



Photo by Terry Dagradi

YCCI RECEIVES CTSA RENEWAL IN CONTINUED SUPPORT OF CLINICAL AND TRANSLATIONAL RESEARCH

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The Yale Center for Clinical Investigation (YCCI) has been awarded \$45.4 million from the National Institutes of Health to renew its five-year Clinical and Translational Science Award (CTSA) in support of clinical and translational research.

One of the first 12 institutions awarded a CTSA in 2006, YCCI helped pioneer the program. It is among 10 of the original 12 centers to receive a renewal of the grant this year. "I'm delighted that the NIH has once again put its faith in Yale science and medicine," said Robert J. Alpern, MD, Dean of the School of Medicine. "I'm especially pleased at the ways in which YCCI and the CTSA have brought together our community of translational researchers, presenting wider opportunities throughout their career development and providing core support that ensures their success." For more information on YCCI's T3 translational research core, visit <http://ycci.yale.edu/community/index.aspx>.

YCCI remains a work in progress but has made tremendous strides toward fulfilling its goals of providing robust infrastructure for clinical and translational research and educating the next generation of investigators.

Substantial support has come from the School of Medicine in addition to the CTSA. **Highlights of the first five years include:**

- The Scholars program, which provides training and salary support for junior faculty members, postdoctoral fellows and KL2 awardees committed to careers in clinical or translational research. The 63 Scholars who have received awards thus far have received more than \$50 million in independent grant funding.
- The Office of Research Services (ORS), which has created "one-stop shopping" infrastructure to support clinical and translational research.
- The creation of the Yale Center for Analytical Sciences (YCAS) in partnership with the Yale Cancer Center and the School of Public Health to provide comprehensive biostatistical support for investigators.
- Substantial investment in state-of-the-art core technologies on the medical and West Campuses to carry out transformative science and advance the knowledge of basic biology and human disease.
- The purchase and implementation of OnCore, a totally integrated research management system that connects all research data, regulatory support and reporting on a new level.

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Director's Corner

We've successfully navigated the renewal process for the second round of funding of the Clinical and Translational Science Award, and I'm very proud of what we've accomplished during our first five years.

I'm pleased by the enthusiasm demonstrated by my colleagues across the medical campus as well as the level of financial and programmatic support we continue to receive from Yale-New Haven Hospital and the School of Medicine. Dean Alpern has made exceptional contributions that include actively recruiting outstanding faculty members, expanding research infrastructure, developing new translational programs, and providing funding for our programs and core research resources. His support has played a major role in our achievements so far. Our collective efforts are paying off; almost \$200 million per year of Yale's NIH grant support is now directly connected to ycci.

I'm confident that the next five years will bring as many exciting changes as we've seen during the first grant cycle. As Yale's clinical and translational research community – along with the number of research studies it conducts continues to grow, we'll build on our experience to increase support for the programs that have been successful and develop new ones to meet increased demands. Our expanded leadership team and Yale's new IT infrastructure will help us make great strides in translating scientific discoveries into treatments that will benefit patients. Thanks to the hard work and spirit of collaboration we've encountered across the board, I believe we are now positioned to be the engine driving innovative clinical and translational research at Yale. I look forward to the next five years.

Robert Sherwin, MD
YCCI Director



Funding for Research Projects

ycci offers several funding awards for investigators: see page 11 for details.

EXPANDED LEADERSHIP AND NEW STRUCTURE

YCCI is constantly refining its programs and services to better support the needs of investigators. One of the ways of accomplishing this task has been to appoint key faculty leaders to move initiatives forward. This effort has included expansion of the leadership team to create a new structure to guide research more effectively.

Renewing the CTSA grant offered an opportunity to take stock of Yale's strengths, which include basic science and the interdisciplinary nature of our programs. Last year, **Kevan Herold, MD**, professor of immunobiology and medicine and a member of the Human and Translational Immunology program, was appointed **deputy director for translational research**. His expertise in basic science research makes him an ideal leader for the task of expanding this area of Yale's research portfolio and moving science forward in a new way during the next five years.

More recently, **Rajita Sinha, PhD**, professor of psychiatry and director of the Yale Interdisciplinary Research Consortium on Stress, Self-Control and Addiction, was appointed **deputy director for interdisciplinary research**.

A pioneering researcher in psychiatry – a discipline that lends itself particularly well to interdisciplinary collaborations – Sinha is well qualified to direct Yale's team approach to science, which is especially important given the NIH's increased focus on center-based research.

Herold and Sinha join renowned clinical investigator **William Tamborlane, MD**, professor of pediatrics, in overseeing YCCI's research activities. Tamborlane has done an outstanding job helping to create YCCI and build programs to centralize services. As **deputy director for clinical research**, and director of YCCI's Office of Research Services (ORS), he will focus on reevaluating the center's infrastructure to use resources in supporting all types of research effectively.

To ensure that ORS supports faculty engaged in community-based research, Tamborlane will work closely with **Margaret Grey, DrPH, RN, FAAN**, dean of the Yale School of Nursing, who joined YCCI's leadership team as **director, T3 translational research core**, effective October 1, 2011. Grey's research has focused on the development and efficacy of behavioral interventions that improve metabolic management of diabetes and quality of life, as well as preventing type 2 diabetes in high-risk youth.

In its first five years, YCCI's community-based research and engagement efforts were focused on community outreach. The name change to T3 Translational Research Core reflects the expectation that translational research will have a positive impact on clinical practice in the community. The emphasis in the next five years will be on expanding the program to make it more accessible to faculty engaged in research. Grey's vision includes working with investigators in the Schools of Medicine, Public Health, Nursing and elsewhere in the

Events Calendar

Joint YCCI/Investigative Medicine Program Scholars Research-in-Progress Meetings

All meetings feature presentations from individual scholars. We encourage all faculty and staff to attend. Lunch is provided.

• **November 8, noon to 1:00 pm**
Boyer 206

Neuroimaging the Regulation of Craving in Cocaine Dependence
Presented by Hedy Kober

Cigarette Smoke Exposure and Respiratory Virus Infection Interplay in Lung Diseases
Presented by Charles Dela Cruz

• **November 28, noon to 1:00 pm**
TAC N203

Identifying Metastasis-propagating Cell Lineages in Lung Adenocarcinoma
Presented by Don Nguyen

Macrophage Activation in Ischemic Renal Injury
Presented by Sarah Huen

• **December 13, noon to 1:00 pm**
Boyer 206

Dysregulation of Human Toll-like Receptor Function in Aging
Presented by Alexander Panda

Quantitative Dynamic Cardiac SPECT
Presented by Chi Liu



KEVAN HEROLD, MD
Professor of Immunobiology and Medicine
Deputy Director for Translational Research, YCCI
Member of the Human Translational Immunology Program



RAJITA SINHA, PhD
Professor of Psychiatry
Deputy Director for Interdisciplinary Research, YCCI
Director of the Yale Interdisciplinary Research Consortium on Stress, Self-Control and Addiction



MARGARET GREY, DrPH, RN, FAAN
Dean, Yale School of Nursing
Director, T3 Translational Research Core, YCCI

institution to improve health in local communities by promoting research that supports rapid dissemination, implementation, and sustained use of effective interventions to prevent and treat common health problems. “We intend to bring together scientists from all disciplines with clinicians in our community health centers and community-based practice research networks to expand the ability to adapt innovative approaches to delivery in the community and conduct effectiveness trials to test outcomes,” said Grey. **Lois Sadler, PhD, RN, PNP-BC, FAAN**, professor in the Yale School of Nursing and the Yale Child Study Center will continue to serve as **associate director** of the program. Sadler will be joined by **Rafael Perez-Escamilla PhD**, (YSPH), and **Patrick O’Connor, MD** (YSM) as **associate directors**. For more information on the YCCI’s T₃ translational research core, visit <http://ycci.yale.edu/community/index.aspx>.

The appointment of **Sara Rockwell, PhD**, as **director for program evaluation** in 2008 completed the changes in YCCI’s program leadership. Rockwell, professor of therapeutic radiology, was appointed to this position to take advantage of her overlapping responsibilities as associate dean for scientific affairs for YSM. She leads the assessment of performance and progress for all aspects of YCCI, and is aided in these efforts by input from YCCI’s external scientific advisory board.

“The diverse leadership team we now have in place will play a vital role in helping us more effectively support and expand innovative, interdisciplinary clinical and translational research,” said YCCI Director Robert Sherwin, MD.

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CTSA investments in the latest gene sequencing tools are allowing scientists like Richard Lifton, MD, PhD, (far left) to find rare genetic variants that contribute to disease in ways that were impossible just a few years ago. For example, for a study published in the August 7, 2009, issue of *Cell*, Lifton and Jesse Rinehart, PhD, associate research scientist in genetics, led a team that used innovative quantitative proteomics technologies to show how a protein within most cell membranes maintains normal cell size — a breakthrough that has implications for a variety of diseases including sickle cell anemia.

Events Calendar (cont'd)

Clinical Trials Management Lunch & Learn Series

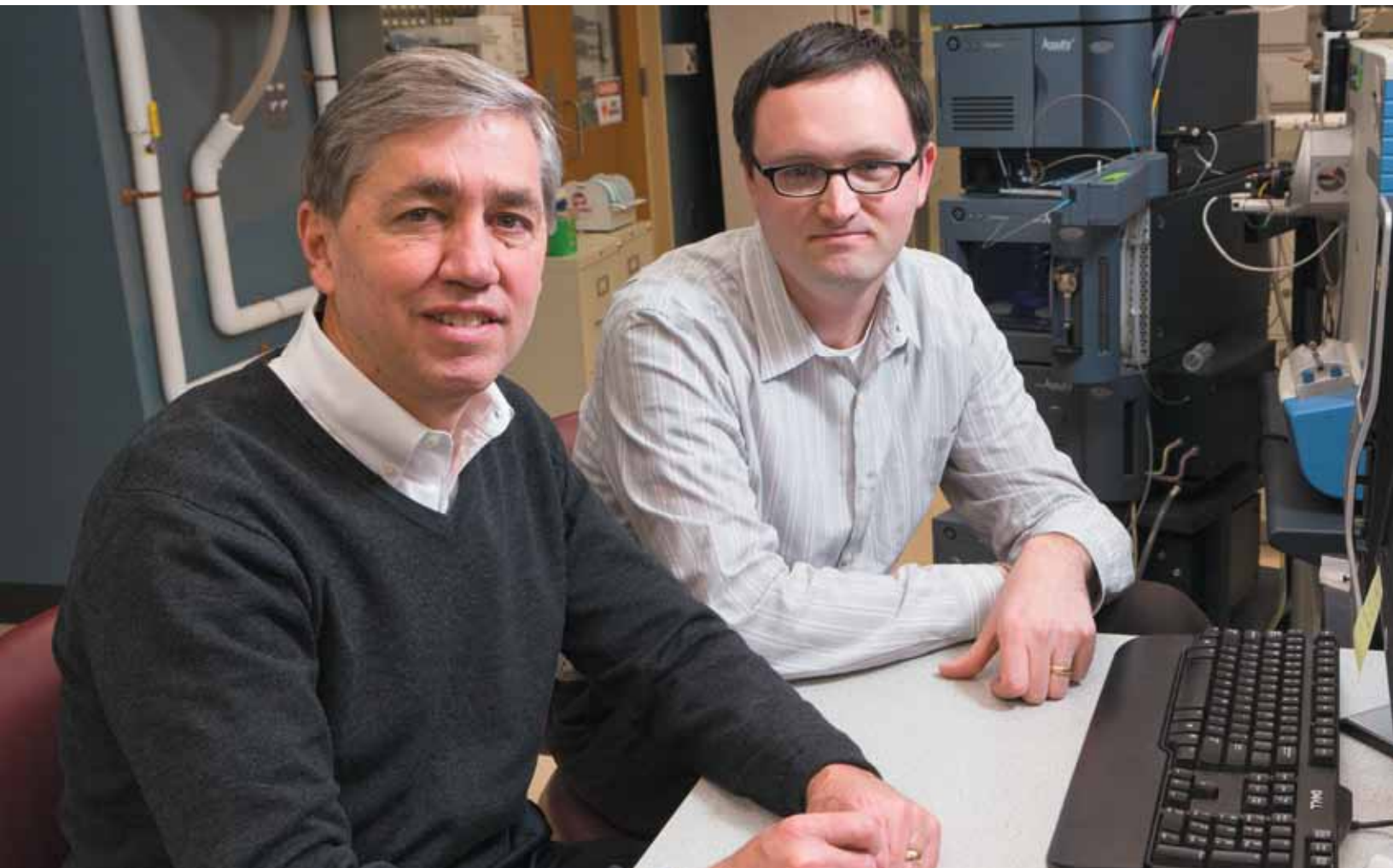
• **November 10, 12:30 p.m.**
SHM-C428

Clinical Trials Billing Audits at Yale: Processes and Findings
Presented by Kathryn Engle, RN

Lunch will be provided. To register, visit <http://www.yale.edu/training>. For more information, contact LaToya Howard at latoya.howard@yale.edu or call 737-3661.



SARA ROCKWELL, PhD
Professor of Therapeutic Radiology
Associate Dean for Scientific Affairs, YSM
Director for Program Evaluation, YCCI



LOOKING AHEAD

The renewal of the CTSA grant coincides with a pivotal time in NIH history. Under the leadership of NIH Director Francis Collins, the CTSA program will be part of the newly created National Center for Advancing Translational Sciences (NCATS). As currently envisioned, NCATS will devise an integrated approach to streamline the process of linking basic research to the development of therapeutics. The new center is intended to fill the gap between advances in scientific understanding of disease that point to promising new targets and the development of new treatments that have been slow to materialize.

YCCI is likewise exploring avenues to widen the net of translational research. Sinha's leadership has the potential to integrate the Schools of Medicine, Public Health and Nursing in creating interdisciplinary science programs in a number of such areas as epigenetics, child health, neuroscience and asthma. YCCI has already taken steps to engage basic scientists under the leadership of Herold as well as through such initiatives as its pilot program. Future areas of focus include creating a steering committee of basic scientists: expanding collaborations with bioengineering; and establishing joint initiatives with such translational centers as the Stem Cell Center.

"I'm very excited about the next five years," said Sherwin. "We have an opportunity to translate Yale's strengths in basic biology into drug discovery and other clinical advances, and we have excellent educational programs for up-and-coming investigators. Our hope is that expanding these initiatives will lead to medical breakthroughs that will improve health." ❁

Kurt Roberts, MD, assistant professor of gastrointestinal surgery, prepares for a procedure in which he will use a device he developed with the help of a CTSA-funded pilot award. The device facilitates single-incision laparoscopic surgery (SILS) and natural orifice transluminal endoscopic surgery (NOTES) to give him easy access to the abdominal cavity.

A Stronger Administrative Infrastructure to Support Investigators

YCCI has also expanded its administrative team in order to provide the expertise investigators need to succeed in today's research landscape. Two newly created positions are being shared with the Yale Cancer Center; they have been filled by two staff members who bring a wealth of expertise to their new roles.

Henry Durivage, PHARM.D, the new **associate director for regulatory affairs and clinical research systems**, now oversees regulatory, IND support, budgeting, compliance with clinical trials.gov, the Medicare Coverage Office and the implementation of OnCore, Yale's new clinical research management system.

Kathleen Uscinski, MBA, CIP, has joined YCCI and the Cancer Center as **associate director of clinical trial operations**. Although her initially focusing is the renewal of the Cancer Center support grant, her responsibilities also include bolstering the infrastructure that supports clinical trials: identifying and implementing procedures that will aid Yale and its investigators; and maintaining reporting requirements.

"Due to the changes in the regulatory environment and reduced budgets, strong administrative leadership is more important now than ever before," said Tesheia Johnson, MBA, MHS, chief operating officer of YCCI. "It's imperative for Yale to institute these changes to support clinical and translational research."



HENRY DURIVAGE, PHARM.D
Associate Director for Regulatory Affairs and Clinical Research Systems, YCCI



KATHLEEN USCINSKI, MBA, CIP
Associate Director of Clinical Trial Operations, YCCI



YCCI STEPS UP EFFORTS TO RECRUIT STUDY VOLUNTEERS

Recruiting volunteers to participate in clinical trials can be one of the most challenging aspects of clinical research. Studies show that only 10 percent of eligible persons participate in clinical trials in the United States, even though more than 70 percent who have participated are likely to do so again.

Recognizing that studies won't get off the ground if they don't meet accrual requirements, YCCI is investing considerable resources to help investigators with patient recruitment. The goal is to move away from an outdated and inadequate model—posting flyers in the community to find study volunteers—in favor of a more sophisticated approach to subject recruitment.

USING THE INTERNET AS A RECRUITMENT TOOL

According to the Boston-based Center for Information & Study on Clinical Research Participation, surveys show that even though 94 percent of the public recognizes that participation in clinical research is very important for advancing medical science, 74 percent say they have no real knowledge of the clinical research process. That's one reason why YCCI revamped the clinical trials website that was created two years ago. The website featured a searchable database that interfaced with clinicaltrials.gov: it allowed participants to search for trials based on disease area, gender, age range, keyword, or investigator. It also allowed volunteers to search for trials seeking healthy subjects—a feature that has already drawn many volunteers. Additional pages on the site answered questions about the nature and requirements of clinical trials and what volunteers should consider when participating in a study, as well as stories about discoveries that took place at Yale thanks to volunteer participation.

About 3,000 volunteers registered on the site, which filled an immediate need to create a central location for patients seeking clinical trials at Yale. YCCI, however, saw an opportunity to create a more patient-friendly site that would also be more productive for investigators. Working with YSM's Web Group, YCCI revamped the site, which went live on September 26.

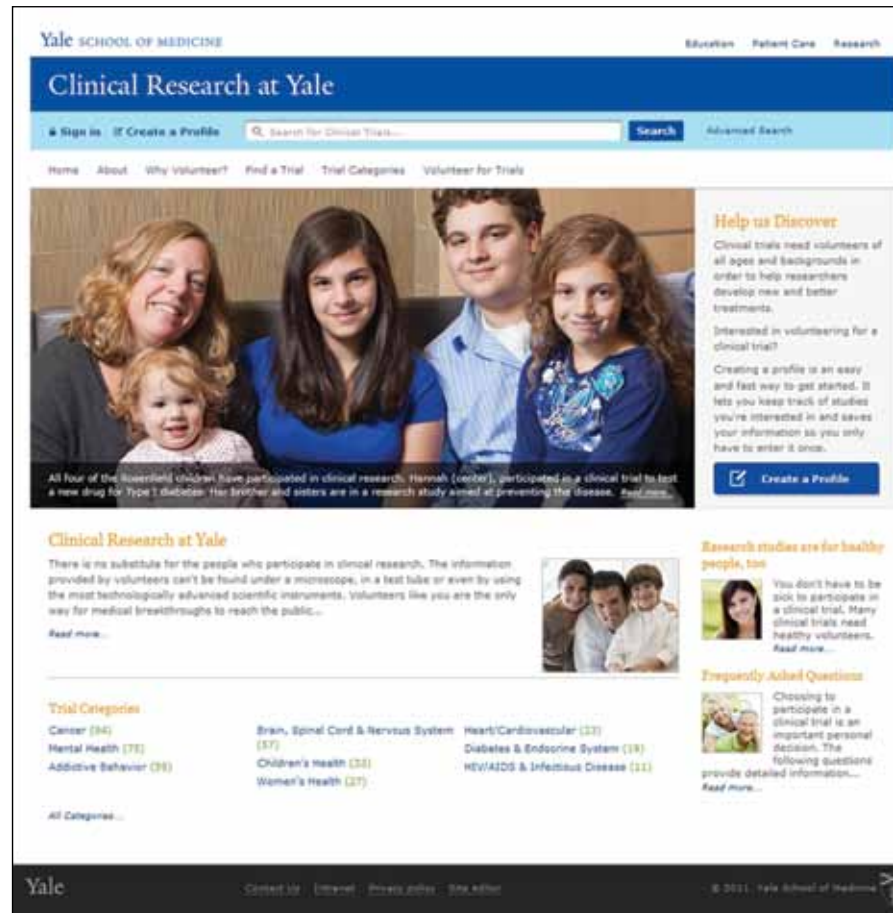
The new site enables volunteers to create a profile that allows them not only to sign up for individual trials but also to keep track of the kinds of studies that interested them. This “shopping cart” functionality has several advantages:

- providing volunteers with greater control over their information
- reducing the number of duplicate records investigators receive
- potentially increasing the accuracy of the information on record

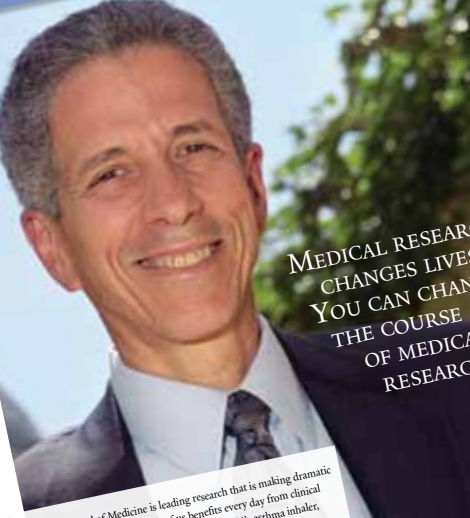
Volunteers are more easily able to compare trials and edit their interests and contact preferences, which will allow YCCI to develop such additional marketing materials as newsletters targeted to specific disease categories and contact mechanism to tell volunteers when a new trial in a particular category is available. The contact mechanism also highlights specific trials on a rotating basis, drawing the user's attention to studies that need volunteers.

“We're trying to create a sense of community around our clinical research activities by letting volunteers know how much Yale has to offer and making it easy and convenient for them to get involved,” said Tesheia Johnson, YCCI's chief operating officer.

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Be part of Clinical Research at Yale.



MEDICAL RESEARCH CHANGES LIVES. YOU CAN CHANGE THE COURSE OF MEDICAL RESEARCH.

The Yale School of Medicine is leading research that is making dramatic advances in health science. Each of us benefits every day from clinical research. Your blood pressure medicine, your child's asthma inhaler, the latest Alzheimer's drug that your mom is taking - all these are available to you because of research studies that show they are safe and effective. None of them would be possible without volunteers willing to take part in research studies. As the Dean of the School of Medicine and a researcher, I can tell you that hundreds of potentially life-saving preventive activities and treatments may never get to those who need them without your help. I urge you to participate in health research. Visit our website, where you can review available trials and build your personal profile. Or call for more information.

Help us discover.

Robert J. Alpert, MD
Dean, Yale School of Medicine
Eliot Professor of Medicine (Nephrology)

Yale

Be part of Clinical Research at Yale.

YOU CAN HELP THOSE WHOSE WORK IS HELPING MILLIONS.



The Yale School of Medicine is leading research that is making dramatic advances in medical science. Each of us benefits every day from clinical research. Your blood pressure medicine, your child's asthma inhaler, the latest Alzheimer's drug that your mom is taking - all these are available to you because of clinical studies that show they are safe and effective. None of them would be possible without volunteers willing to take part in clinical studies. As the chair of the review committee overseeing the ethical aspects of clinical research at Yale, I can tell you that we work hard to make sure that research studies protect their participants as well as possible. I urge you to consider volunteering for a clinical trial. Visit our website, where you can review available trials and build your personal profile. Or call for more information.

Help us discover.

www.yalestudies.org
1-877-y-studies

Yale

Be part of Clinical Research at Yale.



IS ALCOHOL INTERFERING WITH YOUR LIFE?

If you are 18-60 years old, medically stable and currently drinking heavily, you may be eligible to receive free 30-day inpatient alcohol treatment. Treatment is free in return for research participation involving imaging scans (MRI). In addition to free treatment, you can earn up to \$1,650 for participating.

For additional information, please call Beth at 203-937-4788 or visit www.yalestudies.org. HIC # 0301023674, HSS 0034

Help us discover.

Yale

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YCCI STEPS UP EFFORTS TO RECRUIT STUDY VOLUNTEERS *cont'd from page 5*

The new website will be one component of a broader patient portal that present information about health care services and events at Yale in one location. With David J. Leffell, MD, CEO of YMG and deputy dean for clinical affairs for YSM leading the development of the website, it will serve as the new front door for clinical trials at Yale. In addition to information about clinical research, features will include such healthy living initiatives as health screenings, health and wellness programs, and names of speakers available for community events. "Developing medical advances and providing health care are two sides of the same coin," said Leffell. "Reaching out to patients in this way benefits both our research initiatives and the patients we serve."

A MULTI-PHASED MARKETING CAMPAIGN

Overhauling the clinical trials website is the first phase of a multi-phased marketing campaign to attract volunteers to clinical trials at Yale. YCCI has hired a local advertising firm to develop a multimedia umbrella marketing campaign as part of the second phase. The campaign includes a general brochure about clinical trials as well as materials developed for minority populations. It also includes a direct mail component with letters thanking subjects for participating in clinical trials and urging them to visit the newly designed website.

The second phase of the marketing campaign is currently in the planning stages and will use such social media as Facebook and Twitter to reach and maintain contact with volunteers. "The use of social networking for businesses and services is so widespread by now that we would be missing an unprecedented opportunity to reach people if we didn't get on board," said Johnson. "It offers Yale a chance to learn more about potential volunteers and for them to find out more about us."

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Be part of Clinical Research at Yale.

MEDICAL RESEARCH CHANGES LIVES. YOU CAN CHANGE THE COURSE OF MEDICAL RESEARCH.



The Yale School of Medicine is leading research that is making dramatic advances in health science. Each of us benefits every day from clinical research. Your blood pressure medicine, your child's asthma inhaler, the latest Alzheimer's drug that your mom is taking - all these are available to you because of research studies that show they are safe and effective. None of them would be possible without volunteers willing to take part in research studies. As the CEO of Yale's Medically Life-Saving Group as well as a researcher, I can tell you that hundreds of potentially life-saving preventive activities and treatments may never get to those who need them without your help. I urge you to participate in health research. Visit our website, where you can review available trials and build your personal profile. Or call for more information.

Help us discover.

www.yalestudies.org
1-877-y-studies

Yale

David J. Leffell, MD
Deputy Dean for Clinical Affairs
CEO, Yale Medically Life-Saving Group

Be part of Clinical Research at Yale.



HUNDREDS OF FUTURE LIFE-SAVING TREATMENTS COULD DEPEND ON YOU.

The Yale School of Medicine is leading research that is making dramatic advances in medical science. Each of us benefits every day from clinical research. Your blood pressure medicine, your child's asthma inhaler, the latest Alzheimer's drug that your mom is taking - all these are available to you because of clinical studies that show they are safe and effective. None of them would be possible without volunteers willing to take part in clinical studies. As a medical researcher, I can tell you that hundreds of potentially life-saving treatments may never get to those who need them without your help. I urge you to participate in a clinical trial. Visit our website, where you can review available trials and build your personal profile. Or call for more information.

Help us discover.

www.yalestudies.org
1-877-y-studies

Yale

Robert S. Schwartz, MD
C.N. Ho Long Professor of Medicine (Endocrinology)
Senior Clin Endocrinology
Director, Yale Center for Clinical Investigation

YCCI's marketing campaign includes ads that feature faculty explaining the importance of participating in clinical research and urging the public to volunteer. The ads follow a uniform layout to help create a Yale "brand."

Be part of Clinical Research at Yale.

YOU CAN HELP THOSE WHOSE WORK IS HELPING MILLIONS.

Leading research that is making dramatic advances every day from clinical research. Your blood pressure medicine, your child's asthma medicine, the latest Alzheimer's drug that potentially life-saving treatments could depend on you.

Visit our website where you can review available trials and build your personal profile. Or call for more information.

Help us discover.

www.yalestudies.org
1-877-3-studies

Yale

Be part of Clinical Research at Yale.

YOU CAN HELP THOSE WHOSE WORK IS HELPING MILLIONS.

The Yale School of Medicine and School of Public Health are leading research that is advancing health science. Each of us benefits every day from public research. Your blood pressure medicine, your child's asthma medicine, the latest Alzheimer's drug that potentially life-saving treatments could depend on you.

Visit our website where you can review available trials and build your personal profile. Or call for more information.

Help us discover.

www.yalestudies.org
1-877-3-studies

Yale

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HUNDREDS OF FUTURE LIFE-SAVING TREATMENTS COULD DEPEND ON YOU.

The Yale School of Medicine is leading research that is making dramatic advances in medical science. Each of us benefits every day from clinical research. Your blood pressure medicine, your child's asthma inhaler, the latest Alzheimer's drug that potentially life-saving treatments could depend on you.

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Help us discover.

www.yalestudies.org
1-877-3-studies

Yale

Be part of Clinical Research at Yale.

WHY DO I SUPPORT CLINICAL RESEARCH AT YALE? BECAUSE I WANT TO BE SURE ABOUT THE DRUGS HE'S TAKING.

Know that the medicines I give my son work to find out is through clinical research. Your blood pressure medicine, your child's asthma inhaler, the latest Alzheimer's drug that potentially life-saving treatments could depend on you.

Visit our website where you can review available trials and build your personal profile. Or call for more information.

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Help us discover.

www.yalestudies.org
1-877-3-studies

Yale

IS ALCOHOL INTERFERING WITH YOUR LIFE?

Escape to East Haven

GI Dance Force

YCCI WORKS TO MAKE ADVERTISING MORE AFFORDABLE AND MORE EFFECTIVE FOR INVESTIGATORS

ycci has negotiated reduced rates—up to almost 50 percent depending on the size of the ad—for study recruitment ads appearing in the *New Haven Advocate*. Working with local advertising firm Mason, Inc. ycci has also developed ad templates that allow investigators to create with ease compelling ads that are in sync with the umbrella marketing campaign. We strongly urge investigators to take advantage of this opportunity to bolster Yale's presence in the local media, maximize research dollars, and increase study accrual. In fact, if we are able to plan next year's ad space requirements in advance, we can realize even greater savings.

WHAT YOUR AD DOLLARS BUY WITH YCCI DISCOUNTS

\$870.59 ORIGINAL COST \$1600.00

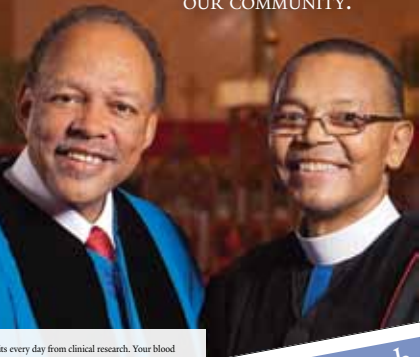
10" x 4.915" COLOR

WHAT YOUR AD DOLLARS BUY WITHOUT YCCI

\$858.82

4.915" x 4.915" BLACK AND WHITE

WHY DO WE SUPPORT
CLINICAL RESEARCH AT YALE?
BECAUSE IT HELPS
OUR COMMUNITY.



YCCI STEPS UP EFFORTS TO RECRUIT STUDY VOLUNTEERS *cont'd from page 7*

PARTNERSHIPS TO REACH UNDERREPRESENTED GROUPS

Participation of minority groups in clinical research is especially low, which may be an important factor in contributing to disparities in health care delivery. Increasing and retaining minority participation in clinical research is critical in order to improve health outcomes in these populations. This is particularly true in New Haven, an economically and racially diverse community in which more than 60 percent of the population is either African American or Hispanic. YCCI recognizes that different approaches may be required to reach minority populations: is developing approaches specifically intended to recruit minorities and other populations underrepresented in clinical research.

YCCI has recently developed two new partnerships to assist in its minority outreach efforts: one with JUNTA, the oldest Latino advocacy group in the New Haven area; and a second partnership with leaders of the African Methodist Episcopal (AME) Zion Church. Representatives of these groups are serving as cultural ambassadors to Yale's research programs, working both within the community and with Yale faculty to develop new recruitment approaches. The program is being instituted at Yale as a result of an ARRA-funded collaboration with the MayoClinic, which has a similar program in place that has served as a model for YCCI.

JUNTA and AME Zion leaders are participating in intensive training in all aspects of clinical research theory and practice, including such topics as patient protections and rights, regulatory requirements and research in specific disease areas that the leaders have identified. This training will enable them to become research advocates in the community and educate members of their respective groups about the research process.

Involving these leaders on a deeper level and earlier in the process—at the stage of research design—will ensure that clinical studies incorporate the needs of the community and at the same time foster trust, thereby enhancing community participation throughout the research process. “I’m excited about the potential of this initiative to bring researchers together with the community in a meaningful way,” said Margaret Grey, DrPH, RN, FAAN, dean of the Yale School of Nursing, who was recently appointed as YCCI’s director of community-based research and engagement.

Input from research advocates will also be incorporated into the new clinical trials website, along with information aimed at such other underrepresented groups as women and children. The goal is to dispel misconceptions held by these groups that may prevent them from participating in clinical research. Besides facilitating the promotion of positive long-term relationships between New Haven’s Hispanic and African American communities and Yale research staff, JUNTA and AME Zion Church leaders will serve as an expert resource, using knowledge of their communities to advise YCCI and Yale investigators on how best to engage their communities in clinical research. They will identify the needs within the community and participate in projects, community engagement activities and community events designed to promote participation in clinical trials.

JUNTA representatives are also providing translation services to investigators who need consent forms and other study documents translated into Spanish. The partnership with these two groups is an excellent example of the kind of innovative partnership YCCI seeks to develop to engage the surrounding community more fully in Yale’s research efforts.

The use of a multimedia, multi-phased approach directed at different populations is expected to increase participation in clinical trials. YCCI encourages investigators to contact Kristin DeFrancesco at kristin.defrancesco@yale.edu or 203-785-3852 with any questions or to request assistance with study recruitment. ☪



Ads to recruit minorities feature leaders from the AME Zion Church and JUNTA. The texts discuss health disparities in minority groups, explain the importance of clinical research, and include a call to action to volunteer.

NEW INFORMATICS INFRASTRUCTURE COMBINES PATIENT CARE WITH RESEARCH NEEDS

The School of Medicine and Yale-New Haven Hospital are investing in an IT infrastructure that will facilitate cutting-edge clinical and translational research and ease the administrative burden for investigators. The new strategy involves a three-pronged approach to meet the needs of the clinical and research enterprises: electronic health records (EHR), a clinical trial management system (CTMS) and a clinical research data repository (CRDR).

On the surface, Yale's efforts to develop an informatics infrastructure that supports its clinical research enterprise are overdue; but in reality, the institution has been studying and devising strategies to address this issue for the past few years. Although implementation of the IT infrastructure took some time to move forward, it has moved quickly and is being carried out on schedule.

Historically, the technology available at the national level for managing clinical research data has been suboptimal, but there is now a much more competitive array of vendors offering systems to meet Yale's needs. The advantage of not being among the first academic research centers to adopt this type of technology is that it provides an opportunity to take advantage of lessons learned by other institutions.

The first major undertaking in Yale's informatics transformation was to purchase an enterprise-wide electronic health record (EHR) system that will serve patients and physicians across the Yale New-Haven health system. At the same time, such a record needs to be integrated with Yale's research enterprise. "Providing an optimum environment for conducting clinical and translational research is an important component of our vision, because a very large number of faculty members who conduct clinical research are clinicians who are doing it in the context of their practice, and even the physician-scientists are drawing patients from the clinical environment," said David J. Leffell, MD, CEO of YMG and deputy dean for clinical affairs for YSM. Leffell and other leaders across the medical campus are unanimous in their view that a well-implemented EHR is more than a technology to assist in the delivery of medical care; it is an opportunity to leverage patient information with the vast amount of knowledge available on the research side. The EHR is in effect a powerful tool for clinical and translational research.

Yale is now in the process of integrating Epic, the number-one vendor of integrated EHR solutions in the United States. Its broad range of features makes it an ideal choice for an EHR that will allow for greater collaboration between YSM and the hospital. Overseeing Epic's implementation are **Daniel Barchi**, chief information officer for YSM and Yale-New Haven Health System, and **Steven Schlossberg, MD**, a urologic reconstructive surgeon, who is the chief medical information officer for YSM and Yale-New Haven Hospital. Both have extensive experience implementing Epic in multi-hospital health systems.

EASING THE BURDEN OF CONDUCTING CLINICAL RESEARCH

While Epic was selected with an eye toward its ability to serve Yale's clinical research needs, the second element in Yale's IT strategy was to implement a clinical research management system that would achieve a new level of sophistication and support for investigator-initiated research.

Following an in-depth evaluation process that included 22 vendors and involved 120 faculty members and staff, the IT team decided to use OnCore, a well-known and widely used clinical trials management system (CTMS) that has been successfully implemented in 36 institutions. OnCore will be centralized and customized to manage the large amount of data involved in the initiation and operation of clinical research. Huron Consulting Group was engaged to assist in implementing OnCore; oversee project management; and provide expertise in integration, configuration, and training.

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From l to r: Daniel Barchi, chief information officer for YSM and Yale-New Haven Health System; David Leffell, MD, CEO of Yale Medical Group and deputy dean for clinical affairs for the Yale School of Medicine; and Steven Schlossberg, MD, chief medical information officer for YSM and Yale-New Haven Hospital.

OnCore Goes Live and Online

The OnCore platform spans the entire clinical trials process, including protocol review, electronic data capture, and patient registries as well as supporting patient safety procedures, clinical research operations, and reporting.

The Cancer Center, YCCI, and other staff began using OnCore on July 8, 2011. Lessons learned from its implementation will lay the groundwork for the system's rollout throughout the remainder of the Yale enterprise. The process will take approximately 18 to 24 months.

A website is now online at <http://medicine.yale.edu/ycci/oncore/index.aspx> to familiarize Yale faculty and staff with OnCore and provide updates throughout its implementation. The site contains an overview of the project, information about its functionality and training materials to help ease the transition to the new system.

NEW INFORMATICS INFRASTRUCTURE COMBINES PATIENT CARE WITH RESEARCH NEEDS *cont'd from page 9*



Ben Patel

Ben Patel, MS, MBA recently joined Yale's IT team as executive director of research and analytics for YSM and Yale-New Haven Health System.

Patel plays a key role in setting the direction of system development and overseeing the integration of OnCore with Epic to optimize the research community's needs. He is responsible for developing Yale's data governance vision and strategy, which encompasses the clinical, research, and transactional databases. Patel is working closely with Barchi and Schlossberg to effectively manage Yale's data infrastructure in order to optimize research and analytical tools.

Patel has worked in the information technology field for over fifteen years, developing and implementing technology strategies across broad disciplines. Prior to joining Yale, he served as assistant director, IT, at the University of Chicago Medical Center.

Yale negotiated with the vendor to include components that will be a boon to research, such as the automated population of lab values, a biospecimen management system, and a demographic interface that connects to Epic. Down the road, future integration will encompass a number of such additional features as automated roadmap functions and automatic upload of data to SAS. These tools, which have not been available at Yale until now, are expected to be of great benefit to investigators.

Clinical research is increasingly difficult to administer and costly to undertake due to complex compliance, financial and ethical issues. The OnCore platform spans the entire clinical research process, including protocol review, electronic data capture, and patient registries. It also supports patient safety procedures, clinical research operations, and reporting.

"These types of implementation have been standard for cancer centers for years, so I was very excited when I was asked to be the faculty leader for this project," said Thomas Lynch Jr., MD, director of the Yale Cancer Center. "I took the responsibility of choosing the right product very seriously – not just for cancer, but for all research at Yale. I think OnCore will take research to a whole new level." Lynch noted that filling Yale's research needs was the main focus in choosing OnCore, while its administrative capabilities – such as the safety auditing that is already being done – are viewed as back-end functionality.

Seamless integration of all components of clinical trial activity is crucial. Clinical trials are fraught with compliance, financial and ethical issues that make them increasingly complex to administer and costly to conduct. A Council on Governmental Relations Study found that each of 25 institutions surveyed faced increased costs for compliance activities at the rate of \$3 million per year over a five-year period. Administrative duties also erode the time that investigators are able to dedicate to research.

The new CTMS system is expected to increase data accuracy: decrease collection time: improve FDA compliance: simplify quality assurance and safety auditing: allow for an easy transition to statistical analysis when studies are completed: and reduce administrative costs. In addition to new grants, many large data projects will better realize revenue through budgeting invoicing, and cost recovery.

LEVERAGING DATA TO CONDUCT RESEARCH

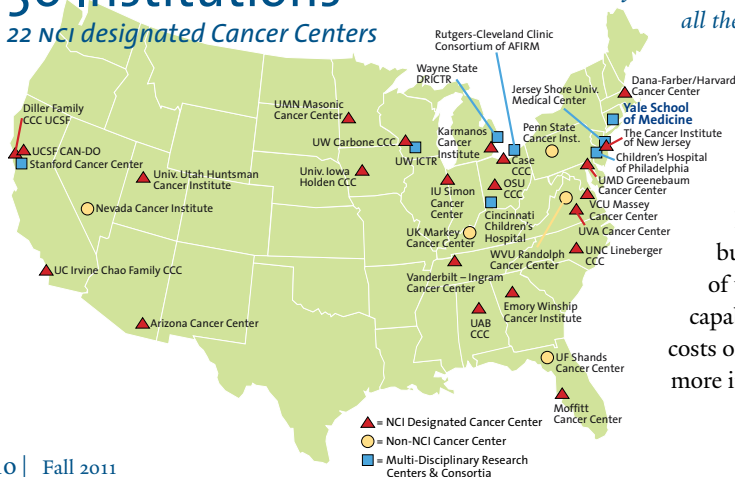
The development of a clinical research data repository (CRDR) – the third component of Yale's informatics initiative – is in the early stages of planning. YCCI and the IT leadership team are in the process of canvassing other institutions that have had Epic in place for the past few years and have well-developed repositories, in order to learn more about ways of leveraging data to conduct research. "This will be a valuable tool for collecting a large amount of clinical data that will be a goldmine for clinical and translational research projects," said Leffell. To envision how the new IT systems can expedite and expand clinical research, consider the following example:

A patient comes to YNHH with an acute heart attack. After undergoing an angiogram and lab work, a stent is put in. An investigator in cardiology has approval to conduct research on an acute phase reactant in males over 40 with acute MI and the patient is enrolled in the study. Blood is drawn and is stored in a freezer farm as part of the tissue management capabilities of the CTMS. The patient is discharged, but in the meantime, another investigator is examining the genetics of a certain type of hyperlipidemia. A database search for patients with a particular lipid profile finds the cardiac patient who fits the bill. The investigator extracts the DNA from the blood sample and enters the genomics data into the genomics database and the CRDR.

Five years later a particular gene is linked to an illness and another investigator wants to find all the patients that have a specific genetic profile in order to conduct a clinical trial, which is now accessible thanks to the IT infrastructure. "You can see how valuable it is to leverage all that data but if you cannot find it in one place, you may never be able to access it for maximum research benefit" said Leffell.

Building this informatics infrastructure has involved an unprecedented level of collaboration among physicians, nurses, informatics specialists, business professionals, and others from across the health system – many of whom are working together for the first time. It's clear that the new IT capabilities will ease the administrative burden on investigators and reduce the costs of conducting clinical and translational research. The new system will be even more instrumental, however, in translating research discoveries into clinical care. 🌐

36 Institutions 22 NCI designated Cancer Centers



NEW CENTER BRINGS BIOSTATISTICS UNDER ONE UMBRELLA

YCCI fosters interdisciplinary collaborations that have the potential to bring medical discoveries from the laboratory to the patient. One recent example of this effort is the newly established Yale Center for Analytical Sciences (YCAS), which is supported by the School of Public Health, YCCI and the Yale Cancer Center. YCAS brings together biostatistics expertise under one umbrella to aid investigators with the design, conduct and analysis of clinical and translational research. The center has a three-part mission:

- To provide infrastructure and resources to investigators needing biostatistical support
- To advance the development of innovative biostatistical and epidemiological methods
- To educate and train the next generation of researchers

“There is a slew of biostatistics across the campus happening in silos that we aim to bring together under YCAS,” said **Peter Peduzzi, PhD**, director of YCAS and professor of public health (biostatistics). “It’s a central clearinghouse of expertise that links individuals and promotes strong collaborations.”

Investigators utilizing YCCI resources receive biostatistical support through YCAS, which currently has eight PhD-level biostatisticians/epidemiologists and four master’s degree-level biostatisticians, plus a statistical programmer and two graduate students. Peduzzi joined Yale to head YCAS in 2010 after serving as director of the Department of Veterans Affairs (VA) Cooperative Studies Program in West Haven, Connecticut – which is a national program within the VA’s Office of Research and Development that conducts multicenter and multinational clinical trials and epidemiologic studies.

YCAS’s collaborative products include statistical collaboration for grant and protocol preparation: manuscript preparation and review: and training in biostatistics and epidemiology. In addition, the center is developing capabilities to enhance the design and analysis of early-phase clinical trials, biomarker studies, and high-dimensional data as well as coordinating center capabilities for clinical trials. Collaborations with investigators from the medical school departments (pediatrics, emergency medicine, cardiology, immunology, pulmonology, and medical oncology), the Child Study Center, the Program on Aging, the Diabetes and Endocrinology Research Center, the Liver Center, the Polycystic Kidney Center, the School of Nursing, and the VA are also major foci of the center.

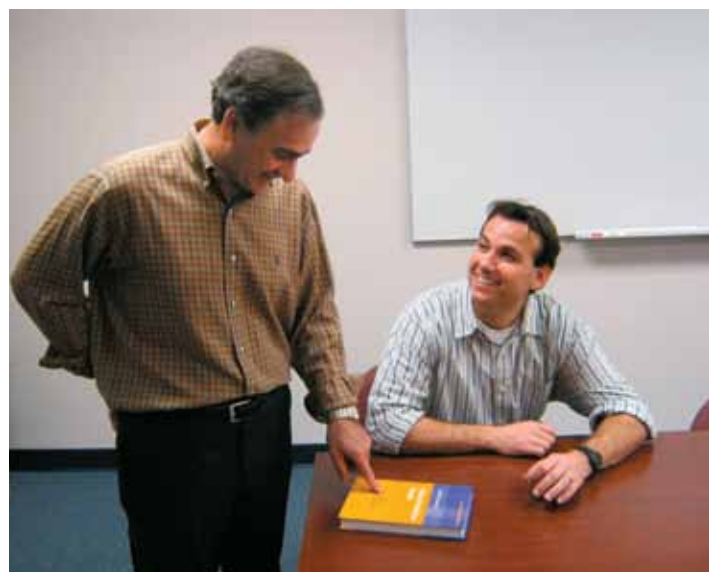
Equipping investigators with biostatistics know-how is crucial to their ability to succeed in today’s clinical research environment. “It’s more and more difficult to even read literature without biostatistics knowledge,” said Peduzzi. The Committee to Establish the Scientific Foundation for Future Physicians, organized by the Association of American Medical Colleges and the Howard Hughes Medical Institute, has also recognized the importance of biostatistics training. In an effort to make the standard premed curriculum more relevant to the practice of modern medicine the committee is likely to recommend that medical schools replace such required courses as organic chemistry and calculus with scientific competencies in such areas as biochemistry and statistics.

Investigators seeking YCAS collaboration have several avenues to pursue, including e-mail, telephone, or accessing the YCAS website. The center also conducts regular research and design clinics that provide a forum for investigators who submit ideas in advance to obtain input and discuss their projects with colleagues. It also offers regular analytic clinics where investigators can bring their data for consultation about analysis. “It will take time and resources, but we want to be a focal point for collaborative research for the medical school and beyond,” said Peduzzi. 🌐

Free Research and Design Clinics

Every Monday and Wednesday from 12-2 in 300 George Street Suite 555, YCAS leads sessions on designing studies and analyzing data. Researchers of all levels are welcome without obligation.

To reserve a space, please e-mail ycas@yale.edu. Be sure to include a brief summary of your project.



Peter Peduzzi, PhD (left) director of YCAS and professor of public health (biostatistics); and YCAS deputy director James Dziura, PhD (right).

YCCI Pilot and Training Funding Opportunities

- The new Pilot and Scholar RFAs will be released later this fall. Check the YCCI website for details.
- Just in Time Core Utilization Pilot applications are accepted on a rolling basis every two months. Details can be found on the YCCI website.

National Pilot Funding Opportunity (must be submitted through YCCI)

- The CTSA Consortium is accepting submissions on a rolling basis for its Multi-Institutional Collaborative Translational Research Pilot award. Collaborative research projects between two or more CTSA institutions are eligible for translational research ranging from basic science to health practices and impact.

For more information, contact Stacey Scirocco, YCCI associate director for administration and operations at 785-7408 or stacey.scirocco@yale.edu.

REGISTERING ON CLINICALTRIALS.GOV



THE PRICE OF FAILING TO REGISTER CLINICAL TRIALS

By now researchers should be aware of a 2007 law that expanded the types of clinical trials that must be registered on clinicaltrials.gov, the federal registry established in 2000. They should also be aware of a 2004 policy instituted by the editors of leading journals requiring trials to be registered in a public database in order for studies to be considered for publication. Since failure to do so will result in the study's being rejected for publication – as happened recently at Yale – it's worth reviewing the rules.

While the Food and Drug Administration Amendments Act of 2007 (FDAAA) and the International Committee of Medical Journal Editors (ICMJE) policy both require the registration of clinical trials, the ICMJE policy, however, is more stringent. By law, most trials of drugs, biologics, and devices under FDA jurisdiction must be registered, although phase I trials are excluded. According to the ICMJE policy, all interventional studies, regardless of phase or intervention type, must be registered. Many journals adhere to the ICMJE requirements, including such top-tier publications as the *Journal of the American*

Medical Association, *The Lancet*, and *The New England Journal of Medicine*. **Yale researchers are therefore advised to register all trials on clinicaltrials.gov** in order to comply with ICMJE policy and meet eligibility requirements for publication in peer-reviewed journals.

Timing is another important issue. According to the FDAAA, the registration deadline is 21 days after the first subject is enrolled for clinical trials that were initiated after September 27, 2007 or were ongoing as of December 26, 2007. But the ICMJE's policy, which went into effect in 2004, requires registration before the first subject is enrolled. The ICMJE will accept registration in any of the dozen or so WHO-approved primary registries; however, because registration on clinicaltrials.gov is a legal requirement and meets the ICMJE criteria, investigators fulfill both requirements by registering on it.

The FDAAA states that as of September 27, 2008, **clinical trial results** must be reported within 12 months of final data collection and as of 2009, **adverse events** must be included. It also requires that information be updated at least every 12 months. The ICMJE requires updates at least every six months. Recognizing that the FDAAA mandates the posting of summary results data on clinicaltrials.gov, the ICMJE does not consider posting results data there to be prior publication.

While noncompliance with the ICMJE policy may preclude publication of a study in a peer-reviewed journal, the penalty is steeper for failing to register on clinicaltrials.gov. It includes fines of \$10,000 per violation and the withholding or recovery of grant funds for federally funded trials.

When the ICMJE policy was announced in 2004, only about 13,000 trials were registered on clinicaltrials.gov. Today the registry includes over 112,000 trials from 175 countries and the website receives over 50 million page views per month. But that doesn't mean that compliance is 100 percent.

"We're aware of many academic medical centers where there seems to be a lot less reporting of results than would be required under the law," said Deborah Zarin, MD, director of clinicaltrials.gov. According to an update in the *Journal of Clinical Research Best Practices*, the NIH has found that academic institutions are compliant with FDAAA regulations for posting trial results less than five percent of the time. "I think academic medical centers have a responsibility to their human volunteers to make sure that research conducted in their centers is compliant with all prevailing standards, so clinical trials should not be done that aren't registered," said Zarin, who has visited Yale two years in a row to educate investigators on complying with the FDAAA.

YCCI can assist investigators with setting up registration on clinicaltrials.gov. Please visit <http://ycci.yale.edu/researchers/ors/registerstudy.aspx> or contact Kevin Palmer at 785-3482, or kevin.palmer@yale.edu if you need help or have questions. Additional information is also available at <http://www.clinicaltrials.gov> ☯

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