wishard Hospital in Indianapolis. Her interests include the nonprofit sector theory and practice, the history of philanthropy and voluntary associations, and the history of medicine. She has served on the boards of American Red Cross of Greater Indianapolis, Indianapolis Chamber Orchestra, and Storytelling Arts of Indiana.

### **What first attracted you to IMHM? What did you think after your first visit? What made you want to volunteer?**

*I visited IMHM several years ago. I remembered the museum room most vividly and always referred to IMHM as “the brain museum.” Then in 2011, one of my IUPUI history classes required a local museum visit of our own choosing. Right away, I knew I would return to IMHM so I came in for a tour. By then, I knew my doctoral dissertation would be on the history of philanthropy in Indianapolis during the time period that IMHM interprets. I wanted to know much more about the state of medical care and knowledge and who the influential citizens were. I had just completed board service for another nonprofit and was thinking about finding another organization to volunteer for. At the end of my tour, I introduced myself to the Executive Director, Mary Ellen Nottage, and asked about volunteer opportunities.*

### **What do you like most about volunteering?**

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*I love the connection to history when I walk in the building. Many museums have to work hard to create a “sense of place.” We are so fortunate to have the Pathology Building frozen in time. IMHM doesn’t have to work to create a sense of place – the grounds and the building are a sense of place. You can’t help but feel the history in every room. I have the most to tell visitors when I am in the library. To me, the library best conveys the sense of dedication with which the Central State doctors approached caring for the mentally ill.*

**Do you gain anything personally from your time spent here? Would you recommend it to others?**

*Giving tours at IMHM is rewarding, especially when visitors are inquisitive and want a dialogue with you about the history of medicine. Most visitors have questions about medicine and/or history, and sometimes about Indianapolis. You get to be an ambassador not only for the past, but for our city.*

**What do you want to tell others who might be interested in volunteering at IMHM?**

*All the museum staff and volunteers have been very welcoming, and everyone has tremendous knowledge. One of the volunteers told me, “you will learn something new on every tour,” and that is definitely true. Jump right in and learn all you can from the people around you.*

**Do you think that volunteering helps you professionally? If so, how?**

*Definitely. I read a lot to prepare for my first tour. All the preparation added to my knowledge of both the history of medicine and Indiana history. It added to my perspective when I wrote my article, “A New Wishard Is On the Way.”*

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**Anything else you want to say about your experience here?**

*Have fun. You will never be bored!*

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## Upcoming Events at IMHM



### **Guided Walking Tours of the IMHM Medicinal Plant Garden**

Saturdays at 11am from June through September, IMHM offers free guided walking tours of the Medical Plant Garden led by one of the Purdue Master Gardeners who lovingly maintain it. The tour begins promptly at 11am and does not include a tour of the museum.

### **[Looking Through the Lens: an Exhibit of Microscopy at the Indiana Medical History Museum](#)**

This exhibit will be included in the guided tour of the museum from September 12, 2013 through February 15, 2014.

### **Fall Installment of the Forensic Science Lecture Series**

The fall forensics lecture will take place in the IMHM amphitheater on Wednesday, October 9, 2013 from 4 to 5:15pm. Dirk Shaw, trace chemist at the Marion County Forensic Services Agency and Gina Londino, lecturer on forensic microscopy in the IUPUI Department of Chemistry and Chemical Biology will talk about use of microscopes in forensic work, the types of microscopes available and advances in technology, and specific cases in which forensic

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microscopy played a key role. The lecture is free and open to the public but requires an RSVP due to limited seating. Check the events page on our website for more information.

### **[9th Annual Wizards Academy](#)**

Visit with wondrous creatures from Animalia, Inc. and explore the science behind your favorite wizard's magical world through hands-on experiments. A special guest speaker will educate and entertain parents while their young wizards attend classes.

Advanced registration required. Check the events page on our website for more information as it becomes available.

### **[Scientific Heroism: Risk in Biological Research for the Benefit of Public Health](#)**

IMHM's [Spirit and Place Festival](#) event will take place Thursday, November 7, 2013 from 6 to 8pm. Physicians and scientists take many risks in their quests to better understand and control infectious diseases in sometimes heroic efforts to make the world a better place for everyone. Drs. James Smith and George Sandusky of the Department of Pathology and Laboratory Medicine at IU School of Medicine and Norma B. Erickson, Assistant Technical Director at AIT Laboratories in Indianapolis will discuss the history of risk in biological research and overall risks of laboratory work. This program is free and open to the public, but does require advanced registration through Spirit and Place. Please check the events page on our website for more information as it become available.