Northeast Branch Newsletter

Number 136 Winter 2012-13

Programs in Review 2012

Appreciation of William A. Hinton

Alfred DeMaria. Jr., MD, President, NEB

An Appreciation of William A. Hinton, the final NEB program of the year, was held on December 4, 2012 at the newly renovated and re-designed Public Health Museum in Tewksbury, MA. Alfred DeMaria, Jr., MD, Medical Director and State Epidemiologist, Bureau of Infectious Diseases, Massachusetts Department of Public Health, William A. Hinton State Laboratory Institute, Jamaica Plain, MA spoke about the remarkable life and career of William Augustus Hinton, MD, one of the preeminent microbiologists and immunologists of the twentieth century. Attendees were invited to tour the Museum prior to the lecture and view an exhibit of Hinton's papers that are on display there.

Dr. DeMaria began with a short history of the State Laboratory Institute in Jamaica Plain. The state Public Health Laboratory has been in Jamaica Plain since 1894, when it's first director, Theobald Smith, decided that it would make more sense to move the laboratory nearer the horses, where they were making anti-diphtheria serum, than to carry large amounts of plasma to the State House where the State Laboratory was then located. (Continued on pg 3)

Arboviral Surveillance in Massachusetts: A Public Health Laboratory Perspective

The third dinner-meeting of 2012 was held on November 12, 2012 at The Chateau in Norwood, MA. Sandra Smole, PhD is Director of the Division of Molecular Diagnostics and Virology at the William A. Hinton State Laboratory Institute (HSLI) of the Massachusetts Department of Public Health (MDPH), and is responsible for coordinating public health laboratory diagnostic efforts, including surveillance for West Nile virus (WNv), eastern equine encephalitis virus (EEEv), respiratory viruses, measles, rabies, norovirus, and molecular testing of biological threat agents. Dr. Smole spoke on *Arboviral Surveillance in Massachusetts: A Public Health Laboratory Perspective.*

Dr. Smole spoke of an unprecedented 2012 arboviral season in Massachusetts in which the state experienced both an increase in WNv human cases, as in other parts of the country, and uniquely experienced a large number of EEEv human cases. (Continued on pg 8)

Inside This Issue

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(Offices effective until June 30, 2013)

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NEB Council Meetings

Council Meetings this year will continue to be held at the State Laboratory Institute in Jamaica Plain. Members and all interested microbiologists and scientists are welcome to attend. Please notify Irene George, Secretary at (508) 785-0126 in advance.

Membership Notes

Dues reminders for 2013 have been sent to our membership via e-mail. Members who did not provide an e-mail address were contacted by postal service. Membership forms may be found on the NEB website or you may join the both the ASM and the Northeast Branch online through the ASM eStore. Please make the necessary corrections to your demographics and return dues to the Treasurer. Emeritus members need to reply if they wish to remain on the mailing list. Changes only may be e-mailed to: NEBranch-ASM@comcast.net. Please check mailing labels on postal correspondence as they reflect existing information.

Although membership in the national branch automatically makes you a member of the local branch in some organizations, this is NOT the case in the ASM. *To be both a National Member and a NEB member, you have to join each individually.* The Northeast Branch currently has 275 members.

Council Election Results

Congratulations to the following NEB members whose terms as Branch Officers run from July 2012-June 2013: Alfred DeMaria, Jr., President, and Carol L. Finn, Local Councilor. We are looking forward to working with you in planning a busy year!

Student Chapters

The NEB is associated with three active student chapters. The Boston-Area Student Chapter, the University of New Hampshire Chapter in Durham, NH, and the Maine Society of Microbiology, Orono, ME. We look forward to collaborating with them again in the coming year.

An Appreciation *of* *William A. Hinton*

(Continued from page 1)

Dr. DeMaria went on to tell us why it is now named after William Augustus Hinton, who invented the Hinton test and did many other remarkable things in spite of many obstacles, particularly because he was an African-American. Many of his accomplishments have never been documented because no one has ever written a biography of Hinton; Hinton's papers came from the State Laboratory. Dr. DeMaria went on to speak of Hinton's life and work, syphilis in the 20th century, and current available tests for syphilis.

William Hinton's parents, both former slaves, moved from Georgia to Chicago where he was born on 12/15/83; they then moved to Kansas City, where he grew up. He was the youngest graduate of Kansas City High School at the age of sixteen in 1899 and went directly to the University of Kansas from 1900-02, where he completed three years of premedical work in two years. He then transferred to Harvard College where he received his B.S. in1905.

Hinton's early career started in law, which he soon left for teaching. He taught science at primarily black schools such as Walden University in Nashville, TN from 1905-06, and Langston University, Langston, OK from 1906-09. He considered attending medical school and took summer courses at the University of Chicago, where he probably met his wife, Ada Hawes, who was a student there. He went back to Langston University and they were married in 1909.

He applied for Harvard Medical School scholarships in 1909, but declined a scholarship for African-American students; instead he applied for competitive scholarships, and won both the Wigglesworth and Hayden scholarships. He also worked part time in the laboratory of Richard Cabot & Elmer Southard, pathologists at the then Brigham Hospital and the Massachusetts General Hospital. Here he was introduced to laboratory work and serologic testing for syphilis which was just becoming possible. He graduated *cum laude* from Harvard in 1912.

However, Boston hospitals would not give him an internship because he was black, but he remained here, and volunteered at the Massachusetts General Hospital Neuropathology Department from 1912-15, where he learned and performed the Wasserman test which was first used in the U.S. in 1909. He autopsied syphilis cases also and made precise clinical observations on syphilis patients on the wards. He co-authored a chapter on syphilis serology in Rosenau's Textbook of Preventative Medicine in 1914, the public health textbook of the time. This was a brand-new field at that time!

The Wassermann test was not performed in the United States until 1909, and the original Wasserman laboratory was part of Harvard Medical School until June 1, 1915, when it was essentially funded by the Department of Public Health and became part of the MA Department of Public Health (MDPH). Hinton started working for the Wasserman Laboratory in 1915 doing syphilis testing, and as the local expert, became Director of the Wasserman Laboratory and Assistant Director of the DPH Biologic Laboratories. The Biologic Laboratories made smallpox vaccine, diphtheria antitoxin, diphtheria toxoid and similar products. The Wasserman Laboratory not only tested for syphilis but also did testing for the Division of Livestock Disease Control and tested for rabies, animal diseases such as glanders, brucellosis, and tuberculosis. It was also involved in searching for the cause of influenza when the pandemic hit in 1918.

Hinton also developed serologic tests for gonorrhea and lymphogranuloma venerum and he recognized that reliable testing depended on standardized performance. The existing Wassermann test was a complicated and difficult test to perform; he took responsibility for standardizing the test and ensuring that every laboratory in Massachusetts was using the standardized procedure. The Wasserman Laboratory was physically located at Harvard Medical School where it remained until 1949. Therefore throughout most of his career Hinton worked in the Longwood area until 1945 and served for thirty-eight years as the Director of the Massachusetts Department of Public Health Wassermann Laboratory.

The original Wasserman Test was developed in Germany in 1906 by August von Wasserman, who worked with Julius Citron and Albert Neisser. Basically, they found that there is a component of human plasma that lyses red blood

An Appreciation *of William A. Hinton*
(Continued)

cells when combined with antibody. They originally thought the test needed the spirochete antigen so they used the ground liver of stillborn children with congenital syphilis. They later found that spirochete antigen was not needed; a suitable antigen, cardiolipin, was present in beef heart or muscle. Therefore this is essentially a non-treponemal test and it was the only test for syphilis at the time. Sheep red blood cells were used as the antigen; antibody to these cells was prepared by inoculating rabbits and guinea pig complement was used. Patient serum was mixed with antigen; if antibodies to cardiolipin are present in the serum, complement is fixed, red blood cells are not lysed and precipitate as a button of cells on the bottom of the test tube. In the absence of antibody to cardiolipin, complement is not fixed and lyses the cells; a pink color is seen, indicating a negative test. Dr. DeMaria described the Wasserman Test as done in 1916 in detail and commented that such a test was especially difficult to do with a large volume of specimens.

In 1916 testing for syphilis was offered by the Wasserman Laboratory. Specimen submission required approval by a district health officer, local board of health, state institutions, or practicing physicians. Patients could go to the Wasserman Laboratory to have blood drawn if a physician did not want to do it. Hinton observed all of this and thought there must be a better way to do the test.

Dr. DeMaria then described the disease. Syphilis is a sexually transmitted, bloodborne infection caused by the spirochete *Treponema pallidum*, which cannot be grown in culture. Antigen today is obtained by infecting male rabbits with the spirochete and grinding their testicles. The disease was very prevalent in the 20th century; many famous people had the "pox".

When the Laboratory started syphilis testing, Hinton gathered data showing that 15% of all the tests they did in a five month period (6/1/15 to 11/1/15) were positive for syphilis, implying the presence of active disease. The disease generally did not cause much mortality but did result in significant morbidity. It was first documented in Europe in the 15th century and at that time was a major cause of death. The organism can infect any organ in the body but prefers the skin and central nervous system.
Syphilis has three stages. Primary syphilis is evidenced by an infectious, painless ulcer on the genitals. A secondary stage of the disease is usually manifested by a rash over the entire body which contains spirochetes and is infectious; infectious warts can also appear in the perineal area. The third stage of syphilis affects the central nervous system. There is madness, dementia, loss of sensation in the lower extremities resulting in joint damage, gummas (destructive lesions on the liver, brain, face, etc.). Syphilis was a lifelong infection for most people; therefore a woman could pass the disease to a newborn. A major problem early in the 20th century before penicillin was discovered was congenital syphilis. Newborns had characteristics such as "saddle" nose, lip erosions, Hutchinson's (deformed mulberry molars, pointed) teeth, and keratitis which would lead to blindness. Attempts were therefore made to specifically treat women before the disease could be spread to newborns.

Reported cases of syphilis in Massachusetts from 1918 to 1983 were 100-140/100,000 (1% of the population had active disease). Hinton made the disease easier to diagnose with the Hinton Test. He started working on it in the 1920's and wanted a test where the antibody would cause cardiolipin particles to agglutinate, i.e. flocculate. He published on the development of a flocculation test using cardiolipin which was 98% accurate in 1927. The test was adopted by the MDPH in 1934, the same year in which it was recognized by the U.S. Public Health Service as being the best test available for syphilis. It replaced the Wasserman Test and was used well into the 1960's; both the Venereal Disease Research Laboratory (VDRL) and Rapid Plasma Regain (RPR) tests evolved from the Hinton Flocculation test.

Dr. DeMaria described the history and performance of the Hinton test in detail. It took sixteen hours to perform in 1927, and was perfected as years passed. The test allowed for high-volume testing, something that could not be done with the Wasserman test. Statistics for serologic tests for syphilis done at the State Laboratory from 1915 to 1952 showed that

FUTURE PROGRAMS

Local Programs: Local Meeting announcements and registration materials are posted on our website: http:// www.northeastbranchasm.org or through the ASM website: http://www.asm.org

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March 28, 2013. You Are What You Eat: Diet, Prebiotics, Probiotics and Health

Speaker: Maria L. Marco. PhD, Assistant Professor, Food Science and Technology Department, University of California, Davis, CA (American Society for Microbiology Distinguished Lecturer)
Location: The Lantana, 43 Scanlon Drive, Randolph, MA
Contact: Irene George at NEBranch-ASM@comcast.net

April 22, 2013. One Health Forum

The Northeast Branch of the American Society for Microbiology, in association with the Department of Public Health and Community Medicine of Tufts University School of Medicine, will sponsor a forum and public dialogue on One Health on Monday, April 22, 2013 (Earth Day), 6:00PM-8:30PM, in Room 114 of the Arthur M. Sackler Center for Medical Education, Tufts University, Boston Campus. The forum will feature a panel that will consist of a physician, veterinarian, microbiologist and environmental scientist. The panel will present their perspectives on the One Health Initiative ("a worldwide strategy for expanding interdisciplinary collaborations and communications in all aspects of health care for humans, animals and the environment", http://www.onehealthinitiative.com) and then engage the audience in a discussion of the meaning of One Health, its inclusion in educational and training programs, incorporating the perspective into career paths, and how the One Health Initiative can be promoted generally. The invited audience will include undergraduates in pre-professional programs, graduate students in the biosciences, health professions students and post-graduate trainees, although all who are interested are invited. *Final Program and Registration pending*.

April 23, 2013. **Multiplex Molecular Testing for Rapid Diagnosis of Gastrointestinal Infections**

Speaker: Kimberle C. Chapin, Director of Microbiology and Molecular Diagnostics, Lifespan Academic Medical Centers, Providence, RI
Location: Johnson & Wales Inn, Seekonk, MA
Sponsored by: the Northeast Branch-ASM and American Society for Clinical Laboratory Science of Central New England (ASCLS:CNE). *Final Program and Registration pending*.
Contact: Frank Scarano at fscarano@umassd.edu

May 31, 2013. Conference on Infectious Diseases

Location: The Lantana Conference Center, Randolph, MA
Registration: No fee for Hospital and Clinical Laboratory Microbiologists and administrators if you pre-register online. *Final Program and Online Registration pending.*
Contact: msundeen@trimarkpublications.com or call 888-OK-TRIMARK, Ext.702
Sponsored by: TriMark Publications, in cooperation with the Northeast Branch-ASM

National Meetings:

May 16-19, 2013. 20th Annual ASM Conference for Undergraduate Educators, Englewood, Colorado. Contact: Education Department, ASM, Washington, DC. See: www.asmcue.org.
May 18-21, 2013. 113th ASM General Meeting, Denver, Colorado. See: www.asm.org/asm2013
May 17-20, 2014. 114th ASM General Meeting, Boston, Massachusetts
September 10-13, 2013. Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC 2013), Denver, CO.

Appreciation *of* *William A. Hinton* (Continued)

Program Attendees Visit the Hinton Exhibit at the Public Health Museum

an increased volume of testing was done using the Hinton test.

Although there were six other serologic tests for syphilis in 1938, the Hinton test was noted for its fewer false positive results. During this time, Dr. Hinton wore a second hat; he served as Chief of Clinical Pathology at the Boston Dispensary.

The social environment during Hinton's time was extremely difficult. The National Medical Association was founded in 1895 to provide a professional organization for practitioners of African descent who could not join the AMA. In some states, you could not practice even though you could join the medical association. Also, there was the Flexner Report on Medical Education in the U.S. and Canada in 1910, which was sponsored by the Carnegie Foundation for the Advancement of Teaching. It contained openly racist language as evident in Chapter 14 – "The Medical Education of the Negro". While Hinton studied syphilis, the Tuskegee experiment was also ongoing (1932-72). When these men tried to join the Army during World War II, investigators tried to prevent them from being treated because the experiment would be ruined; neither were they treated in 1946 when penicillin became available. The experiment was stopped in 1972 by a whistleblower, and the Clinton administration later apologized.

Dr. DeMaria pointed out that in the 1998 Manual of Testing for Syphilis, Washington DC, and the Hinton test wasn't even listed. The Springard Metal was annually awarded by the NAACP for outstanding achievement by an African-American, except for 1938 when is it was awarded to William A. Hinton, as a leader in his field, but he declined to accept. No one knew exactly why, but he wanted his work to stand on its own merit and not his race. Elisa Forrest Harleston suggests he had a broad circle of associations and was quite involved in the medical community, yet Hinton was a very private person. He mentored other African American professionals such as Ruth Easterling, M.D., a pathologist at the Beth Israel Hospital, with whom he collaborated.

Syphilis was rampant in Europe in the 18th century and in America in the 20th century. In the 1930s, the Roosevelt administration pushed to get people tested for the disease, employing a campaign similar to that used for HIV today. Thomas Parran, Jr., Surgeon General of the United States from 1936 to 1948, used media, posters, radio, and ad campaigns. The goal was to get people to the hospital, government and state clinics for syphilis diagnosis and treatment, etc. Laws were passed to test people before marriage. Chicago even had syphilis parades and rallies!

Dr. Hinton was active in the Massachusetts Medical Society and published in the New England Journal of Medicine. In 1936 he published the textbook "Syphilis and Its Treatment"; his personal signed copy is available at the Public Health Museum in Tewksbury today. Antisyphilitic drugs then included mercury bismuth, and arsenic, which are toxic to humans as well as the spirochetes.

Appreciation *of* *William A. Hinton*
(Continued)

Penicillin for gonorrhea and syphilis became available in 1946; current treatment calls for one dose of 2.4 million units of penicillin administered intramuscularly. Reported cases of syphilis in the U.S. from 1941 to 2010 dropped dramatically, analogous to the dramatic decreased incidence of reported syphilis in Massachusetts from 1918-1983.

Syphilis is still diagnosed serologically but screening algorithms for syphilis are complex and somewhat confusing explained Dr. DeMaria. He went on to describe the interpretation in detail of both the nontreponemal and treponemal tests and syphilis serologic screening algorithms that are used today. There are several nontreponemal tests such as the Rapid Plasma Regain (RPR), Venereal Disease Research Laboratory (VDRL) and Toluidine Red Unheated Serum (TRUST) tests, all characterized by high sensitivity, but much lower specificity. Seven treponemal tests, some of which are automated, are available and use treponemal antibody, particle agglutination and microbead immunoassays; these are characterized by having high specificity, but much lower sensitivity. Hence testing must be done as a duplex; screening with the highly sensitive nontreponemal serological test and confirming serological positive tests by one of the treponemal tests. One of the recognized difficulties with the serological tests is the need to distinguish between a positive test resulting from a previously treated infection and an active infection, which can be done by sequential tests looking for increasing titers, or distinguishing between early and fleeting (IgM) antibodies. The current search is for the development of a definitive PCR assay directed against a component of the spirochete.

William Hinton married Ada Hawes in 1909 in Langston, OK, and they had two girls, Anne and Jane. They lived on a farm in Canton Massachusetts prior to 1920. Ada graduated from the University of Chicago in 1907 and mentored Martha May Eliot in 1914. One of the daughters, Jane Hinton, worked in Dr. Mueller's laboratory and in 1941 they developed Mueller-Hinton agar for the growth of gonococcus. Today the medium is still used for antibiotic susceptibility testing. She was one of two women graduates of an American Veterinary School at the University of Pennsylvania in 1949. She had a small animal (veterinary) practice in Framingham, MA and later worked as an inspector for the federal government.

Dr. Hinton had an outstanding academic career, which ranged from instructor, lecturer, clinical professor of bacteriology and immunology and Professor Emeritus at Harvard Medical School and lecturer at Simmons College, Tufts University School of Medicine and Harvard School of Public Health.

The loss of a leg in a car accident in 1940 did not keep him from teaching, and he was Harvard's first black professor. He was Chief of the Department of Clinical Laboratories at the Boston Dispensary from 1915-53 and in 1929 established one of the first medical technology training schools. This program moved to Northeastern University in 1964 and was called the Hinton Course for Medical Laboratory Assistants. While working for the Department of Public Health Hinton received five promotions. He was awarded a lifetime membership in the American Social Science Association in 1948. He retired in December 1953, after 38.5 years of service, but still taught at the Massachusetts Hospital School in Canton.

Hinton left $75,000 to Harvard Medical School for the Dwight D. Eisenhower Scholarship Fund for graduate students when he died at age 75 on August 8, 1959, in Canton, MA. The American Society for Microbiology today has a William A. Hinton Research Training Award. The MDPH State Laboratory Institute was named the William A. Hinton State Laboratory Institute in 2008 in his honor.

Arboviral Surveillance in MA

(Continued from page 1)

Her talk provided a historical perspective on EEEv activity and gave an overview of the testing algorithm within her division which currently supports the MA Arbovirus Surveillance Program. She also highlighted some of the laboratory efforts to predict the severity of an upcoming arbovirus season.

An epidemic of brain disease in horses was first recognized in Massachusetts in 1831 when 75 horses died of the disease. It wasn't until 1933 that the causative agent of this disease, eastern equine encephalitis virus, was isolated from infected horse brains. In 1938, a large outbreak occurred in horses in Massachusetts (~300 cases) which was closely followed by 35 human cases resulting in 25 deaths. This was the first evidence that this equine disease was lethal for humans. There were no subsequent major outbreaks in Massachusetts until 1955. In an effort to study this disease, the CDC in collaboration with MDPH opened the Taunton Field Station in southeastern Massachusetts in 1957 to perform EEEv surveillance. In 1964, the Taunton Field Station unified with MDPH to become the Diagnostic Laboratory Field Station. When CDC withdrew its staff in 1969, the State Diagnostic Laboratory and its EEEv surveillance efforts were taken over completely by MDPH. Her talk elaborated on the little known, valuable scientific contributions of MDPH's Virology Laboratory to the Diagnostic Laboratory Field Station concerning the laboratory testing methods to provide EEEv surveillance in Massachusetts. Specifically, MDPH has performed laboratory diagnostic testing for this virus beginning as early as 1954, just as it still does today. From 1954 to 1965, MDPH's Virology Laboratory was located at Harvard Medical School (25 Shattuck St) and was overseen by Joan B. Daniels, the Virology Laboratory Chief. Her laboratory moved to downtown Boston (600 Washington St.) and was later brought out to Jamaica Plain in 1970 to the then new State Laboratory Institute. She was responsible for developing several tests for arboviruses, including the plaque reduction neutralization assay. While we still use this assay today, Dr. Smole described the currents tests which allow for quickly screening more

Sandra Smole, PhD and
Alfred DeMaria Jr., MD, NEB-President

samples using automated nucleic acid extraction platforms and real-time detection PCR.

Dr. Smole reviewed surveillance data for EEEv in southeast Massachusetts beginning in the 1970s, with 7 human cases/6 deaths from 1973-75; 10 human cases/3 deaths from 1982-84; 4 human cases/1 death from 1990-92; 13 human cases/ 6 deaths from 2004-06 and 10 human cases/4 deaths from 2010-2012. She mentioned that intensive control efforts led by the Department of Agricultural Resources included aerial spraying in 1973, 1990, 2006, 2010, and 2012. She expressed concern about the detection of an unprecedented number of EEEv positive mosquito pools and 7 human cases in 2012 alone, which resulted in two aerial spray events. She noted that 2012 was also atypical in that the virus was detected in mammal-biting mosquitoes before being detected in the usual bird-biting species, *Culiseta melanura.*

Arbovirus transmission occurs from bird to insect, insect to bird, and insect to human. In early summer, the virus is first seen in bird-biting mosquitos, and then later in humans, usually after it appears in mammal-biting mosquitoes. The EEEv enzootic vector which feeds on birds is *C. melanura*; the epizootic vectors feeding on mammals include *Aedes vexans, Coquilletidia perturbans* and

Arboviral Surveillance in MA
(Continued)

Ochlerotatus canadensis. The disease is typically seen during July-October; has a 4-10 day incubation period, with mild flu-like symptoms that lead to encephalitis and coma. Asymptomatic infections are rare (<1%). West Nile virus appears in July through October and has an incubation period of 2-15 days. About 80% of the cases are subclinical or asymptomatic, while 20% develop West Nile fever and about 1-2% encephalitis.

The Arbovirus Surveillance Program at the Hinton State Laboratory Institute is a close collaborative effort between the Bureau of Laboratory Sciences and the Bureau of Infectious Disease (BID). The Bureau of Laboratory Sciences is responsible for overseeing a field collection component, involving setting mosquito traps and sorting key species collected from MDPH long-term EEE trap sites, coordinating mosquito pool submissions, and testing for EEEv and WNV from nine other mosquito control projects, as well as, performing diagnostic testing of human and specimens submitted by veterinarians (e.g., horses). Disease surveillance and risk communication messages are the responsibility of the BID and include communications with clinicians, local health agents, the public and surrounding states, as well as, veterinary clinics/hospitals.

Dr. Smole then gave an overview of the laboratory testing algorithm within her division that supports the MA Arbovirus Surveillance Program. Arboviral testing itself is complicated and involves five different internal programs and laboratories, including arbovirus surveillance, virus serology, virus isolation, molecular diagnostics and rabies. Serology is the primary means of diagnosing human clinical cases. By the time a serum sample is collected from an ill person, viral genome is typically not present in serum in sufficient amounts to be detected by molecular methods. Typically, > 99% of human cases are diagnosed by IgM-specific antibody. Both IgM and IgG antibodies are detected by the antibody capture ELISA test. Specific antibody neutralization is done by the plaque reduction neutralization test (PRNT) for some specimen types. Tissue cell culture followed by EEEv-specific immunofluorescent antibody (IFA) test is also available, as needed to identify the virus. Serum is usually used for the primary diagnosis of clinical EEEv, but CSF can also be used. CSF is a better specimen type, but usually only a small amount is received. Virus from brain tissue and CSF can be cultured on Vero cells and cytopathic effect can be identified by EEEv-specific IFA test. Anti-flavivirus antibodies are used for WNV detection, therefore some other flaviruses may be detected, none of which usually occur in MA. However, travelers may acquire them elsewhere. Mosquito samples (pools of single species female mosquitoes) are primarily tested by PCR. For PCR, two distinct genetic targets for each EEE and WNV are used.

Key partners in the Arbovirus Surveillance Program with the MA Department of Public Health (BLS, BID, and Bureau of Environmental Health) include the Massachusetts Department of Agricultural Resources, State Reclamation and Mosquito Control Board (SRMCB), the SRMCB Mosquito Advisory Group, and the MA Department of Environmental Protection.

At the beginning of each season, the following criteria are included in the baseline pre-season risk assessment: EEE activity at the end of the previous year, ground water levels from normal or heavy rains (e.g., hurricane activity), and whether there has been a mild winter. Early season observations include a wet spring, and greater than average *C. melanura* activity. Once the season begins, the abundance of *C. melanura* and the number and location of EEEv isolations are carefully monitored.

Laboratory testing by the Arbovirus Surveillance Program within MDPH have continued in spite of state and federal budget cuts which started in 2007 and resulted in decreases in laboratory and field staff.

The mosquito testing process starts by sorting trapped mosquitoes into pools of 10-50 maximum mosquitoes to a pool. The samples ("pools") are homogenized, clarified by centrifugation and then a portion is used to extract total nucleic acid. PCR is then used to rapidly detect both WNV and EEE virus. Dr. Smole showed data depicting detection of positive WNV and EEE virus mosquito pools from early June to mid-October each year. During each season, these data are also used to

Arboviral Surveillance in MA (Continued)

generate risk maps depicting the risk associated with mosquitoes throughout the state. These maps are used to inform the local boards of health and the general public of the mosquito borne illness risk associated with specific areas across the state.

In summary, it was evident from Dr. Smole's talk that the MDPH Arbovirus Program is concerned about the unusual pattern of EEE virus activity found in the state in recent years. EEE virus is emerging and re-emerging in other parts of the state other than southeastern MA. The virus was both found much earlier in the 2012 season and earlier in mammal-biting mosquitoes rather than emerging first in bird-biting mosquitoes.

The Arbovirus Surveillance Program has several ongoing projects seeking to answer questions related to public health surveillance of arboviruses.

1. Is identification of the currently circulating EEE virus genotype group important? New genotypes have been seen in a given area from 1970-2000 and appear to localize in that area for a few years. Is there a correlation between EEE human cases and new genotype emergence? The answer appears to be "yes".
2. Can early season mosquito activity predict human cases later in the season? Yes, it is predictive.
3. Where does EEE overwinter? Older studies (1961-63) suggest snakes and turtles. A Florida study suggests overwintering in reptiles such as garter snakes.
4. Can we use a reptile-biting mosquito to predict EEE activity? *Culex territans,* a mosquito that bites reptiles and amphibians is present in MA. It was ignored before, but now there appears to be a connection between reptiles and EEE. EEE virus was detected in *C. territans* by MDPH supporting their viability as a reptile/amphibian vector of EEE virus.
5. What is the positivity rate of individual mosquitoes in a mosquito pool? Data suggests that a 30% positivity rate of individual mosquitoes can be achieved!
6. What is the rate of subclinical EEE virus infection in humans? A serostudy of EEE was performed by MDPH in 1961 including 328 volunteer families living in southeastern MA. From this data, 3/328 (<1%) were PRNT, EEE antibody positive. MDPH is interested in performing a study using current diagnostic techniques to verify this rate.

Dr. Smole's interests include improving laboratory quality, applying advanced molecular methods to diagnostic testing, and maintaining preparedness for high throughput diagnostic testing during events of public health concern. Dr. Smole is a member of the Association of Public Health Laboratories' Infectious Diseases Committee that seeks to improve the quality of infectious disease testing within the public health laboratory

ASM Launches New 2013 Membership Dues Structure

To better meet the needs of ASM's diverse and evolving membership, the ASM member categories have been reorganized. The new dues structure addresses the needs of scientists at differing points in their career by allowing members to select the benefit package that best meets their requirements and budget. Beginning in the 2013 member year the new membership categories are as follows:

- Student & Postdoctoral Membership $20 (Same benefits as Contributing/$50 members)
- Supporting Membership: $20
- Contributing Membership: $50
- Premium Membership: $120

Honorary, Emeritus, and Global Outreach member categories remain the same and have been incorporated into this system.

For more information about what is included in each category please visit asm.org/advance, or refer to the upcoming article in the September 2012 issue of Microbe.

From Microbe-Volume 8, Number 8, 2012

New Approach to Microbial Pathogenesis: The Damage-Response Framework

The second dinner lecture of the year was held at Johnson & Wales Inn in Seekonk, MA, on April 24, 2012 and was sponsored by the NEB and the University of Massachusetts Dartmouth Department of Medical Laboratory Science Student Association.

Liise-anne Pirofski, MD,
ASM Branch Lectureships Speaker

Liise-anne Pirofski, MD, an ASM Branch Lectureships Program Speaker, is Professor of medicine, microbiology and immunology at Albert Einstein College of Medicine and Chief of the Division of Infectious Diseases at the College and at Montefiore Medical Center. She spoke on *A New Approach to Microbial Pathogenesis: The Damage-Response Framework.* . Dr. Pirofski is also co-developer of the damage-response framework. Her research program is focused on immunity to encapsulated pathogens; in particular, mechanisms of resistance and susceptibility to such microbes in normal and immunocompromised hosts and novel strategies for vaccine development, using Cryptococcus and pneumococcus as examples. .

This lecture presented a new way of looking at the problem of microbial pathogenesis that incorporates the contributions of both the microbe and the host and takes the view that there are no pathogens…just microbes and hosts. Furthermore, the states of microbial pathogenesis, namely commensalism, colonization, latency and disease are viewed to be continuous and to differ only in the amount of damage to the host. This framework makes it possible to understand microbial virulence in the context of the immune status of the host, eliminating the need to introduce qualifiers, exceptions and modifiers to explain why the same microbe can cause disease in one host, but not another. The damage framework can be used to classify microbes as a function of the amount of damage and the immune status of the host, a system that does not rely on specific definitions.

A pathogen, in the damage-response framework, is defined as a microbe that has the capacity to cause damage to a host; virulence is an outcome of this interaction. Host damage defines the various outcomes that arise from the host-microbe interaction and changes in both are taken into account; the framework is a flexible system.

Host damage can be shown in parabolic curves that represent the amount of host damage as a function of the intensity and degree of host response. The contribution of the host immune response to microbes is considered.

An excellent review of the damage-response framework by Pirofski and Casadevall can be found in Nature Reviews in Microbiology, 2003, Volume 1, page 17.

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Identifying Human Chemical Exposures. The Role of Mass Spectroscopy in the Public Health Laboratory

The first program of the year was the second jointly sponsored program presented by the Northeast Branch and the Northeast Section of the American Association for Clinical Chemistry. It was held at the Hilton Garden Inn in Waltham, MA on March 15, 2012. Julianne Nassif, MS, Director, Division of Analytical Chemistry, William A. Hinton State Laboratory, Massachusetts Department of Public Health, spoke on *Human Chemical Exposures. The Use of Mass Spectrometry in the Public Health Laboratory*. . Her presentation included studies in which the Massachusetts Public Health Laboratory participated.

Ms Nassif began by indicating that the assessment of a possible chemical exposure begins by first looking at environmental possibilities and taking measurements. How much is found in water or food, and how available is the opportunity for exposure? The actual dose of toxic substance can be determined by biomonitoring (measuring these substances or their metabolites in human specimens), and estimating the concentration, or by measuring the internal level.

Human biomonitoring can be done by surveillance, such as with exposure to lead. The CDC annually publishes the Natural Exposure Report of lead in breast milk, hair, and nails. MA has targeted studies to identify problems in specific; i.e. New Bedford has polychlorinated biphenyls (PCB's) and arsenic. We can also observe if there is a higher than average prevalence of a disease with a chemical etiology. We also have emergency response biomonitoring, such as with mercury exposure in children in elementary schools and playgrounds. Evaluations of such situations led to public health regulations and interventions, and the development of environmental health policies. Consider for example, the removal of lead from gasoline led to a decrease in childhood lead exposure, and prohibiting smoking in public places led to a decrease in exposure to environmental smoke. Ms Nassif mentioned that the reason more of this type of environmental monitoring is not done is that it is expensive, and the technology to do it may not have been previously available.

There are also technical problems with mass spectrometry in the laboratory. The extraction process is tedious and currently is automated, using 96 well plates, with analytical instrumentation upcoming. Federal funding and emergency response funds are available for training, equipment and staff. CDC partners with commercial vendors and provides funding/technology for state laboratories. Ms. Nassif spoke of several different scenarios in which mass spectrometry is used (1) Inductively Coupled Plasma/Mass Spectrometry (ICP/MS) and environmental health, (2) detection of weapons of mass destruction, and (3) laboratory response in cases of intentional poisoning.

The first study Ms. Nassif described involved arsenic and uranium exposure in Central and Northeastern MA in 2008. The environmental study was initiated by the US Geological Service with the MA Department of Environmental Protection assisting. She showed a map of MA geologic in which granite and bedrock are abundant; and arsenic and uranium are known to leach from bedrock to drinking wells. Organic arsenic is not found in water except when contamination occurs from an outside source.
Seventy-eight communities were at risk and private drinking wells from 477 different homes were analyzed for arsenic & uranium using ICP/MS. The results ranged from 0-115 parts per billion (ppb); most wells were not affected. She also mentioned that such tests are expensive and labor intensive.

A public health investigation followed this environmental investigation. It was determined that at least 90% of drinking water had to come from wells and about one hundred people lived on certain fault lines. The study was offered to more than one hundred people and involved a detailed questionnaire, the collection of water and urine samples concurrently, and the analysis of samples for total arsenic and uranium by ICP/MS. Less than thirty people submitted urine; the community was not interested.;. Thirty-seven samples were received; 8 had >20mG/dL creatinine. The arsenic was speciated into either organic or inorganic (by HPLC and ICP/MS), inorganic arsenic being the one to worry about. Fortunately levels were not

Identifying Human Chemical Exposures (Continued)

sufficient to cause concern. This study thus made no huge contribution.

Another use of mass spectrometry in the MA Public Health Laboratory involves weapons of mass destruction and the (Chemical) Laboratory Response Network (LRN). She indicated that MA is one of ten Level 1 laboratories nationally that can measure human exposure to toxic and other chemicals such as nerve and mustard agents. Such laboratories have sophisticated high-throughput analytical capabilities and serve as surge capacity laboratories for CDC and other states. Ms Nassif showed a poster depicting agents of chemical terrorism which the laboratories are capable of identifying. Each Level 1 laboratory must demonstrate its proficiency to the CDC twice annually by going into a 24/7 mode until completed; the laboratory is expected to be able to function in this capacity for two weeks. As part of the LRN, Level 1 laboratories also provide training regarding chemical exposures for personnel in emergency departments, laboratories, Boards of Health, etc., This training includes the collection of appropriate clinical specimen, handling and transport, etc. One such course available several times annually in MA is "Hospital Response to Chemical Emergencies".

Ms Nassif gave an example of chemical exposure involving a chemical threat agent. On June 7, 2010, a possible exposure was reported at 6:30 am by St. Luke's Hospital in New Bedford. The first patient was a 28 year old male, a New Bedford commercial fisherman, with symptoms of vesicant exposure; i.e. shortness of breath, erythema and blisters on the right forearm and left leg. The previous day he had dredged the seabed 19 miles off Long Island, NY for clams and found a leaking, torpedo shaped metal canister that he threw overboard. Material from the canister had leaked onto his arm, which he ignored. About 4 hours later he developed blisters at site of leakage. Vesicants were suspected such as sulfa mustards, which are an oily clear to yellow/amber liquid or lewisites, which are also an oily liquid, clear to amber/black in color. He had been dredging in an area where, during the 1950 and 1960's, munitions were dumped. A 33 year old colleague, also a commercial fisherman, also presented with shortness of breath, itchy skin and odd sensations but no blisters. Both were transported to University of MA Medical Center for medical treatment

The Laboratory response to this was immediate. They followed protocol and sent out notifications to: (1) MA Department of Public Health Laboratory Director, state epidemiologist, Directors of Environmental Health and Emergency Preparedness; (2) the CDC LRN-Chemical Director and Medical Toxicologist (3) the FBI Weapons of Mass Destruction Coordinator, and (4) the Poison Control Center. Meanwhile, Laboratory staff were contacted at home and asked to come to work early. The Laboratory offered guidance to the hospital as to appropriate clinical specimens to collect and arranged for them to be brought to lab by courier; by 2:00 pm blood and urine arrived and by 2:30 pm analysis was started for sulfa mustards and lewisites. The laboratory was looking for SBMTE, a urinary metabolite of sulfa mustard, and CVAA, a urinary metabolite of lewisites. Ms Nassif explained the process in detail.

Analysis for lewisites is done using high pressure Liquid Chromatography (HPLC) and ICP/MS. Sample preparation is minimal and quantitation is done by internal standard mass spectrometry. Analysis for sulfa mustards is more complicated and uses HPLC/MS/MS. Multi-step reduction extraction needs to be done prior to analysis. Quantitation is done by isotope dilution mass spectrometry. Patient 1 was positive for sulfa mustard and negative for lewisites; patient 2was negative for both. This clinical data was critical for patient care and environmental health decisions regarding cleanup. While the amount of SBMTE in the urine decreased significantly in 24 hours, traces still remained at 130 hours post exposure. The fishermen are still being followed because of the concern with chronic long-term effects.

Approximately 500,000 pounds of clams on the fisherman's boat were embargoed and put into cold storage. The problem now was how to dispose of them; if they were put back into the ocean someone else might dredge them up. There were determined to be hazardous waste and Massachusetts does not allow hazardous waste disposal by incineration or landfill. The

Identifying Human Chemical Exposures (Continued)

clams were therefore sent to hazardous waste incinerators in Arkansas and Texas. The environmental response involved a number of agencies; who had jurisdiction was a problem for two weeks. This involved the local fire department, 1st National Guard Civil Support Team, Coast Guard, MA Department of Environmental Protection, US Environmental Protection Agency, MA HazMat Team, and Rhode Island. The problem of the canisters still exists, especially what to do with them when they are dredged up; they are usually not brought back to port but tossed back into the sea. Currently there is no resolution to the problem, there are still leaking canisters about one mile offshore which have been in salt water for more than 50 years.

Ms Nassif then spoke of cyanide, discussing both accidental exposure and intentional poisoning. Since 2008 there have been 13 responses by the Laboratory to potential cyanide exposure; some cases came from the medical examiner's office. There were nine cyanide suicides in which whole blood from patients / decedents was tested. Whole blood from first responders and family members was tested in 2/9 cases, as well as any white powders and related household items. In addition, there was one suicide of an indeterminate cause; two unknown industrial exposures and one hoax.

Ms Nassif indicated that normally cyanide exposure in the United States occurs only in the state of Massachusetts. This uniquely exists here because Massachusetts has a concentration of highly educated people with easy access to cyanide in colleges and universities, centers of medical excellence, biotechnology, research facilities and high technology and other manufacturing industries.

On December 9, 1910, at 2 am, a 17-year-old male collapsed after asking his parents to call an ambulance; a white powder was found in his possession. He was taken to Lawrence General Hospital in critical condition and a cocaine overdose was suspected. The toxicology screen was reported negative at 8:30 am. A suicide note and information about cyanide was found at his home by the parents. Hospital clinicians contacted the Poison Control Center for guidance and the Center contacted the Chemical Threat Laboratory requesting cyanide testing. Whole blood drawn at 2:37 am on admission and at 9:49 am, and the powder were all sent to the Laboratory. Ms Nassif described LRN-C methodology for analyzing cyanide; whole blood is acidified, the headspace is sampled, and then analyzed by Gas Chromatography/MS. Usual blood cyanide levels are less than 30 ng/mL. The first blood specimen had 5806 ng/mL and the second had 11,300 ng/mL cyanide. The patient was treated with cyanide antidotes, sodium thiosulfate and hydro-carbolomine, at about the time the second specimen was collected, however the patient's physical condition improved only slightly. It was determined that he had no brain activity on December 10, and the family agreed to keep him on life support until the cyanide was fully eliminated so that he could be an organ donor. The white powder analyzed was sodium cyanide, which can be easily ordered from the internet. The Lawrence police and federal agents were involved in this case; they identified and arrested the person responsible. Ms Nassif added that unfortunately, the Laboratory was not notified of the white powder until the police had seized it; if they had received the powder earlier it could have been analyzed earlier.

Annual BSL3 Seminar Series

April 22-23, 2013. BSL3 Facilities: Design, Construction and Beyond
April 24-25, 2013. Advanced BSL3 Work Practices and Procedures

Both presented by the Eagleson Institute at the North Carolina State Laboratory of Public Health, Raleigh, NC.

May 20-21, 2013
Verifying BSL3 Performance From Commissioning to Certification. Sanford, ME

For additional information please visit: www.eagleson.org/BSL3.

The Following Programs Were Jointly Sponsored with Other Professional Organizations

**Science Fairs

The NEB again provided annual support to the five Massachusetts regional fairs (Worcester Regional Science and Engineering Fair, Rensselaer-BCC Science Fair, Somerville Science Fair, South Shore Regional Science Fair, Boston Public Schools Science Fair), the Massachusetts State Science Fair, and the Vermont State Science Fair. Thank you again to NEB members who served as judges for the fairs.

**New England Microbiology Laboratory Directors Group Meetings

The New England Microbiology Laboratory Directors group has been meeting at the Publick House in Sturbridge twice a year for the past thirty years in order to share information and their experiences in the laboratory. The half-day agenda consists of presentations by attendees. Please contact Alfred.DeMaria@state.ma.us if you would like to receive meeting information. Meetings are supported in part by the NEB.

**Boston Bacterial Meeting

This year the NEB was one of the eight sponsors of the seventeenth annual Boston Bacterial Meeting (BBM 2012) which was held at the Harvard University Science Center on June7-8, 2012. The meeting attracts Boston-area researchers who are studying the biology of microorganisms in either academic or industrial settings. The NEB Booth was manned by students from the Boston Area Student Chapter of the American Society for Microbiology.

**The 64th American Society for Clinical Laboratory Science Central New England (ASCLS:CNE) Annual Convention

The ASCLS:CNE Annual Convention was held at the Rhode Island Convention Center in Providence, RI on May 1-3, 2012. It was jointly sponsored with the Board of Rhode Island Schools of Allied Health (BRISAH), Bay State Chapter CLMA (CLMA); Northeast Branch, American Society for Microbiology (NEB-ASM); Rhode Island Cytology Association (RICA); and Rhode Island Society for Histology (RISH).

**Hospital Response to Chemical Emergencies

This program was designed for emergency room specialists and laboratory staff who may provide patient care during a public health emergency, and was held the Massachusetts General Hospital this year in November and December. The programs were sponsored at no charge by the Massachusetts Department of Public Health, (MDPH), Poison Control Center of MA and RI, and the Northeast Branch-ASM.

Faculty included Michael Feeney, RPh, JD, CHO, Director, Indoor Air Quality Program, Bureau of Environmental Health, MDPH; Jennifer Jenner, PhD, Coordinator, Chemical Threat Response Laboratory, William A. Hinton State Laboratory Institute, MDPH, and Nicole Clark, MS, Assistant Coordinator, Chemical Threat Response Laboratory, William A. Hinton State Laboratory Institute, MDPH.

**They're Out There…Are You Prepared? Agents of Bioterrorism: Sentinel Laboratory Training

This annual training program at the William Hinton State Laboratory Institute was designed to provide timely information to help clinical laboratorians understand their role in the Laboratory Response Network as they rule-out organisms and serve as sentinels for persons

who may fall ill due to a bioterrorist event. It provided an overview of the clinical laboratory's role in the presumptive identification of primary agents of bioterrorism using laboratory demonstrations and hands-on learning exercises; safety implications were emphasized. The program was held in March, May, September and November at no charge.

State Laboratory faculty included Deborah Carter, MT(ASCP), LRN Laboratory Coordinator, Bioterrorism Response Laboratory; Cheryl Gauthier, MT(ASCP), Director, Bioterrorism Response Laboratory; Sandra Smole, PhD, Director, Division of Molecular Diagnostics and Virology; and Tanya Swanson, BS, MT, Supervisor, Bioterrorism Response Laboratory.

**Biosafety and Biosecurity: Minimizing the Risks in the Laboratory

This training program was held in February and the biosafety sessions were designed to identify key concerns of laboratory biosafety, focusing on biosafety level 3 (BSL3) practices in a BSL2 environment, proper use of personal protection equipment (PPE), biological safety cabinets (BSCs), and conducting risk assessments. The biosecurity session presented laboratory security principles described in the 5th edition of Biosafety in Microbiological Laboratories. Participants also learned how to conduct vulnerability assessments and develop a good biosecurity plan.

Faculty included Deborah Carter, MT(ASCP), LRN Laboratory Coordinator, Bioterrorism Response Laboratory and Tanya Swanson, BS, MT, Supervisor, Bioterrorism Response Laboratory. Both are from the William Hinton State Laboratory Institute, MDPH, Jamaica Plain, MA.

**Packaging and Shipping Division 6.2 Hazardous Materials

This intermediate-level, one-day program was held in April, June and July. A comprehensive overview of regulations applicable to packaging and shipping laboratory specimens was provided. Lectures, demonstrations, and group exercises were used to provide instruction on complying with international, federal, and local transportation regulations. The program was taught by Deborah Carter, MT(ASCP), LRN Laboratory Co-ordinator, William Hinton State Laboratory Institute, MDPH, Jamaica Plain, MA.

Babesiosis, Other Tickborne Diseases Are on the Rise

Babesiosis, a tickborne disease in which the parasite *Babesia microti* invades red blood cells, is on the rise in the United States, according to Peter Krause of the Yale School of Public Health in New Haven, Conn. He was one of several investigators who spoke about such illnesses during the 2012 meeting of the American Society of Tropical Medicine and Hygiene (ASTMH), held in Atlanta, Ga., last November. In the United States, the parasite is now the most common pathogen transmitted through blood transfusions, and babesiosis is now considered endemic in Connecticut, Massachusetts, Minnesota, New Jersey, New York, Rhode Island, and Wisconsin. Sporadic cases occur in at least eight other states, from Washington to northern California in the West and from Maine to Maryland in the East.

Meanwhile, infections from deer tick virus are rising rapidly, according to Marc El Khoury of New York Medical College in Valhalla, N.Y. "In Lyme-endemic areas, people can not only get Lyme disease or babesiosis, but also a deer tick virus related meningoencephalitis," he says. Although many of those infections are mild, some progress to encephalitis, leaving permanent damage in 50% and fatalities in about 15% of severe cases. Deer ticks also can transmit human granulocytic anaplasmosis, caused by a bacterial pathogen that attacks white blood cells and whose symptoms resemble those of Rocky Mountain spotted fever, according to J. Stephen Dumler at Johns Hopkins University School of Medicine in Baltimore, MD

From: Microbe-Volume8,No. 2, 2013

Obituaries

FIUMARA, Nicholas J. MD, MPH. died on June 29, 2012 after a long and distinguished public health and medical career at 99 years of age. Dr. Fiumara was a world recognized expert in sexually transmitted diseases, a renowned dermatologist and a visionary leader in public health.

Born and raised in Boston, Dr. Fiumara attended Boston College and graduated from the Boston University School of Medicine in 1939. He joined the Massachusetts Department of Public Health (MDPH) in 1941 as District Health Officer in the Berkshire District. Between June 1943, to July 1946, Dr. Fiumara was on a military leave of absence from the MDPH. He served with the Navy, and held the successive posts of medical officer aboard the U.S.S. Monomoy, venereal-disease control officer in the Caribbean Theater, and commanding officer of Epidemiology Unit 22, which saw service on the West Coast.

Following World War II, he rejoined the MDPH as District Health Officer based in Pittsfield. In 1947, he was appointed director of the Division of Venereal Diseases. In that same year, he received a Masters in Public Health from the Harvard School of Public Health. In 1961, the Division of Venereal Diseases was combined with the Division of Communicable Diseases under Dr. Fiumara's leadership. He held this position, and was the State Epidemiologist for Massachusetts, until his retirement in 1984.

Dr. Fiumara was a preeminent figure in field of sexually transmitted diseases in the second half of the 20th Century, contributing to the understanding of diagnosis and treatment, natural history, changing epidemiology and control of STDs. For many years, he was a consultant in venereal diseases to the United States Public Health Service and a civilian consultant in venereal diseases to the Armed Forces Disciplinary Control Board. In Massachusetts, he set up a system of state-cooperating STD clinics, and frequently attended and taught in these clinics. He was a Clinical Professor of Dermatology at Boston University School of Medicine and also on the faculty of Tufts University School of Medicine and Harvard Medical School. He taught generations of physicians, nurses and other healthcare professionals about STDs. An avid and very gifted photographer, he took thousands of photographs of dermatologic and other clinical findings. His lectures were famous for his captivating and often provocative style, compelling content and graphic illustrations. In 1959, he was elected president of the American Venereal Disease Association, and in 1977, he received the prestigious Thomas Parran Award of what was by then the American Sexually Transmitted Disease Association.

Nicholas Fiumara was also one of the most experienced and skilled clinical dermatologists of his generation. He had seen everything, and seemed to remember all that he had seen. His clinical assessments were always clear and concise, always with a defined diagnosis, and that diagnosis was always in Latin. His kindness and efficiency were always noted by appreciative patients.

COGHLAN, Anne E. Renowned biomedical ethicist and life-long resident of Milton died in her home on June 11, 2012. After graduating from Simmons College in 1948, Dr. Coghlan received a Master of Education in 1953 from Boston University, a Master of Science in 1957 from the University of Vermont and a Ph.D. in 1965 from the University of Rhode Island. Anne returned to her alma mater, Simmons College, to teach where she remained for 35 years as Professor of Biology, Chair of the Biology Department and Dean of Sciences. When Dr. Coghlan retired in 1993, Simmons College established the Anne Coghlan Fund for Student Research in her honor. In 1998, she was awarded an honorary Doctor of Science degree from Simmons College. The following year at its Centennial, Simmons College recognized Dr. Coghlan as one of the ten outstanding teachers of the century. Dr. Coghlan epitomized civic commitment through her continuous service to the Town of Milton and its school system. The Town of Milton honored Dr. Coghlan by naming her Town Club Citizen of the Year in 1992 and by naming the high school science wing for her in 1996.

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