January 2011

SCIENCE FOR THE BENEFIT OF HUMANITY

Center for Clinical and Translational Science
e-NEWSLETTER

Center News

Hospital Centennial Campaign Dinner Raises More than $34 Million for Translational Research

By Diane Bonds

A year of activities and initiatives focusing on the 100th anniversary of The Rockefeller University Hospital included a black-tie dinner-dance on October 7 that brought nearly 350 benefactors and friends to The Rockefeller University campus, including Mayor Michael Bloomberg. The event celebrated 100 years of remarkable biomedical advances and honored the physician-scientists and staff of the Rockefeller University Hospital.

A fundraising initiative launched in conjunction with the Centennial raised more than $34 million to support clinical and patient-oriented research at the Hospital. Twenty-three million dollars of this sum was raised in the six months before the Centennial dinner. According to Chairman of the Board Russell L. Carson, "The generosity of so many University friends is truly extraordinary, and will ensure a bright future for the Hospital as it enters its second century."

At the dinner, Mayor Bloomberg read a proclamation recognizing the Hospital's historic importance and accomplishments—and naming October 7, 2010 "The Rockefeller University Hospital Day in New York." In addition, Physician-in-Chief Barry Coller accepted a gift from the University's Trustees honoring the Hospital's physician-scientists and staff—an 1892 first edition of The Principles and Practice of Medicine by Sir William Osler. Dr. Coller explained that this classic medical text played a key role in Hospital's founding, convincing John D. Rockefeller's philanthropic advisor, Reverend Frederick Gates, that an institute dedicated to the scientific study of disease should be established in the United States.

In summarizing the role of The Rockefeller University Hospital in the advance of the medical science, Dr. Coller noted, "Over the last 100 years, the application of the scientific method

Mayor Michael Bloomberg and President Nurse

to medicine increased average human life expectancy by almost 30 years – from under 50 years to nearly 80 years of age. This 30 years of increased life is about twice as much as was gained in the entire preceding 200,000 years of human life on earth, nearly all of which was lived in the pre-scientific era…A remarkable number of the important discoveries that contributed to this singular achievement were made at this very small institution, reflecting an absolute core commitment to excellence. Tonight we rededicate

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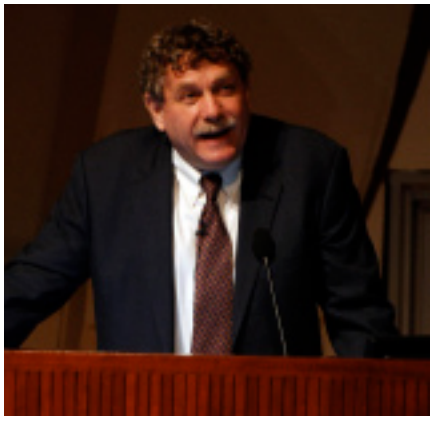
Dr. Eric Lander, Keynote Speaker at Scientific Symposium Celebrating Hospital Centennial

By Joseph Bonner

On Friday, October 29, The Rockefeller University Hospital Centennial culminated with a daylong scientific symposium that highlighted the accomplishments of the physician-scientists who launched the field of translational research, and those who continue to make important discoveries.

Dr. Barry Coller, physician-in-chief of The Rockefeller University Hospital, began the symposium with a presentation entitled "In the Beginning: Rufus Cole's Vision of the University-based Physician Scientist." Dr. Daniel Rosenblum, Program Officer for the Clinical and Translational Science Awards program at the National Center for Research Resources, discussed "Clinical and Translational Science and the Transformation of Rockefeller University in Its 2nd Century." Dr. Rosenblum is the NIH Program Officer for Rockefeller's Clinical and Translational Science Award (CTSA).

After the historical groundwork had been laid, Dr. Eric Lander, Director of the Broad Institute of MIT and Harvard, delivered a riveting talk on what we have learned from the Human Genome Project and what lies ahead in applying the data and remarkable new technology to achieving



Dr. Eric Lander

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Hospital Staff Celebrate Centennial with Reception and Art Lecture

By Melissa Offenhartz

On October 18th, the contributions of the Rockefeller University Hospital staff were celebrated with a reception in Welch Hall, followed by a lecture in the Abby Dining Room presented by Dr. Sylvia Yount, Chief Curator and Cochrane Curator of American Art at the Virginia Museum of Fine Arts. Homage to the past was reflected in the beautiful setting of the Welch Hall library, which served as the backdrop for an elegant afternoon tea at which the Edwardian-era founders and staff of the Hospital would have been at home.

President Nurse joins the Senior Staff Leadership of the Rockefeller University Hospital in celebrating the Hospital's Centennial

Remarks were made by The Rockefeller University President Dr. Paul Nurse, RUH Physician-in Chief Dr. Barry Coller, RUH CEO Dr. James Krueger, and Director of Nursing Melissa Offenhartz, each of whom lauded all members of the Hospital staff for the essential roles they play in helping to achieve the scientific mission of the University through translational research involving human subjects. These roles are often not visible to the larger scientific community, but are key to ensuring that high quality data are collected in accordance with regulatory requirements, and that research participants receive safe, expert care while enrolled in

Rockefeller University protocols. A short documentary video produced especially for the Hospital centennial movingly illustrated the history and importance of Rockefeller University Hospital in achieving some of the scientific and medical milestones of the past century, and highlighted current areas of research.

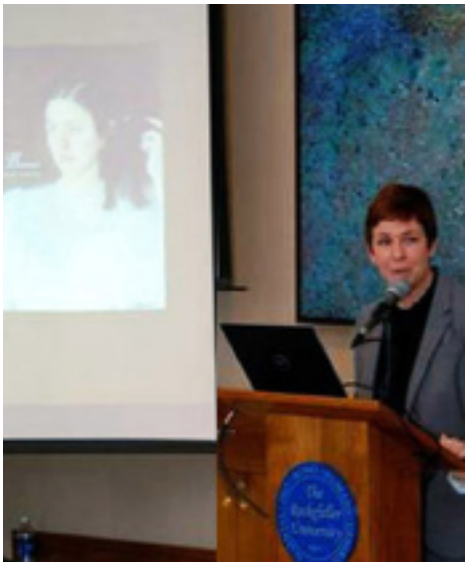
Posters of a number of the "Discoveries Advancing Medicine" vignettes were on display around the room, so guests were able to read them as they sipped tea, nibbled tea sandwiches and scones, and listened to the music of Irving Berlin played by a jazz trio. Dr. Coller presented Dr. Nurse with one of The Rockefeller University Hospital Centennial Commemorative Medals, as well as a specially designed Rufus Cole t-shirt, featuring the Cecilia Beaux portrait of Cole that hangs in the Hospital vestibule on the front, and "RUFUS" on the back.

Dr. Coller also turned over possession of a first edition printing of Dr. William Osler's 1892 classic textbook, "The Principles and Practice of Medicine," that The Rockefeller University's Board of Trustees presented to the Hospital faculty and staff as a Centennial gift. Olga Nilova, Special Collections and Exhibits Librarian, added the book to one of the Library displays she recently created with photographs and objects highlighting the Hospital's centennial. The reception was concluded with the cutting of a specially designed Hospital Centennial cake – a remarkably true-to-life replica of the iconic Hospital portico and façade.

Following the reception, Dr. Sylvia Yount presented a talk entitled "Falling in With Humanity: Portraiture and Science at Rockefeller and Beyond". Dr. Yount, who in 2007 organized a critical retrospective of the work of Cecilia Beaux, masterfully brought to life the relationships of Beaux with other great portrait artists of the turn-of-the-century. She also described their ties to the Rockefeller family and to this institution, and the surprising revelation that the inventor of the iron lung respirator, Philip Drinker, was Beaux's nephew.

A good and memorable time was had by all!

The 1937 Portrait of Rufus Cole, M.D. by Cecilia Beaux
Dr. Cole was the first Director of the Hospital of The Rockefeller Institute for Medical Research



Dr. Sylvia Yount describes another one of Cecilia Beaux's portraits

Recent Clinical Scholar Graduate Neil Renwick Receives K08 Grant

By Michelle Romanick

Dr. Neil Renwick, former Chief Clinical Scholar, recently received an NIH funded Mentored Clinical Scientist Research Career Development Award (K08). The K08 award provides five years of salary support, as well as funds for research-related costs, for an intensive, supervised research career development experience in translational research.

Dr. Renwick's project is entitled 'Post-transcriptional Regulation of Gene Expression in Major Triplet Associated Repeat DNA-Binding Protein (TDP)-43 Diseases.' His mentor is Dr. Thomas Tuschl, a pioneer in post-transciptional regulation of gene expression and Head of the Laboratory of RNA Molecular Biology. Dr. Renwick's K08 Advisory Committee includes Dr. Magda Konarska in the Laboratory of Molecular Biology and Biochemistry, Dr. Michel Nussenzweig in the Laboratory of Molecular Immunology at The Rockefeller University, and Dr. Howard Fillit, Executive Director of The Alzheimer's Drug Discovery Foundation.

Dr. Renwick will be receiving training in neurogenetics, pathology of neurodegenerative diseases, and 21st century brain banking from Dr. Lev Goldfarb, Head of Clinical Neurogenetics Unit, NINDS, NIH, Dr. Jean Paul Vonsattel, Director of The New York Brain Bank at Columbia University Medical Center, and Dr. John Trojanowski, a pioneer in the association between TDP-43 and neurodegenerative diseases.

The main focus of Dr. Renwick's research is the investigation of the major diseases associated with dysregulation of TDP-43. These include Frontotemporal Dementia and Amyotrophic Lateral Sclerosis (Lou Gehrig's Disease). Dr. Renwich's study will identify RNA targets and examine RNA regulatory functions of normal and mutant forms of TDP-43, assess miRNA regulatory networks in major TDP-43 disease tissues, and estimate sequence variation in TDP-43 regulated genes. The goal of the research is to determine the role of TDP-43 in physiological and pathological processes.

As a component of his research, Dr. Renwick is designing a diagnostic platform consisting of barcoded small RNA sequencing and multicolor miRNA in situ hybrization to look for disease-related miRNA biomarkers. "This diagnostic platform could be applied to any disease and not just TDP-43 diseases, so it is an enabling technology. " Ultimately, Dr. Renwick wants to set up a "Laboratory of RNA regulations and Human Genetics" to identify and study diseases that are caused by defective post-transcriptional regulation of gene expression and develop novel therapeutic approaches to treat these devastating disorders.

Hospital Centennial Campaign Raises More than $34 Million for Translational Research

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ourselves to the new challenges that lie ahead: bringing the medical benefits of science to all people, worldwide; continuing to push the limits of human life expectancy; and ensuring that the extra years of life we have fought so hard to attain are vibrant ones, because they are lived in good health."

Many materials produced for the Centennial will continue to broaden public knowledge of the Hospital's mission and accomplishments. These include a brief video on the Hospital that will eventually be featured on the website; a new brochure on the Hospital; and an essay by Dr. Jules Hirsch on the history of the Hospital.

In addition, more than 100 vignettes focusing on key discoveries made by Rockefeller physician-scientists are available on the Hospital website as part of the Centennial celebration. According to Trustee Marnie Pillsbury, the Centennial initiatives increased awareness that the University has an extraordinary center for patient-oriented and translational research for the University's benefactors and friends, as well as members of the broader public.

Dr. Eric Lander, Keynote Speaker at Scientific Symposium Celebrating Hospital Centennial

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remarkable new technology to achieving personalized medicine.

Dr. Jean-Laurent Casanova, Head of the St. Giles Laboratory of Human Genetics of Infectious Diseases at Rockefeller, discussed his research on the genetics of infectious diseases in children, including his elucidation of previously unrecognized pathways of host immunity in different cell types.

Dr. J. Donald Capra, president emeritus of the Oklahoma Medical Research Foundation, discussed human monoclonal antibodies and their role in the immune response to vaccines in a special session dedicated to the legacy of the late Dr. Henry Kunkel.

Dr. Leslie Vosshall, head of the Laboratory of Neurogenetics and Behavior at Rockefeller, discussed her lab's pioneering research on the genetics of olfaction in humans, including the discovery of specific genetic defects that affect the ability to smell a certain male hormone odor.

Purnell Choppin, a distinguished virologist who is professor emeritus at Rockefeller and president emeritus of the Howard Hughes Medical Institute, gave a special introduction prior to the symposium's final lecture by Dr. Charles M. Rice, Head of the Laboratory of Virology and Infectious Disease at Rockefeller. Dr. Rice gave an update on his lab's comprehensive and groundbreaking research on the pathogenesis of hepatitis C, including exciting new potential therapeutic targets.

After the symposium, which concluded the Hospital's Centennial Celebration, the speakers and attendees enjoyed a reception where undoubtedly new ideas and collaborations were discussed that will fuel the Hospital's next 100 years of discoveries advancing medicine!

CCTS Community Engagement Initiatives Foster Many New Bidirectional Collaborations for Research and Education

By Bernice B. Rumala and Rhonda G. Kost

One of the aims of the Rockefeller CCTS Community Engagement key function is to improve human health by fostering meaningful bidirectional research collaborations between scientists conducting mechanistic studies and communities, community partners, and public health researchers. To facilitate achieving this goal, the Action Committee for Community Engaged Research (ACCER) recently held a meeting with several prominent faculty members from the CUNY School of Public Health to explore points of intersecting interests. In September, Dr. Kenneth Olden, the Founding and Acting Dean of the school, invited Lorna Thorpe, PhD, MPH and Tom Matte, MD, MPH to meet with the members of ACCER. Dr. Thorpe previously conducted public health research in numerous settings, including the Centers for Disease Control and the Department of Health for the City of New York, at Columbia University. Her research focuses on longitudinal assessment of health related issues in public housing residents. On December 1, 2010, Dr. Thorpe presented her extremely interesting studies and her plans for the future in the Rockefeller Clinical Research Seminar series. After her presentation she discussed her career and scientific interests during an informal lunch with members of the Clinical Scholars Program.

Dr. Thomas Matte is Director of Environmental Research at the Bureau of Environmental Surveillance and Policy at the New York City Department of Health and Mental Hygiene, and a faculty member at the School of Public Health. Dr. Matte studies the impact of environmental factors, such as air pollution, on the health of New Yorkers; he played an important role in the NYC Community Air Survey. He will speak on his work in April 2011 as part of the seminar series.

The ACCER also met with CUNY faculty member Dr. Mary Schooling, who models the impact of economic growth on changing patterns of chronic disease, and NYU faculty member Beverly Xavier-Watkins who has worked to empower minority communities across the city. In October 2010 the ACCER met with Dr. Steffi Woolhandler and Dr. Mike Himmelstein – both recently translocated to CUNY from Harvard University—who have studied extensively the impact of health policy and access to healthcare on health disparities. Their nationally recognized research on the role of health care costs on personal bankruptcy filings had a major impact on Congress's and the President's health care policies and legislation.

ACCER-facilitated meetings in the previous year have already resulted in the development of numerous collaborations. Dr. Alexander Tomasz and Dr. Jonathan Tobin, President of Clinical Directors Network (CDN) have collaborated to examine the incidence, molecular fingerprint, and transmission patterns of MRSA in local community health centers. This work is supported in part through funds from the CCTS. Recently, a complementary project emerged involving Clinical Scholar Dr. Mina Pastiagia from the laboratory of Vincent Fischetti. Dr. Pastagia's laboratory work involves the development and testing of novel therapeutic agents with activity against MRSA. In December 2010, Drs Tobin, Pastagia, and Tomasz, and seven representatives from six CDN-affiliated community health centers met at Rockefeller and enthusiastically agreed to establish a community-based surveillance network for community associated Methicillin-resistant Staphylococcus aureus (MRSA) infection.

As part of the CCTS Community Engagement educational program, a Community engagement Education Series was initiated in January 2010 with a series of sessions for research staff during weekly Interdisciplinary Rounds. Since the spring, a comprehensive Community Engagement curriculum has been offered as a monthly lecture series open to all CCTS research teams and staff. The lectures are led by CCTS Community Engagement Specialist Bernice B. Rumala, M.A., Ed.M, and have included viewing excerpts from the acclaimed video series, Unnatural Causes to stimulate discussions of health disparities. Other sessions have focused on roundtable discussions of how to best educate the public about scientific discoveries, enhancing health literacy, and ethical perspectives on data ownership of communities' health information. The Community Engagement Education Series is offered on the second Tuesday of every month.

To foster bilateral engagement of community practitioners with academic researchers, the CCTS and CDN collaborate to educate clinicians about translational and community engaged research. In May 2010, Dr. Tobin and Dr. Kost, Clinical Research Officer at the CCTS, summarized some of the successes of this program in a poster presentation at the national CTSA Community Engagement Key Function Committee meeting in Bethesda, MD. The poster, "Using Web-based Distance Learning as a Bridge to Engage Academic Researchers and Community-based Primary Care Clinicians in Collaborative Translational Research," described the role and outcomes of engaging academic researchers in presenting clinician-oriented lectures in the area of their research. The lectures are disseminated to community health center staff and other interested clinicians nation-wide through a live webcast and a free online webcast library hosted by CDN. Webcast lectures are attended by a wide variety of clinicians, many of whom are nurses. To insure bidirectional communication, Web-attendees provide valuable feedback via the internet on their educational needs and the best methods to educate practitioners about translational research. Preliminary data suggest that by producing a webcast lecture, researchers enhance the likelihood that they will participate in meaningful community engaged collaboration.

In August 2010, CCTS staff representing the Community Engagement core (Bernice Rumala) and Clinical Research Recruitment Outreach Support Services (CRROSS) (Caroline Melendez and Stefanie Tignor) collaborated with the Bionutrition Department (Director, Andrea Ronning and staff, Diane Meehan and Dacia Vasquez) and Research Nursing (Director, Melissa Offenhartz) on two highly visible community activities. The first was a Senior Health Fair in Harlem and the other was the American Diabetes Association Health Fair in the Bronx. These day-long events gave community members a chance to discuss their health needs, and provided an opportunity for CCTS and others to give health education to attendees. Rockefeller CCTS participation also raised community visibility for its translational research program.

For more information about CCTS Community Engagement initiatives, please contact Bernice B. Rumala at brumala@rockefeller.edu

Enriching the Pipeline of Young Scientists with Science Outreach Day

By Bernice B. Rumala

The Rockefeller University Center for Clinical and Translational Science (CCTS) hosted the second Science Outreach Day initiative on November 5th, 2010. Bernice B. Rumala, Community Engagement Specialist collaborated with Ted Scovell, Director of Science Outreach Office on this new initiative to: 1) Tailor each outreach according to the specific needs of the school; 2) Serve as an information pipeline; 3) Inform students of research opportunities at The Rockefeller University and other institutions; 4) Connect students with mentors and 5) Emphasize the importance of science and science literacy regardless of a student's career trajectory.

The first Rockefeller University Science Outreach Day was conducted in May 2010, in alignment with a nation-wide program called National Lab Day, to connect high schools serving predominantly underrepresented minority and disadvantaged students with scientists and mentors. The May program served as a pipeline to new science careers: 4 of the 36 students who participated in the May program went on to participate in The Rockefeller University Summer Neuroscience Program. The success of the first program led to an expansion of the initiative and an ongoing series of Rockefeller University hosted Science Outreach Days.

On November 5th, 2010, a group of 45 students and their teacher, Mr. Tom Zavrel from the Urban Assembly School for Applied Mathematics and Science, Bronx, NY participated in the second Science Outreach Day. Dr. Barry Coller, Physician-in-Chief and Head of the Laboratory of Blood and Vascular Biology welcomed the students, shared a brief history of the University, and described his career path to translational science. Ms. Rumala shared mentoring advice with the students. Shai Shaham, Ph.D., Head of Laboratory of Developmental Genetics described his work on the genetics of earthworm C. elegans, and then students used human genetics biokits to test a genetic trait of their own. Mr. Scovell gave an engaging research demonstration on temperature to the students. A scientist career training panel consisting of PhD, MD/PhD, and postdoctoral trainees provided the students with insights on different paths to a science career. More than 20 volunteers from The Rockefeller University community participated as mentors, laboratory tour guides, and research presenters. One volunteer commented, "Judging from the excitement of my group, I think you… helped them to imagine a future in science". A third Science Outreach Day is in the planning stages for early 2011.

Further information about Science Outreach Day can be found at the Science Outreach website.

Participants and volunteers celebrate Science Outreach Day

Meet the Scholar: Mina Pastagia, M.D.

By Michelle Romanick

Mina Pastagia, M.D.

Dr. Mina Pastagia has been a Clinical Scholar at Rockefeller University in Dr. Vincent Fischetti's laboratory since 2008. She works with a novel bacteriophage-derived enzyme called the ClyS lysin, which specifically kills Staphylococcus aureus, including difficult to treat methicillin-resistant (MRSA) strains. Prior to becoming a Clinical Scholar she obtained her undergraduate degree in pharmacology from St. John's University in New York and her MD from SUNY Downstate in Brooklyn, NY. She went on for additional training in Internal Medicine at Boston University and returned to her beloved New York City to complete a fellowship in Infectious Diseases at Mount Sinai Medical Center. It was at Mount Sinai that she developed a strong interest in MRSA infections after being inundated by patients who either experienced multiple MRSA recurrences or succumbed to MRSA infection. This clinical problem prompted her to develop a laboratory-based and clinically-based research project in collaboration with the Chief of Microbiology, Dr. Stephen G. Jenkins and the Vice Chair of Health Care Policy, Dr. Lawrence C. Kleinman. They retrospectively evaluated the medical records of adult hospitalized patients with MRSA bacteremia over a five year period and determined whether the patients were infected with a vancomycin intermediate (VISA) or heteroresistant (hVISA) strain. They also assessed whether the MRSA strain or specific clinical manifestations correlated with mortality. This rigorous exposure to the epidemiology of MRSA bacteremia led Dr. Pastagia to focus her research on prevention of MRSA infections.

In Dr. Fischetti's laboratory, Dr. Pastagia has combined her clinical interests in pharmacology and infectious diseases, working in collaboration with Dr. James Krueger to develop a clinically effective and safe formulation of the ClyS lysin as a topical ointment. Since joining the program, she has been an investigator of a Center for Clinical and Translational Science Pilot Project grant. As part of her studies, she has developed a reproducible mouse skin models, demonstrated that ClyS is efficacious in this model, and developed assays for MRSA resistance and immunogenicity. Her goal is to obtain investigational new drug (IND) status for the lysin ointment from the FDA so that can it be evaluated in a Phase I clinical study as a skin decolonizing agent.

When asked to describe her experience in the Clinical Scholars program at Rockefeller University Dr. Pastagia said, "The tone at Rockefeller is one that is very conducive to producing high quality research using creative approaches to solve basic clinical problems. Rockefeller feels like a safe haven where the research of a Nobel Laureate is supported with the same vigor as the research of a young investigator. I am fortunate to be enrolled in the Clinical Scholars program, where I can learn the correct way of conducting translational research. And I get to work with MRSA—what more can a girl ask for?

Integrated Research Information System (iRIS) Update

By Donna Brassil

As an iRIS user, have you noticed anything different in the last 2 months?

The latest release of the iRIS software, 8.02, was launched in late August with exciting new additions such as a tool that identifies who was the last study team member to modify an application during study development. This tracking function is particularly valuable when more then one person on a study team is adding elements to an application.

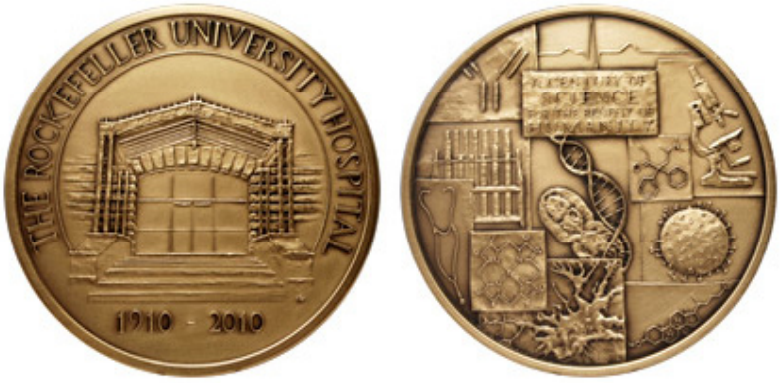
The Progress Report tool is another valuable new addition, especially since producing a progress report is a fundamental part of every Continuing Review. The essential elements of the progress report will be pre-populated for those iRIS users who maintain study and subject management in real time, including the number of subjects screened and enrolled; gender, race and ethnicity data; and protocol deviations, adverse events, and amendments. This is a tremendous timesaver for study team members that normally collect these data by a variety of labor-intensive manual methods.

Members of our IT staff who have used the new release also report that the latest version of the iRIS platform has more stable scheduling capabilities, more flexible reporting, improved data integrity, and fewer reported issues amongst users. This is good news, indeed!

If you have any questions or need assistance navigating iRIS, please contact Ross Gillman (212) 327-8930; Ummey Johra (212) 327- 7877; Cameron Coffran (212) 327-7465; or Donna Brassil (212) 327-7886.

RUH Centennial Medal

By Barry Coller



The Rockefeller University Hospital Centennial Medal commemorates the scientific and medical advances that have come from Rockefeller faculty in the past 100 years. The obverse depicts the iconic entrance to the Hospital, which first opened its doors to patients on October 26, 1910, and the reverse contains images of select areas of inquiry and discovery by Rockefeller faculty that have had a major impact on human health. These images include DNA being released from an S. pneumoniae diplococcus (the cause of pneumococcal pneumonia), the HIV-1 virus, a dendritic cell, and the structures of cholesterol, heme, and methadone, in addition to an electrocardiogram (ECG) trace and the more general images of test tubes, a stethoscope, and a microscope.

Discoveries Advancing Medicine Vignette

Discovering the First Cancer-Causing Virus

By Elizabeth (Betsy) Hanson

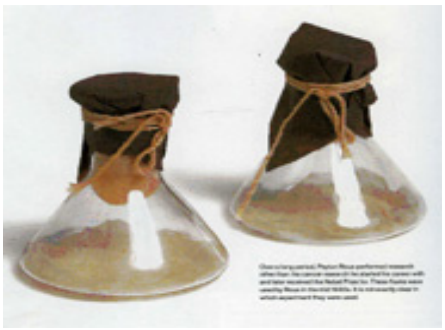
In 1911 Peyton Rous (1879-1970) made the startling discovery that a virus could cause cancer. A farmer had brought him a hen with a large lump in her breast. Rous, a pathologist, diagnosed the lump as a sarcoma—a tumor of cells in the connective tissue. He first tested whether the tumor could be transplanted into chickens closely related to the original one. It could, and with each passing, the tumor became more aggressive. To find out whether an infectious agent caused the cancer, Rous prepared an extract—he minced a sample of the tumor tissue in saline solution and passed this through a filter to eliminate bacteria and tumor cells. Then he injected the extract into healthy chickens. Contrary to his expectations, it produced new tumors!

Describing these experiments, Rous suggested that the tumor-inducing agent was "a minute parasitic organism"—a virus. At the time Rous did this research, however, viruses were poorly understood and the causes of cancer were even more mysterious. It was more than 50 years later, in 1966, that the significance of Rous's discovery was recognized with a Nobel Prize.

The assertion that a virus could induce tumors was so controversial that, after a few more studies, Rous abandoned cancer research until the 1930s, when his colleague at the Rockefeller Institute,

Rous, Peyton
Courtesy of the Rockefeller Archive Center

Richard Shope, discovered another tumor caused by a virus—a papilloma, or wart, found in rabbits. Rous returned to studying cancer, keeping alive the viral theory of cancer causation. Only in the 1950s was the so-called Rous sarcoma virus widely adopted as a tool, because—unlike chemicals or radiation—it reliably and reproducibly induced tumors. In the 1960s a gene called src was identified as producing the protein that leads to tumors. Decades after Rous's original



These flasks were used by Rous in mid 1930s

description, the Rous sarcoma virus, now known to be a retrovirus, remains important in research.

Peyton Rous received the BA from The Johns Hopkins University in 1900, and the MD from that university's Medical School in 1905. After teaching pathology at the University of Michigan, he joined the Rockefeller Institute in 1909, becoming a full member (professor) in 1930. He remained at Rockefeller his entire career. Among dozens of awards and honorary degrees, he received the National Medal of Science (1965), the Lasker Award (1958), and the Nobel Prize (1966). He served as editor of the Journal of Experimental Medicine.