Division of Cardiology confronts heart disease with new chief, visionary research

Clyde Yancy, MD, chief of the Division of Cardiology and the Magerstadt Professor at Northwestern University Feinberg School of Medicine, has no trouble defining his overarching research goal: make great discoveries that benefit the greatest number of patients.

For Yancy — whose career has centered on heart failure — reaching this goal means focusing on three main research areas. These concentrations, referred to as the “Critical 3,” include irregular heart beat (arrhythmia), valvular heart disease, and heart failure.

“Our motivations are practical, as they are in sync with the disease burdens plaguing our community,” Yancy says. “Questions related to why problems occur, how they can be prevented, and how they are treated drive our basic, clinical, and translational research.”

Preventive cardiology – an area, Yancy says, where Feinberg boasts a “legacy of success” – also plays a key role in his research mission. With so many young investigators interested in the field, Yancy hopes Feinberg will build on its achievements in this area and play a large part in reducing the influence of cardiovascular disease in generations to come.

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Cardiology, continued from pg. 1

“Imagine if we were able to prevent the common heart diseases of the day; we could redirect our resources and attention toward other types of heart disease,” he says. “Health reform involves changing to meet the anticipated needs of the disease and the people it afflicts. Our vision must be long term and in sync with where heart disease is heading.”

With groundbreaking ideas coming to his desk daily, Yancy says he’s excited about the Feinberg Cardiovascular Research Institute’s potential to shape and even redefine cardiovascular medicine for the future.

“The magnitude of scientific contribution here at Feinberg has been immense,” Yancy says. “Cardiovascular medicine, in general, is heading in a new direction … and we’re already there.”

The following three investigators represent the type of research Yancy says he would like to cultivate at the medical school. Here’s a closer look at their work:

Regulating Heart Beats

Atrial fibrillation (AF), the most common cardiac arrhythmia, affects millions of Americans and is responsible for one-fifth of strokes in an aging population — a major public health issue. Rishi Arora, MD, associate professor in the Division of Cardiology, investigates the mechanisms underlying the disease, as well as new approaches for treating it.

“AF is a challenging, but rich area of research, since a great deal of mystery surrounds the disease,” Arora says. “As an electrophysiologist who sees patients, I see the side effects firsthand and am able to transfer our learnings.”

While imperfect, emerging therapeutic options currently available for AF are providing new hope for those affected. Accordingly, Arora and his team test novel gene-based therapies using large animal models. The research involves correcting the genetic makeup of particular cells in the heart that are electrically overactive, therefore, causing AF. Novel genes, when introduced into these cells, help to restore normal electrical activity in these cells, thereby “curing” AF. The approach also seeks to better understand the molecular signals involved in AF and develop minimally invasive techniques for delivering gene products to the heart.

“Through my research, I hope to enhance available therapies and improve the quality of life for patients suffering with AF,” says Arora.

Mending Failing Hearts

Heart failure, another significant problem, occurs when blood fails to sufficiently pump through the body. With little known about the mechanisms responsible for heart failure development, J. Andrew Wasserstrom, PhD, Jules J. Reingold Research Professor in the Division of Cardiology, centers his research on the role of hypertension as a potential trigger.

“My lab is interested in how the heart gets to the end stage failure,” Wasserstrom says. “Distinguishing a new mechanism for heart failure would change how we think about the course of the disease.”

Wasserstrom and clinical partners like Sanjiv Shah, MD, assistant professor of cardiology, are quickly becoming nationally respected investigators in this area of study. Together, they discovered symptoms of early stage heart failure, which ties in early changes at the cellular level to end stage heart failure. Now in phase two, the researchers are able to identify patients with early cell damage in response to hypertension, for example, and design interventions.

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Researchers on the Chicago campus can now tap a focused resource to support development of large, interdisciplinary grant proposals: Northwestern University’s Office of Research Development (ORD), led by Fruma Yehiley, PhD.

“All the resources available through ORD, including anticipation and identification of federally sponsored funding opportunities, targeted dissemination of funding announcements, collaboration opportunities, workshops, proposal development, and more, are now available to Feinberg investigators,” says Yehiley, director of ORD and research assistant professor in Obstetrics and Gynecology – Fertility Preservation. “Whether researchers are leading a team or looking for collaborators, we work in partnership to provide assistance for the early stages of program and proposal development of complex, interdisciplinary research. Additionally, we provide project management and administrative support for multi-investigator, multi-institutional proposals by teaming with departmental research administrators and the Office of Sponsored Research.”

“ORD is a University-wide office that provides services across a wide variety of research, including basic science and emerging technology,” says Eric Boberg, executive director for research, Feinberg. “ORD fulfills a specific need—to provide resources and services to investigators developing large, interdisciplinary proposals dependent upon collaboration.”

Feinberg investigators who have worked with the ORD team have positive feedback about the experience. “The ORD has been a great help to me,” says Martha Daviglus, MD, PhD, professor of preventive medicine and medicine – geriatrics, who worked with Yehiley in February on a P-60 Center for Excellence in Minority Health Research grant from NIH. “From the beginning, I found the ORD team and the Preventive Medicine team well-organized, helpful, and able to manage a large workload on tight deadlines. ORD handled beautifully all the requirements for University cost-sharing. In the early stages of proposal development, Fruma mediated a collaboration with Laurie Wakshlag, PhD (Medical Social Sciences), who became an important co-investigator.

For more information about cardiovascular research at Feinberg, contact Clyde Yancy: cyancy@nmff.org or (312) 695-0829.
Jonathan Widom, Biochemist, Dies at Age 55

Jonathan Widom, the William Deering Professor of Molecular Biosciences in the Weinberg College of Arts and Sciences at Northwestern University, died July 18 of an apparent heart attack. He was 55.

Also the principal investigator of Northwestern’s Physical Sciences-Oncology Center, the internationally renowned scholar was admired by colleagues, students and friends alike for the creativity, humor and enthusiasm that he brought to all he endeavored.

In his research, Widom focused on how DNA is packaged into chromosomes -- and the location of nucleosomes specifically. The work has had profound implications for how genes are able to be read in the cell and how mutations outside of the regions that encode proteins can lead to errors and disease.

“Jon was a wonderful colleague who did everything with great enthusiasm -- research, teaching, cooking, attending operas -- and he did everything extremely well,” said Northwestern Provost Daniel Linzer. “He leaves a tremendous void in our lives and in our University.”

Widom’s recent work focused on developing a unified framework to explain how changes in cell state or development can influence nucleosome positions and, conversely, how nucleosome positions can influence cell state and development.

“Jon was able to seamlessly blend the biological questions he so passionately pursued with his broad background in chemical principles and quantitative analysis,” said colleague Kelly E. Mayo, chair of the department of molecular biosciences, Widom’s departmental home.

“His contributions to the fields of chromatin packaging and gene regulation are unquestioned and are reflected in his outstanding international reputation,” Mayo said.

Donations may be made to Northwestern University to endow a lectureship in Widom’s name. Checks should be payable to Northwestern University, in honor of Jonathan Widom, and mailed to Stephanie A. Banta, senior director of development, Weinberg College of Arts and Sciences, Northwestern University, 2020 Ridge Ave., Evanston, IL 60208-4308.

Donations may be made online. Select “Make a Gift,” then under “My Designation” enter “In honor of Jonathan Widom.” For further information, call (800) 222-5603 or email Stephanie Banta.

Donations also may be made to the Lyric Opera of Chicago and designated as a commemorative gift in honor of Jonathan Widom.

The Department of Molecular Biosciences will be organizing a scientific symposium to celebrate Widom’s life and accomplishments. The event will be held during the upcoming academic year; details are forthcoming.
Faculty Profile: Clyde Yancy, MD
Magerstadt Professor and Chief, Division of Medicine–Cardiology

Clyde Yancy, MD, chief of the Division of Cardiology and the Magerstadt Professor at Northwestern University Feinberg School of Medicine, joined the medical school earlier this year. Dr. Yancy’s medical appointments include serving as associate director of clinical programs for the Bluhm Cardiovascular Institute.

Most recently the medical director for Baylor Heart and Vascular Institute and the chief of cardiothoracic transplantation for Baylor University Medical Center in Dallas, Yancy is the immediate-past president of the American Heart Association (AHA).

FSM Researcher recently caught up with Dr. Yancy to learn about his research goals and current projects.

What brought you to Feinberg?
Feinberg is an extraordinary institution, and I am delighted to be here. The most galvanizing feature of Feinberg is the alignment of its mission among our various components; specifically, Northwestern Medicine’s intent to become a “great academic medical center;” Northwestern Memorial Hospital’s goal to become a top 10 hospital by 2020; and our own desire to drive our Division of Cardiology to top five within the next five years. I am fully aligned with the focus of these missions and committed to making them happen. I am confident that we are at the cusp. With diligent effort, each of our aligned goals will be achieved.

What is your vision for Cardiology at the medical school?
The Division of Cardiology has a rich legacy of scholarly work. Under the direction of Robert Bonow, MD, this division became one of the most highly recognized cardiology divisions in the country.

My goal is to take us to the next level. We have strong experience as providers of expert health care and excellent physician education. I intend to focus our energy on academic productivity. We have a gifted core of basic, translational, and clinical investigators. Aligning researchers with similar interests, while pursuing the most highly regarded extramural funding opportunities, is top of mind.

The Feinberg Cardiovascular Research Institute continues to perform cutting edge research and open up new arenas of genomic therapy. We anticipate a robust return on these seminal findings and hope that our success in the translational arena will lend additional success in our clinical investigations. The areas of key focus for our division will continue to include prevention and treatment of cellular regeneration, heart failure, atrial fibrillation, and vascular disease.

What are your research interests?
My research interests have evolved over the years. The overarching focus has been heart failure and its various permutations, including acute decompensated heart failure, heart transplantation, and the prevention of heart failure. In recent years, I have narrowed my focus to two distinct areas: improving quality of care and narrowing the gap in disparate healthcare. I see the larger objectives – improving quality for all patients with heart disease and contributing to the attainment of health equity – as ‘greater good’ objectives.

What kind of cardiovascular research is happening at Feinberg that excites you?
We have a wealth of ongoing research activities at Feinberg, and all of our efforts have great potential. The recent reports that we can extend functionality and reduce episodes of pain for patients with chronic ischemic heart disease are very encouraging. The discomfort felt by patients with chronic chest pain and chronic ischemic heart disease can be disabling. These are real breakthroughs that may fundamentally improve the quality of life for our patients.

Similarly, the work we are doing with cardiothoracic surgery to investigate ways of replacing diseased aortic valves without surgery is of great impact. The methods and technology we investigated have led to approval of this game-changing approach to valvular heart disease. These discoveries and investigations define the quality of work we are doing and intend to continue here at Feinberg.

What can Feinberg do better in terms of cardiovascular research?
Research is resource intensive, and the availability of federally-sourced extramural funds is lessening. Our continued growth and momentum depends upon a steady influx of working

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capital. To the extent that we can work collaboratively to secure new and significant non-federal funds, we should be able to sustain our work efforts and catalyze our work to the next level.

What is your approach to mentoring and career development?

My own view is that mentoring – or coaching, as I view it – is about understanding shared interests, needed resources, and anticipated objectives. For faculty members, there is a matrix we must build. It begins with clinical commitment, academic and professional objectives, and a healthy balance of personal time, but then drills down into a research focus. It’s important that each of our faculty has ownership in some area of heart disease. This means that we must seek novel ideas, set doable objectives, identify reach objectives, align resources, and establish metrics – both short- and long-term. Having clear expectations on both sides constitutes the first step toward success.

Are there research collaborations you’ve noted since arriving that excite you?

Since arriving at Feinberg, I have enjoyed the ‘tour.’ Many of the members of this Division of Cardiology are involved in novel projects, as are a number of our collaborators in the broader community. Some of the most novel projects include gene therapy for heart failure; the use of atypical vasodilators to treat advanced heart disease; new surgical approaches to circulatory mechanical assist devices; and novel assessments of quality of care. My work addressing health equity will also persist. We will continue to pursue these and other leading edge initiatives as we look for the best approaches to create the most good.

Sen. Mark Kirk holds symposium at Feinberg to “turbocharge” stem cell research

U.S. Sen. Mark Kirk (R-Ill.) hosted a symposium on stem cell research at the Robert H. Lurie Medical Research Center of Northwestern University on the Chicago campus.

“The potential of stem cell research to cure Alzheimer’s, cancer or diabetes is limitless if we aggressively support American medical research,” Kirk said. He wants to “turbocharge” stem cell research in the United States.

“Stem cell research offers the best promise to cure juvenile diabetes and certain blood cancers,” Kirk said. “That is why I believe Republicans and Democrats should unite behind keeping the United States first in medical research.”

University President Morton Schapiro opened the symposium, stressing the importance of stem cell research. The symposium also included presentations by Jack Kessler, M.D., and Richard Fessler, M.D., leading national stem cell researchers at Northwestern University Feinberg School of Medicine.

Kessler, the Davee Professor of Stem Cell Biology and a neurologist at Northwestern Memorial Hospital, talked about his lab’s recent breakthrough in transforming human embryonic stem cells into a critical type of neuron that dies early in Alzheimer’s disease and is a major cause of memory loss. He said the research will enable a rapid wave of drug testing for Alzheimer’s disease, allow researchers to study why the neurons die, and could potentially lead to transplanting the new neurons into people with Alzheimer’s.

Fessler, a professor of neurological surgery at Feinberg and surgeon at Northwestern Memorial, spoke about his national clinical research trial of a human embryonic stem cell-based therapy for participants with subacute thoracic spinal cord injuries. He recently performed the procedure on the second participant in the trial.

Following the symposium, Kirk toured Kessler’s stem cell lab at the Lurie Medical Research Center.
The balance between coagulation and fibrinolysis is essential not only to maintain homeostasis but also to enable an appropriate response to trauma and infection. In addition, there exists an intimate link between fibrin deposition and inflammation. Some bacterial pathogens, however, have developed virulence strategies to manipulate the host thrombotic and fibrinolytic pathways.

The Gram-negative bacterium *Yersinia pestis* causes the devastating disease plague and has caused an estimated 200 million deaths over the course of human history. *Y. pestis* is known for its elevated potential for transmission, rapid disease progression, and high morbidity and mortality, particularly by the aerosol route. If left untreated, the pneumonic form of disease is 100 percent fatal.

We have recently shown that one bacterial virulence factor that is critical for the development of pneumonic plague is the plasminogen activator protease Pla. Pla is an outer membrane protein that in vitro has been shown to convert the host zymogen plasminogen into the active plasmin form, a crucial molecule required to maintain coagulative homeostasis. It is believed that the activation of plasminogen by Pla catalyzes the degradation of entrapping fibrin clots, disregulating the coagulation and fibrinolysis pathways during infection. The manner by which Pla contributes to pneumonic plague in vivo is completely unknown, however, including the effects of Pla on lung function, bacterial replication, and the host immune response.

The goals of this grant, then, are to understand at a mechanistic level how *Y. pestis* manipulates the coagulative and fibrinolytic responses to infection in the lungs that results in the development of pneumonic plague, and the role that Pla plays in this process. While we anticipate that these studies will aid in the development of more effective countermeasures against the plague bacterium, in addition they may have implications for understanding how other bacterial pathogens affect thrombosis and fibrinolysis during infection as well.

### NIH News

Dr. Sally Rockey, NIH’s deputy director for extramural research, has published a blog post called “The Time is Right for NCATS,” intended as a follow-up response to NIH Director Francis Collins’ article in *Science and Translational Medicine*. In her post, she invites investigators to share comments at Feedback.NIH.gov about the proposed new center.

The NIH announced on July 21st that the next Funding Opportunity Announcement (FOA) for the Clinical and Translational Science Awards, originally planned for October 2011, would be delayed until June 2012 to give the future NCATS leadership, in partnership with CTSA program staff, time to provide input into how CTSAs will be integrated into NCATS under one common mission, to advance the discipline of translational science.

NIH is aware that CTSAs awarded in 2008 anticipate a new FOA this fall. These awards are set to expire in April 2013. NIH will provide a cost extension for any lag between their current award and the start of the next award for successful applicants. The new FOA will be for renewals and new applications.

The Office of Extramural Research has developed a new podcast to explain who reviews NIH grant applications and how reviewers are selected. The “All About Grants” OER podcast series provides guidance and insight from NIH experts on a variety of grant topics of interest to investigators, fellows, students, and research administrators.

The NIH recently posted changes and clarifications to the NIH Continuous Submission Policy for Reviewers with Recent Substantial Service. NIH has made it clear that the continuous submission option is only available for NIH R01, R21, and R34 applications. Continuous submission is not available for applications submitted for special dates (RFAs, some PARs) or other activity codes.
Where is your hometown?
I was born in Ann Arbor, Michigan and raised in Rochester Hills, Michigan.

What is your educational background?
I studied biomedical engineering at Northwestern as part of the Honors Program in Medical Education (HPME).

You were recently awarded the Howard Hughes Medical Institute (HHMI) Fellowship. What was the process like?
Most of my previous research experience had been limited to summers, and I knew that I wanted to pursue a full-time project after these limited times in the lab. The HHMI Fellowship offers students the opportunity to investigate a topic of their choice for a full year, so I felt this experience would not only serve as a powerful introduction to the life of a physician-scientist, but would fit seamlessly into my undergraduate and medical training schedule that had already been shortened to seven years by the HPME program.

I wanted to make sure that I allowed myself enough time to give careful thought and planning to my project, so I applied in early October to Feinberg’s Research Thesis Program. By December and the holiday break, I was home in Michigan for some rest and relaxation, but also spent afternoons at my local library working on the HHMI fellowship application. After nervously clicking the submit button in early January, the long wait began for the notifications. The application was always running in the back of my mind, but I was completely unprepared when Melanie Daub from HHMI emailed me to notify me of the offer. I was halfway through the email when Melanie called personally to congratulate me. She said that I should feel free to take some time to think about it, but my response was “Absolutely yes!”

For any students interested in research but who do not think the full MSTP experience is for them, I wholeheartedly recommend applying to this fellowship. It is a long application, but I suggest that interested students look at it as preparation for a project that they would do regardless of the outcome of the fellowship award – there is plenty of value in the application process itself.

What is your fellowship research focused on?
The project aims to develop magnetic resonance imaging (MRI) techniques that optimize selective transcatheter-directed intra-arterial delivery of natural killer (NK) cells for the treatment of hepatocellular carcinoma. The idea is that intra-arterial delivery of NK cells will enhance tumor localization of NK cells compared to intravenous delivery, leading to improved therapeutic outcomes in an animal model (that would eventually translate to patient care). The long-term goal is to develop MRI techniques that predict tumor response based on NK cell delivery, allowing for the adjustment of NK cell dosages for maximal therapeutic efficacy.

Read more of Alexander’s Q&A online.

Connect with Alexander on LinkedIn.

IGP News
Sebastian Aherns is a PhD student at Feinberg training in the laboratory of Karla Satchell, associate professor of microbiology-immunology. Aherns has combined the areas of microbiology and structural biology in his dissertation research. HHMI recently awarded Aherns an international student fellowship; he was one of 47 recipients out of approximately 400 official applicants nationwide, and countless other individual institutional applicants do not even receive an invitation to submit a nationally reviewed application. Aherns is an example of a student who took advantage of the multidisciplinary approaches at Feinberg to answer complex questions posed by his research interests.
Research in the News

Chicago Tribune  July 13
Los Angeles Times  July 13
Laughter is the test medicine
Darby Morhardt was interviewed about Alzheimer’s disease research.

Chicago Magazine  July 2011
Head shots
Drs. Hunt Batjer, Daniel Derman, and Cherise Russo were interviewed about concussions in youth sports.
New hope for men with prostate cancer
Dr. William Catalona was quoted.

UPI  July 11
Half of college students have blackouts
Dr. Michael Fleming’s research was featured.

Study also featured in:  
Chicago Sun-Times  July 11

FOX Chicago  May 18
Chronic stress can affect pregnancy
Dr. Ann Borders was interviewed.

BBC News  July 8
Stem cell hope for heart patients
Dr. Douglas Losordo’s research was featured.

Study also featured in:  
Los Angeles Times  July 8
Chicago Tribune  July 8
WGN-TV (Chicago)  July 8
WNBC-TV (New York)  July 8
Web MD  July 7
CBS News (National)  July 7

New York Times  July 4
When ‘Take as Directed’ poses a challenge
Dr. Michael Wolf’s research was featured.

Time Magazine  July 1
Choosing a sunscreen: Tips from an expert
Dr. Amy Paller was quoted.

Welcome New Faculty

Norrina Allen, PhD, joins as assistant professor in preventive medicine.
Allen recently completed her post-doc in cardiovascular disease epidemiology at Northwestern University. She received her Doctorate Degree and Master’s Degree in public health in epidemiology from the Yale University School of Public Health. She has received three NIH grants and published thirteen articles in peer-reviewed journals.
Her research interests include examining the effect of neighborhood and environment on cardiovascular disease, disparities in quality of care and outcomes, and the use of large databases to examine these questions.

James Reilly, PhD, joins as assistant professor in psychiatry and behavioral sciences.
Reilly previously was assistant professor of psychiatry at the University of Illinois at Chicago and clinical neuropsychologist at the University of Illinois at Chicago Medical Center, where he also completed his post-doctoral fellowship in neuropsychology and his clinical psychology internship. He received his Doctorate Degree and Master’s Degree in clinical psychology from the University of Virginia, and studied at Trinity College, Dublin, Ireland, as a Fulbright Fellow. He received two NIH grants, including a K23 Patient Oriented Career Development Award, which he is currently completing. He has published 14 articles in peer-reviewed journals.

His research interests include using cognitive neuroscience and neuroimaging methods to evaluate the neural systems basis to cognitive problems that patients with psychotic disorders, such as schizophrenia, experience early in the course of illness and how these are impacted by pharmacological treatments.
Funding Opportunities

Biomedical Technology Research Resource (P41)
More information

Sponsor: United States Department of Health and Human Services, National Institutes of Health, National Center for Research Resources
Submission Deadline: September 25, 2011
Upper Amount: $3.5 million

Synopsis: This announcement encourages grant applications for national Biomedical Technology Research Centers. These Centers conduct research and development on new technologies and new and improved instruments driven by the needs of basic, translational, and clinical researchers. The Centers are charged to make their technologies available, to train members of the research community in the use of the technologies, and to disseminate these technologies and the Center's experimental results broadly. New applicants are strongly encouraged to submit a pre-application in response to PAR-10-224. The pre-application process provides feedback regarding appropriateness for this program and competitiveness of a potential application.

Joint DMS/NIGMS Initiative to Support Research at the Interface of the Biological and Mathematical Sciences (DMS/NIGMS) - NSF 10-579
More information

Sponsor: National Science Foundation, Directorate for Mathematical and Physical Sciences, Division of Mathematical Sciences
Submission Deadline: October 3, 2011
Upper Amount: $20 million

Synopsis: The DMS and the National Institute of General Medical Sciences (NIGMS) at the National Institutes of Health plan to support research in mathematics and statistics on questions in the biological and biomedical sciences. Both agencies recognize the need to promote research at the interface between the mathematical sciences and the life sciences. This competition is designed to encourage new collaborations, as well as to support existing ones. The DMS and the NIGMS anticipate supporting research in the mathematical sciences with biological applications. Appropriate application areas are those currently supported by the National Institute of General Medical Sciences. The work that is supported under this initiative must impact biology and advance mathematics or statistics. Thus, collaborations between the mathematical scientists and appropriate biological scientists are expected. Other methods to ensure impact are also possible and should be specified in the proposal.

View more funding opportunities

Featured Events

8/15 “Evolving the Translational Research Career” (Third Mondays)
Offered in an effort to provide support for junior faculty to develop an ability to look at their own work and that of others in a critical but supportive manner.

Date: Monday, August 15, Noon to 1:30 p.m.
Location: Rubloff Building, Lakeview Conference Room - 11th Floor
420 E. Superior St. (Chicago campus)
Contact: nucats-ed@northwestern.edu
More information

8/16 Clinical Research Unit (CRU) Orientation, Part 1
Hosted by NUCATS and open to anyone involved in research who will use CRU resources.

Date: Tuesday, August 16, 1 to 2:30 p.m.
Location: Northwestern Memorial Hospital
Feinberg Pavilion, 3rd Floor
Conference Room D
251 E. Huron (Chicago campus)
Contact: angela-tang@northwestern.edu
More information

9/12 2011 Oncofertility Consortium Conference
The fifth annual Oncofertility Consortium Conference will focus on “Priorities for Sustainable Oncofertility Research and Patient Care.” This year’s conference will highlight the accomplishments of research in cancer and fertility and identify future directions for the field.

Registration is required.

Date: Monday, September 12 to Wednesday, September 14 (all day)
Location: Prentice Women’s Hospital
250 E. Superior St. (Chicago campus)
Contact: KTimmerman@northwestern.edu
More information

More events

Event organizers are encouraged to submit calendar items on Plan-It Purple for consideration. Please contact the Research Office with further questions.