



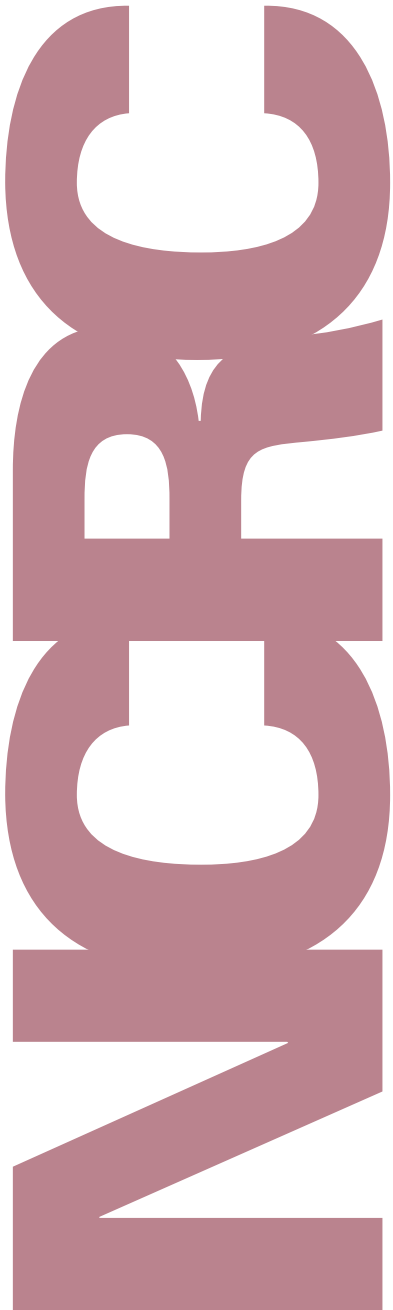
Fiscal Year **2010** *Annual Report*





LIBERATION / DAVID BARR

This sculpture was acquired in 2009 when the university purchased NCRC from Pfizer, which had commissioned the piece in 2002. Liberation reflects the guiding principles of research at NCRC. The work consists of nine separate objects or groups of objects near the main entrance to the primary building and scattered in the landscape. David Barr says, "The forms of these sculptures and their relationships express the search, the research, the persistence, the power, and the evolution of the scientific process." The inscription underneath the egg is from the 13th century Sufi poet and mystic, Rumi: "The nature of reality is this: it is hidden, it is hidden, and it is hidden."



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Message from **U-M President Mary Sue Coleman**



What a difference a year makes.

SINCE TAKING OWNERSHIP of the vast, vacant parcel we now know as the North Campus Research Complex, the University of Michigan has taken important steps to advance this critical expansion of our research enterprise.

As one of the nation's top research institutions, with more than \$1 billion in projects, the university continually looks to build upon its strengths. NCRC accelerates that work and positions us for a future that features greater scientific collaboration between faculty, students and industry partners.

With some 300 employees now on site, we are seeing the first of an expected 3,000 faculty and staff in the laboratories and offices of NCRC. In addition, we have identified the first two important technology anchors – biointerfaces and molecular, functional and structural imaging – as well as made a commitment to unify U-M's health service research programs at NCRC.

We also took an important step in hiring Dr. David Canter as the NCRC's first executive director. Dr. Canter is well-versed in the complex, having spent nearly 25 years in pharmaceutical research and leadership, including as a senior vice president in Pfizer Global Research and Development. I have every confidence that with Dr. Canter's leadership, we will fulfill the promise that this extraordinary facility holds.

Building the NCRC will take time, but will pay long-term benefits in the form of jobs, spinoffs, incubator space and public-private partnerships. Rather than move too quickly, we are focused on deliberate, strategic growth to achieve our vision of a multi-facet hub of research and innovation – one that helps transform our economy in Michigan and beyond.

Perhaps the most exciting aspect of NCRC is anticipating the difference it will make in the life of the university and beyond for generations to come. This development is a once-in-a-lifetime opportunity for the university, and we are enthusiastic about the potential of research and innovation to deliver meaningful benefits to society.

Sincerely,

A handwritten signature in black ink that reads "Mary Sue Coleman". The signature is fluid and cursive, with a long horizontal line extending from the end.

Mary Sue Coleman
President, University of Michigan

Message from Ora Pescovitz

IN THE 17TH CENTURY, many scientists believed that there was a finite amount of knowledge in the world. Since then, however, science became defined by exactly the opposite – by the belief that there is always something new to discover, a new question to ask or a different way to look at an existing theory or approach.

This basic curiosity – a desire to know and learn more, and to find solutions to questions not yet answered – is what drives all scientists and innovators, and it is the core principle driving the vision of the North Campus Research Complex.

We have spent the past year building the foundation for this vision and with notable success. We've already activated nine buildings on the complex property, moved in approximately 300 employees and leased space to our first on-site private industry partner. In addition, we continue to identify and explore opportunities to further establish the NCRC as a vibrant home for academic and private-sector research and partnerships.

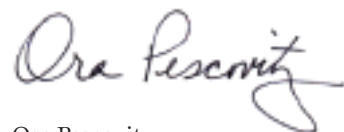
NCRC is about dreaming big and defining the future of research and discovery. To do this successfully, it takes diverse talent, big ideas, steadfast commitment and great courage. It also takes visionary leadership, which we have in spades across the U-M campus. We were especially fortunate to have Jim Woolliscroft stewarding the NCRC effort until an executive director was hired. Without Jim's vision and commitment, we wouldn't be where we are today.

In July 2010 we enhanced that leadership with the addition of Dr. David Canter as the NCRC's inaugural executive director. David brings to the position unparalleled knowledge of the property, having led Pfizer's pharmaceutical research operation on the site for eight years. He also brings an impressive record of strategic leadership, a charismatic entrepreneurial spirit and strong ties to the Ann Arbor community. I have every confidence in his ability to move us forward thoughtfully, deliberately and successfully, and I look forward to watching the NCRC thrive under his direction.

T.S. Eliot said that "Only those who will risk going too far can possibly find out how far one can go." The NCRC provides us with an extraordinary opportunity to take new risks, to collaborate unlike ever before across disciplines, across industries and across conventions, and to discover the drugs, devices and technologies that improve humankind.

This is an extraordinary opportunity to lead the way in finding out how far research can go. Congratulations and thank you to everyone who made this past year so successful. I can't wait to see what comes next!

Sincerely,



Ora Pescovitz
Executive Vice President for Medical Affairs, University of Michigan
CEO, U-M Health System



Message from David Canter



- As executive director since July 2010, Dr. Canter leads the development and implementation of the strategy to spark revolutionary research and discovery at NCRC.

- A physician, scientist and respected leader, with a distinguished career in pharmaceutical research and leadership at Pfizer, he was most recently director of the Healthcare Research Initiative at the William Davidson Institute.

- His strong connections to the region's business and academic communities are an asset to his current role.

IN MY NEW POSITION as the executive director of NCRC, I feel excited to be in the midst of one of the most significant and dynamic initiatives at the University of Michigan. NCRC represents the largest physical expansion at U-M in nearly 60 years, and it is an important responsibility. Since the acquisition of the site, the last year has been one of hard work by members of the U-M community to brainstorm, plan and build consensus around the vision, mission and goals of this extraordinary research campus. I would like to acknowledge the significant role played by Dr. James Woolliscroft in shaping the NCRC vision. You will read the details of the accomplishments of the last year in the pages of this report.

My job is to build on all that has already been achieved. We are in the process of articulating our goals, both short- and long-term. We have in place a dedicated leadership team that will move the mission of NCRC forward in the coming years. I am comfortable in the fact that I am intimately familiar with the site and its capabilities. Not only does that reduce my own learning curve, but it also gives me great confidence to make sound decisions about NCRC, while keeping the best interests of the university, the city and the state's economy in mind.

While it is true that we have set major goals for this campus in terms of innovative, cutting-edge, interdisciplinary and translational research, it is also true that we have to be patient in building the kind of a research environment we envision. It will take time, meticulous planning and hard work to nurture this vision. In the meanwhile, we will continue to keep striving toward that goal, diligently working on the stepping stones that will pave the way for the future and remembering to celebrate the milestones that will mark our progress.

I see NCRC as a vibrant meeting ground for people, ideas, science and creativity. We are working to build an active and engaged community around this campus, and I invite you to be a part of the many exciting developments and programs at this unique campus.

Sincerely,

A handwritten signature in dark ink, appearing to read 'D. Canter'.

David Canter
Executive Director, NCRC

Message from Joan Keiser

A truly rewarding job.

IN THE PAST NINE MONTHS, I have been privileged to work with a creative, dedicated and extremely hard-working group of individuals dedicated to NCRC planning and campus activation, including the support of Dr. James O. Woolliscroft and the leadership of Dr. Ora Pescovitz. A key partner in all of my activities has been Dan Duckworth. It's been challenging to shepherd this degree of change and thoroughly exciting to have the attention of so many stakeholders across the university. The accomplishments are notable – we have populated approximately 25 percent of the administrative space at NCRC, co-locating closely related research support services. We have secured a private sector lease tenant, BoroPharm, and we are aggressively working to bring the first phase of our lab-based research faculty onto the site over the next 12 months, with the goal of commissioning and activating 30 percent of the available research space. By the end of September 2010, both the Business Engagement Center and the Office of Technology Transfer will call NCRC their new home and the first of our health services researchers will have moved in.

Having repeatedly walked down the empty hallways and vacant buildings in the weeks and months post-acquisition while we brainstormed and debated how to best use the site, it is incredibly

rewarding to see this campus coming back to life. As with any project there have been bumps in the road and hiccups, but the team here is customer-focused and meets each and every issue with a can-do attitude. Rather than replying “we don’t do ...” I hear “how can we get this done ...” We are still years away from achieving the bustling feel of our other campus facilities, but the trajectory of growth here is aggressive and will stay so for years to come.

Importantly, the faculty members who drive our university research enterprise have been actively engaged and vocal about how this new campus can support their work. We will work relentlessly in the coming months to deliver on our goals and exceed their expectations. I look forward to transitioning the leadership of NCRC to David Canter and to work closely with him and the NCRC team to create a rich and vibrant research campus that provides our faculty and staff with a stimulating environment.

Sincerely,



Joan Keiser
Director, NCRC



- As interim managing director beginning December 2009, Dr. Keiser was responsible for planning and directing all operational and programming activities until the new executive director was in place.
- She possesses outstanding credentials as a basic science researcher, and extensive experience in biomedical research and research administration.
- In addition to now being the director, she retains her position as an adjunct professor in Molecular and Integrative Physiology at U-M Medical School.

About NCRC

KEY FACTS & FIGURES

Purchase price:

\$108 million

Total acreage:

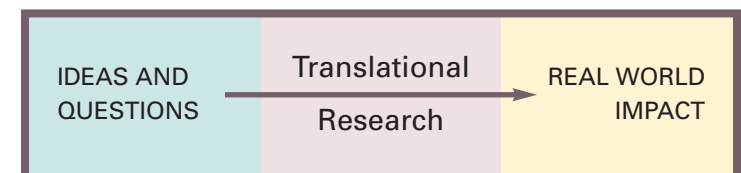
173.5 acres

THE UNIVERSITY OF MICHIGAN'S decision to invest in the purchase of the former Pfizer campus resulted in a dramatic expansion of its research infrastructure. The purchase was finalized on June 16, 2009, making it the largest physical expansion in nearly 60 years. The site, which had been vacant since the end of 2008, was renamed the North Campus Research Complex (NCRC). It consists of nearly two million gross square feet of research and support space along with approximately 174 acres of land, 28 buildings, a manufacturing facility, 2,800 parking spaces, furnishings and technical equipment.

"This purchase is an investment in the future of the University of Michigan and of our state," said U-M President Mary Sue Coleman. "These facilities will help attract more research funding to the area, allowing us not only to broaden our contributions as one of the nation's premier research universities, but also to strengthen the region's ability to stimulate new business."

U-M has been successful in its strategy of growth in both the clinical and research aspects of its mission. However, lack of research space has been a constraining factor. This campus was a prudent investment which rapidly augmented the current U-M research space by 10 percent.

With NCRC, U-M embarks on a transformational project to spur interdisciplinary research and innovation across campus, Ann Arbor and the state of Michigan. The new complex will house cutting-edge innovative research with a global impact and the potential to establish U-M as one of the leading translational research institutions in the nation. It will create thousands of new jobs and help U-M recruit top-notch faculty, students and staff. It will spark public-private partnerships that rapidly transition ideas and data into new knowledge, marketable products and new ways of working. The new research model of co-location of diverse research groups is designed to inspire collaboration, leverage interdisciplinary expertise and technologies, and help tackle multidimensional problems.



History

IN DECEMBER 2008 the U-M board of Regents approved the decision to negotiate the purchase of the former Pfizer campus. Led by U-M Medical School Dean Dr. James O. Woolliscroft, a memorandum of understanding was developed in the U-M Health System to contribute to the purchase and provide a 10-year window of funding for capital investment and operations. This was signed by chairs and institute directors on March 16, 2009. The U-M Health System provided approximately 70 percent of the final purchase price, as well as a revenue stream to support operating costs and capital renovations over a 10-year period to allow staged activation.

Also in March 2009, Dr. Woolliscroft hosted the first meeting of the Internal Advisory Group (IAG), composed of deans from major research schools and colleges, and other key academic leaders across the university. The IAG was formed to review and comment on strategic research and administrative decisions during the initial development of NCRC. In addition, Central and North campus town hall meetings were held to promote the shared opportunity of the campus and collect feedback.

At the same time, we held the kickoff meeting of the Research Scientific Programming (RSP) Committee. Teams such as Research Assessment, IT and Cores, Innovation and Public-Private Partnerships were launched to explore options and provide feedback on opportunities for growing and populating the campus. Other faculty work groups launched included Health Services Research, Drug Discovery and Neurosciences in April 2009, and Imaging and Biointerfaces in May/June 2009.



Between December 2008 and May 2009, Facilities and Operations worked with external consultants to perform a comprehensive due diligence evaluation. This included completion of an environmental assessment, title and survey work, and a facility condition assessment. Tim Slottow, executive vice president and CFO of U-M, shared the findings and the recommendations with the board of Regents on May 18, 2009, receiving the authorization to proceed with the purchase.

The acquisition was successfully completed on June 16, 2009, and the site was subsequently renamed the North Campus Research Complex.

The North Campus Research Complex: Leadership in 4th Generation Research



Vice President for Research, William Gould Dow Collegiate Professor, Electrical Engineering and Computer Science; Professor, Materials Science and Engineering; Professor, Physics

Stephen R. Forrest, Vice President for Research

We often speak about how the North Campus Research Complex (NCRC) will “transform” research at the University of Michigan, and may even have potential to redefine how research at universities will be pursued in the 21st Century. I agree with this sentiment, but it will only become reality if we work together to forge a vision of how the NCRC can help to make U-M the undisputed leader of university research in the decades ahead.

A bit of history may put our opportunities in focus. Shortly after World War II, the modern research relationship between universities and government was based on fundamental, or “curiosity-driven” research conducted at universities. This was considered as the first step that led, eventually, to practical applications developed by industry.

By 1980, the U.S. economy did not appear to be adequately benefiting from the enormous research investment. This gave rise to the second generation of the partnership that was extended to include active industry participation in the research enterprise. A major sign of this change was the passage of the Bayh-Dole Act in 1980, that allowed for universities to retain rights to intellectual property generated using federal funding. Another was the emergence of NSF-funded Engineering Research Centers.

But the scene changed yet again in the mid 1990’s. Ironically, the growth of the high-tech economy, much of which came from university labs and entrepreneurs of the previous decade, led to a devaluation of the importance of use-inspired basic research.

This perception arose from the belief that knowledge generated in the US was exploited by competitor nations who had made significantly smaller investments in foundational research. This third generation was characterized by a shift toward support for applications development based on knowledge already on hand.

We find ourselves once more in a time of change. Global competition is placing unprecedented pressures on our economy. At break-neck speed, high intellectual content technologies are creating new industries in parts of the globe that, in the past, we never considered as serious competitors.

Success in this 4th generation of research will be defined by creative and dynamic partnerships that come together to solve the most complex problems facing humankind. And when the immediate problem is solved, the team is replaced by a new team with a different set of participants and expertise.

So where does the NCRC fit in to all of this? This highly interconnected, spectacular laboratory space offers a unique resource when combined with the extraordinary strength of our faculty across almost all disciplines, engaging in collaborations with both our government and industry partners. Achieving success will not be easy. We must develop a shared understanding about the uses and possibilities offered by NCRC, and find new ways to engage our faculty in developing those partnerships. We now live in a highly dynamic global theater of competition that directly impacts the fortunes of our state as it transforms its own economy. Yet we are also faced with opportunities that others might only dream of, sitting right at our doorstep.

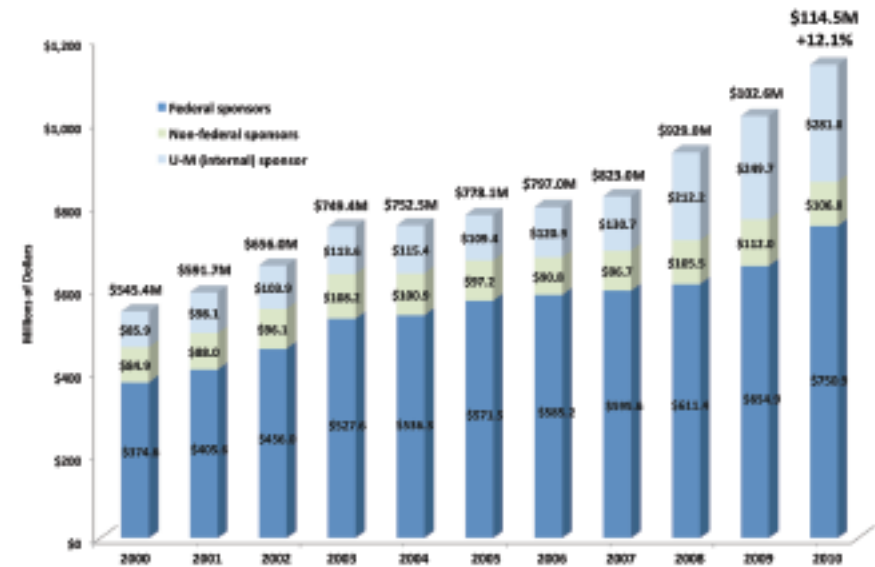
U-M Research and Tech Transfer

Research Expenditures

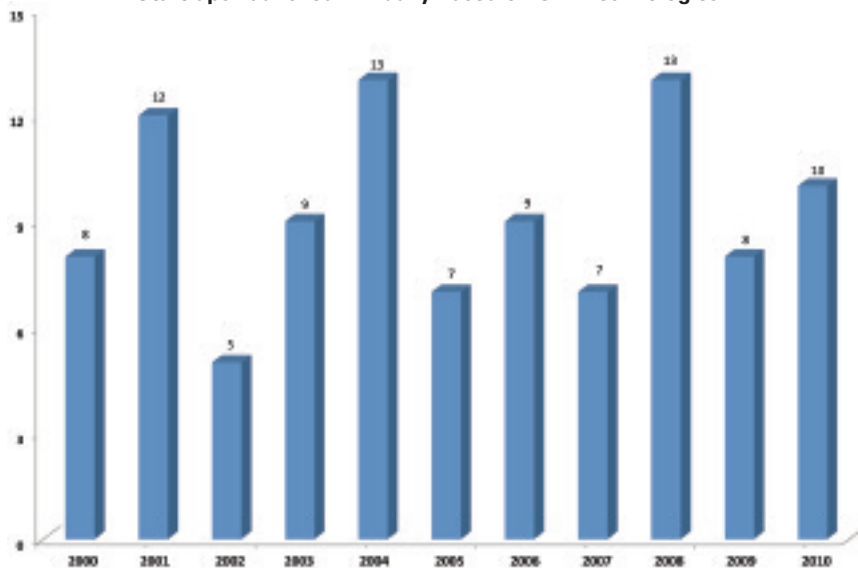
Largest Five U-M Units, FY 2008–2010

Unit	FY 2008	FY2009	FY 08-09 Change	FY2010	FY 09-10 Change	% of Total FY 2010
Medical School	\$357,895,525	\$445,782,408	24.8%	\$498,423,751	11.8%	43.7%
College of Engineering	\$135,130,998	\$160,152,222	18.5%	\$180,088,936	12.5%	15.8%
College of Literature, Science, and the Arts	\$80,593,256	\$85,365,727	5.9%	\$111,307,842	30.4%	9.8%
Institute of Social Research	\$90,452,939	\$97,370,651	7.6%	\$99,371,693	2.1%	8.8%
School of Public Health	\$49,877,829	\$54,835,897	8.3%	\$61,157,153	13.3%	5.4%
U-M Total	\$929,004,342	\$1,016,585,913	9.4%	\$1,139,493,986	12.1%	100%

U-M Research Expenditures by Major Sponsor Groups



Start-ups Launched Annually Based on U-M Technologies



- Total research spending increased 12% in FY 2010 over the previous year, and more than doubled since FY 2000.
- In the 2009 comparison of research spending by U.S. universities, U-M ranked first among publics and second overall.
- U-M technologies are behind 101 start-ups launched since FY 2000.
- The largest five units on campus accounted for 84% of total research expenditures last year.

Initial Milestones



THE POST-PURCHASE PHASE was marked by several important activities. A concentrated effort to engage the faculty members and enable grassroots participation was initiated. A university-wide “Call for Ideas” provided ideas and feedback, encouraging hundreds of respondents to contribute to brainstorming for the campus.

Dr. Ora Pescovitz, executive vice president for medical affairs and CEO of the U-M Health System, was the Executive Officer charged with responsibility for the NCRC vision and execution. Under her direction, U-M Medical School Dean Dr. James Woolliscroft served as the chair of the Directors Committee and the Internal Advisory Group, and coordinated the early stages of planning and execution pursuant to the hiring of an NCRC executive director.

A research conference and poster session was held at NCRC in June 2009. More than 100 faculty and staff attended and shared ideas on opportunities for the NCRC research community. The recommendation to pursue a Health Services Research cluster was endorsed in September 2009. Additional recommendations included:

- Creating a more innovative environment
- Guarding against simple expansion
- Identifying leadership to guide activities

Key RSP recommendations to pursue Imaging and Biointerfaces as technology “anchors,” and to create an interdisciplinary campus, with a focus on collaboration and entrepreneurship were also endorsed in December 2009.

Effective December 14, 2009, Dr. Joan Keiser assumed the role of interim managing director of NCRC. In February 2010, Dr. Pescovitz invited proposals for additional research clusters to leverage the technology anchors.

Occupancy of the administrative space commenced with move-ins on the east side of Huron Parkway in March 2010. In April 2010 an interdisciplinary faculty committee reviewed 20 proposals submitted in response to Dr. Pescovitz’s February announcement and identified a cohort of the top four:

- Translational Oncology Program
- Cardiovascular Research Cluster
- Distributed Health Technologies: the 7000M Project
- Interdisciplinary Energy Hub

These projects, described in detail on page 18, will be the beginning of the effort to bring under one roof the major scientific disciplines and all those who are part of the discovery-to-delivery chain, turning scientific breakthroughs into real, immediate benefits.

In May 2010 the decision was made to place the GMP (pharmaceuticals manufacturing) facility on the commercial market and to pursue related federal government funding opportunities in parallel. In June 2010, BoroPharm, the first private tenant, completed the effort to locate on site. Dr. David Canter was successfully recruited as new executive director of NCRC in June 2010.

■ KEY FACTS & FIGURES

Anticipated number of people on campus:

3,000 faculty and staff positions during next 10 years; potential in time to replace or exceed jobs lost when site was vacated

Major Highlights/Accomplishments of the First Year

IN THE YEAR following the purchase of what was a completely empty campus, U-M has engaged in an aggressive, extensive and wide-ranging planning process and achieved some significant milestones, including:

- About 300 employees who support research at the university are now working at NCRC. These employees in research support units play key support roles to operate our research infrastructure. Co-location of these units has already provided these groups with opportunities to strengthen relationships and work together.
- Two technology anchors have been identified and steps are under way to locate them to NCRC. The first is a world-class program in Biointerfaces, which includes an interdisciplinary mix of nanotechnology, microfluidics and sensors, cell and tissue engineering, and biomaterials and drug delivery. The second is a cutting-edge research cooperative of molecular, functional, and structural imaging.
- In December 2009 under the leadership of Cynthia Wilbanks, vice president for U-M Government Relations, NCRC hosted a House New Economy and Quality of Life Biosciences Subcommittee meeting. Legislators, innovators and business leaders from across the region came together at NCRC to discuss the impactful role bioscience can play in the Michigan economy.
- Efforts are under way to establish a Health Services Research initiative at NCRC, co-locating researchers who are experts in all aspects of health care delivery, quality, outcomes and policy. This will impact the future of health care nationally and worldwide.
- BoroPharm, a Michigan State University spin-off, became the first private sector tenant at NCRC. The move to U-M is part of BoroPharm's ongoing expansion plans and keeps a growing company in the state of Michigan. Extending beyond merely a landlord-tenant relationship, BoroPharm and U-M are exploring ways to develop student internships – both at the undergraduate and graduate levels – as well as faculty collaborations involving novel chemical synthesis platforms.
- The pursuit of partnerships with industry is also relevant to the lease of the GMP facility to private companies. NCRC will collaborate and aggressively partner with these companies to spur transformative research. The facility will soon be placed on the commercial market, and a small team continues to pursue federal funding opportunities related to the building.
- Acquisition of the former Pfizer property included bringing its wonderful childcare facility under the umbrella of the U-M's early childhood education network. The NCRC childcare facility is actively in use and hosted a robust "theater" program for school age children in summer 2010.
- In July 2010, NCRC was home to a national scientific conference hosted by the Center for Computational Medicine and Bioinformatics.
- NCRC hosted several major motion picture shoots since the purchase, including films featuring Clive Owen, Kathryn Keener, Pierce Brosnan, Marisa Tomei, Richard Gere and Ed Harris.



"The NCRC location provides us a terrific platform to continue to grow our company and partner with world-class researchers. We will be developing new products here. We are looking forward to a successful partnership here at the University of Michigan and in Ann Arbor."

— Todd Zahn, CEO
BOROPHARM

2008 2009



MARCH 2009

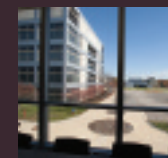
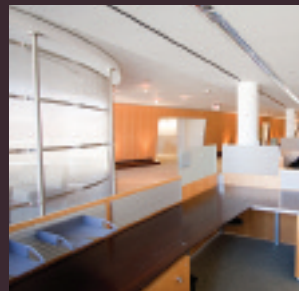
- University decision to fund former Pfizer campus purchase, memorandum of understanding developed in Medical School to contribute to purchase and commitment to ensure success

- Internal Advisory Group, composed of deans from major research schools/colleges and senior university leaders, formed to review and provide recommendations on strategic research and administrative decisions



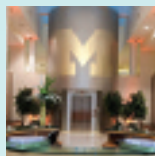
SEPTEMBER 2009

- Research Scientific Programming committee recommendation to pursue Health Services Research cluster, endorsed by Internal Advisory Group, Directors



DECEMBER 2008

- University decision to move forward with the purchase of former Pfizer campus, Regents approved negotiations



JUNE 2009

- Purchase successfully completed
- Renamed North Campus Research Complex



M NORTH CAMPUS RESEARCH COMPLEX



DECEMBER 2009

- Research Scientific Programming, Innovation, and Public-Private Partnerships Committees lay out a vision for an interdisciplinary campus, focus on collaboration and entrepreneurship

JUNE-AUGUST 2009

- University-wide participation campaign and launch of faculty committees tasked with evaluating alternative research programs and strategic directions of research

- Online *Call for Ideas* opened

- Decision to form Imaging and Biointerfaces technology "anchors"

NCRCTimeline



FEBRUARY 2010

- Ora Pescovitz, executive vice president for medical affairs, U-M, and CEO, UMHS announced the Health Services Research cluster, Biointerfaces and Imaging anchors, and invited proposals for additional research clusters



APRIL 2010

- Interdisciplinary faculty committee reviewed 20 proposals to form research clusters, four groups identified

2010



MAY 2010

- Decision to place GMP (pharmaceuticals manufacturing) facility on commercial market
- Pursue GMP related federal government funding opportunities in parallel

MARCH 2010

- Occupancy commenced with 100-400 building move-ins



JUNE 2010

- First private tenant on site
- David Canter successfully recruited as new executive director



N O R T H C A M P U S R E S E A R C H C O M P L E X

Research Model



"NCRC represents a unique opportunity for U-M to implement a cluster-based research environment developed by faculty from across the campus — an opportunity to lead the world in the next generation of academic research."

— Mark Burns, Chair and Professor,
Department of Chemical Engineering,
UNIVERSITY OF MICHIGAN

Mark Burns is one of a number of dedicated U-M faculty members whose contributions of time and ideas have continued to shape our forward plan.

OVER THE COURSE OF several months, faculty committees explored various concepts and ideas for organizing research at NCRC. They considered areas such as innovation, public-private partnerships, and IT and cores infrastructure. They also weighed areas of research strength across U-M and the strategic playing field in the decades to come. Commissioned to "dream big," these committees ultimately proposed a research model that is geared to foster cross-discipline collaboration.

At the peak of the NCRC research planning effort, the National Research Council (NRC), which advises the major research funding entities of the federal government, released a provocative call for a realignment of the nation's research efforts and funding in a report titled *A New Biology for the 21st Century*. The "new biology" described by the NRC has key parallels with the model proposed for NCRC, highlighting and reinforcing new ways of doing research.

A key element of the NCRC research model is collaboration between investigators who are technology inventors and those who are technology users. The primary goal is the formation of intellectual partnerships between the two such that the end-users help the inventors improve their technologies, and the inventors help the end-users improve their application of the technologies.

Research Technology Clusters are collaborations between research investigators with two main objectives:

- Improve and advance a given technology area
- Apply state-of-the-art technologies to other research problems

The technology clusters comprise nationally and internationally recognized scientists who are working to advance science and apply cutting-edge solutions to new research fields. Their expertise will support the clusters' research enterprise and be available to other researchers at NCRC, U-M, the state and the nation. More information on the technology clusters is available on page 18.

Research Technology Anchors: Biointerfaces and Imaging

The first two research technology anchors to be developed at NCRC involve imaging technologies and a new blueprint of academic research that emphasizes the interface between life sciences, physical sciences and engineering, called "Biointerfaces."

The Biointerfaces technology platforms will build an interdisciplinary mix of biomedical research technologies such as nanotechnology, microfluidics and sensors, cell and tissue engineering, biomaterials and drug delivery. These will have applications toward important medical challenges.

Imaging technologies include techniques such as Magnetic Resonance Imaging (MRI), Positron Emission Tomography (PET) and Fluorescence Imaging, which will be applied to provide answers to various research and clinical questions. Imaging will provide opportunities for collaboration in molecular, functional, and structural characterization.

Health Services Research

THE UNIVERSITY OF MICHIGAN is already a national leader in health services research (HSR), however, these efforts span numerous schools and colleges, and almost every clinical department within the Health System. In September 2009, the Directors Committee approved a proposal to co-locate hundreds of faculty and staff at NCRC in the study of the "most effective ways to organize, manage, finance, and deliver high quality care; reduce medical errors; and improve patient safety" (Agency for Healthcare Research and Quality, 2002).

Co-location of these researchers is expected to:

- Foster new, multidisciplinary collaborations
- Allow for the creation of shared research cores in the areas of data management and research methods
- Attract and retain faculty leaders, essential for continued growth and visibility in high priority areas
- Strengthen U-M's impact on regional, national and global healthcare policy decisions

The HSR initiative will boost the U-M faculty's impact on the nation's health care and health service delivery worldwide. Dr. Rod Hayward, a professor in both U-M Medical School and School of Public Health, is leading the planning team.

"This will transform the way we approach health services research at the University of Michigan, and help us impact the national and global debates about health care in new ways," said Hayward. "Our

The HSR initiative will boost the U-M faculty's impact on the nation's health care and health service delivery worldwide.

mission will be to use this opportunity for collaboration to maximize our efforts to enhance the health and well-being of local, national and global populations with innovative, inter-disciplinary health services research. We plan to help influence policies that make people well, and keep them well."

This plan brings together close to 575 U-M faculty and staff, and non-university researchers involved in ground-breaking research into the delivery of health care services. The first seeds were planted in August 2010, when 100 faculty members and staff began moving into building 520. Among the groups that moved were the Michigan Surgical Collaborative for Outcomes Research and Evaluation (M-SCORE), led by Dr. John Birkmeyer and the Michigan Breast Oncology Quality Initiative (MiBOQI), led by Dr. Samuel M. Silver. Faculty from the Medical School, School of Public Health and School of Nursing will also join the first groups in building 520. Eventually, researchers from the Ann Arbor Veterans Administration and U-M Schools of Pharmacy and Dentistry, among others, are expected to be a part of this initiative.

■ KEY FACTS & FIGURES

Number of gross square feet:

1.98 million

Number of gross square feet of research space:

1.2 million

Number of gross square feet of office space:

420,000

NCRC Research Clusters



"I think that the use of space is crucial for collaboration and in turn innovation. MICHHR was among the first group of people that moved into NCRC and we are already noticing the increase in collaboration and communication within and between groups. I love it here!"

— Aalap Doshi, Interaction Designer and Business Analyst, MICHHR

THE INITIAL FOUR lab-based research clusters are:

- Translational Oncology Program (Dr. Max Wicha)
- Cardiovascular Research Cluster (Dr. David Pinsky)
- Distributed Health Technologies: the 7000M Project (Dr. David Burke)
- Interdisciplinary Energy Hub (Dr. Dennis Assanis)

The **Translational Oncology** program identifies a cohort of 12 principal investigators from the Medical School and College of Pharmacy to collaborate on the development of targeted cancer therapies. The multidisciplinary teams will develop new approaches to treat cancer based on its molecular underpinnings and carry these concepts through the identification, testing and uptake of novel medicines, along with robust diagnostics to track program progress and outcomes, including novel imaging technologies to aid in drug development and track therapeutic outcomes.

An initial investment in a **Cardiovascular Research Center** will bring together several Medical School principal investigators from the Center for Arrhythmia Research group, as well as additional faculty from Cardiovascular Medicine, Surgery, College of Engineering, Molecular and Integrative Physiology, and Cell and Developmental Biology. These successful researchers will have the opportunity to expand collaborations and identify new synergies with an emphasis on the epigenetic basis and molecular mechanisms of cardiac rhythm and muscle function. This program has already significantly increased the understanding of the fundamental

mechanisms of life-threatening cardiac rhythm disturbances and structural heart disease. Additional clusters of cardiovascular researchers focused on vascular biology, cardio-vascular genetics, heart failure and biomedical technology programs are slated to follow.

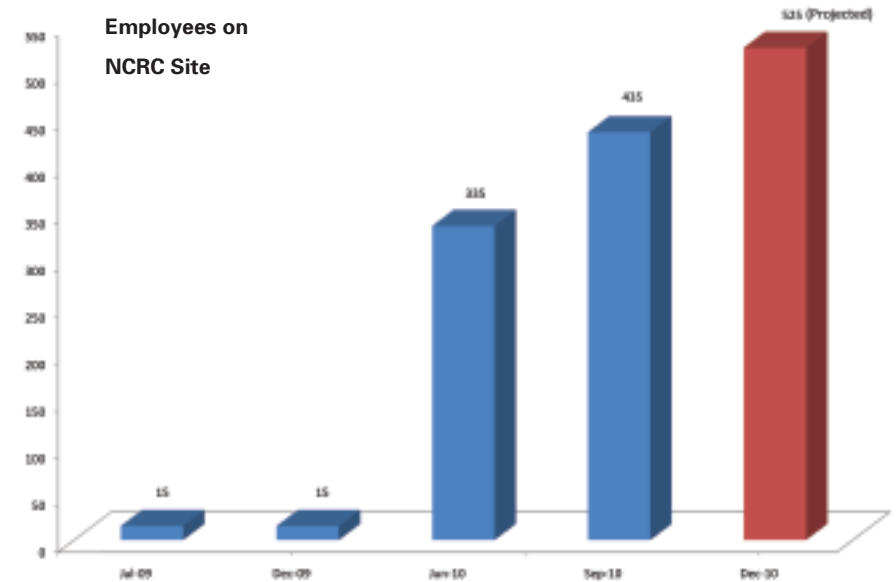
The proposal to establish an **Interdisciplinary Energy Hub** outlines how several principal investigators representing the College of Engineering and the School of Natural Resources and Environment will work with the goal of developing collaboration among students, research, and practitioners from all relevant disciplines in a unique learning-living-working environment. The goal of establishing this hub at NCRC will be to create state-of-the-art demonstrations of transformative and sustainable energy technologies on a variety of scales.

The **Distributed Health Technologies** program is a cross-disciplinary research team focused on developing advanced low-cost technologies for individual health care. The project will design, build and test technologies that are compatible with large-scale distribution to the general community. Engineering, medical and manufacturing expertise are essential for each step of the development process. The investigators represent the Medical School, College of Engineering, the School of Public Health and commercial manufacturing.

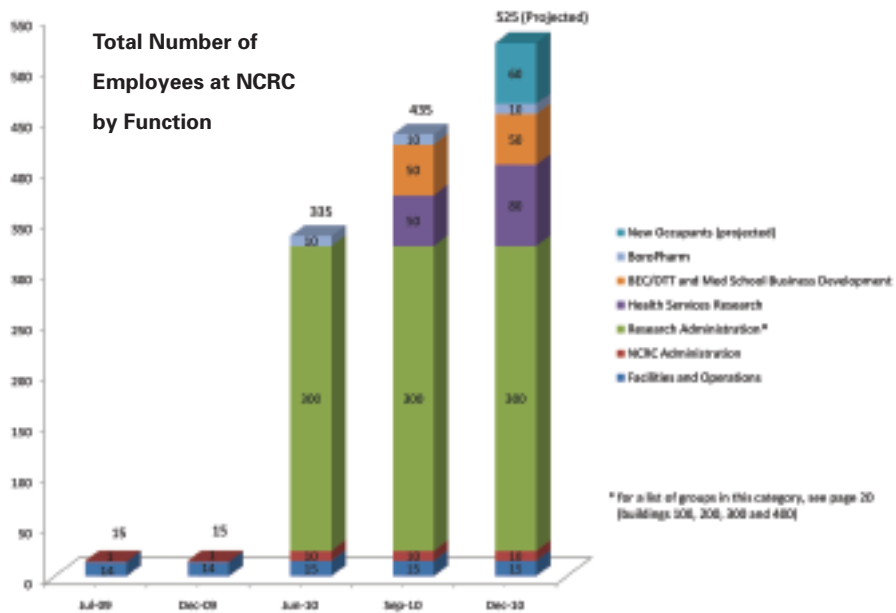
Indicators of Growth

- Rapid growth in the number of employees on site in 2010, especially in the first half
- A wide range of functions support and grow the mission of NCRC
- 44 percent of total net assignable office space occupied

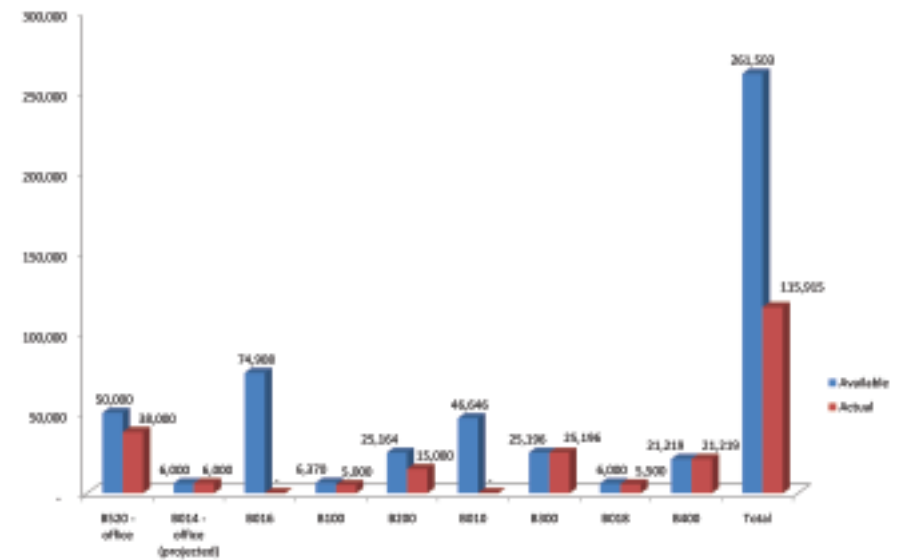
Total Number of Employees on NCRC Site



Total Number of Employees at NCRC by Function



Office Space Occupied at NCRC by Building and Total ("Available" Net Assignable Square Feet)





■ KEY FACTS & FIGURES

Parking:

More than 2,800 existing spaces (Gold, Blue, Yellow, Orange and visitor lots and all U-M operators)

Transportation:

NCRC is currently served by the UMHS Intercampus bus service with inbound/outbound stops on north and south Huron Parkway. The Orange commuter lot (NC90) is served by the U-M Commuter and Northwood buses. An additional Orange commuter lot is projected to open in September 2010.

NCRC Occupants to Date

BUILDING 100

Comprehensive Cancer Center Office of Development

BUILDING 200

Comprehensive Cancer Center Community Outreach Office

Cancer Center – Specialized Project of Research Excellence (SPORES)

Clinical Research Calendar Review & Analysis Office (CRAO)

Institutional Review Board for the Medical School (IRBMED)

BUILDING 300

Cancer Center – Clinical Trials Office (CTO)

Medical School Information Services (MSIS)

Extracorporeal Life Support Organization (ELSO)

Southwest Oncology Group Clinical Trials Office (SWOG – CTO)

BUILDING 400

Michigan Institute for Clinical & Health Research (MICHHR)

BUILDING 520

Health Services Research (HSR)

Business Engagement Center (BEC)

Office of Tech Transfer (OTT)

Medical School Business Development

Medical School Office of Research

Medical School Office of Research and Grants

BUILDING 40

BoroPharm

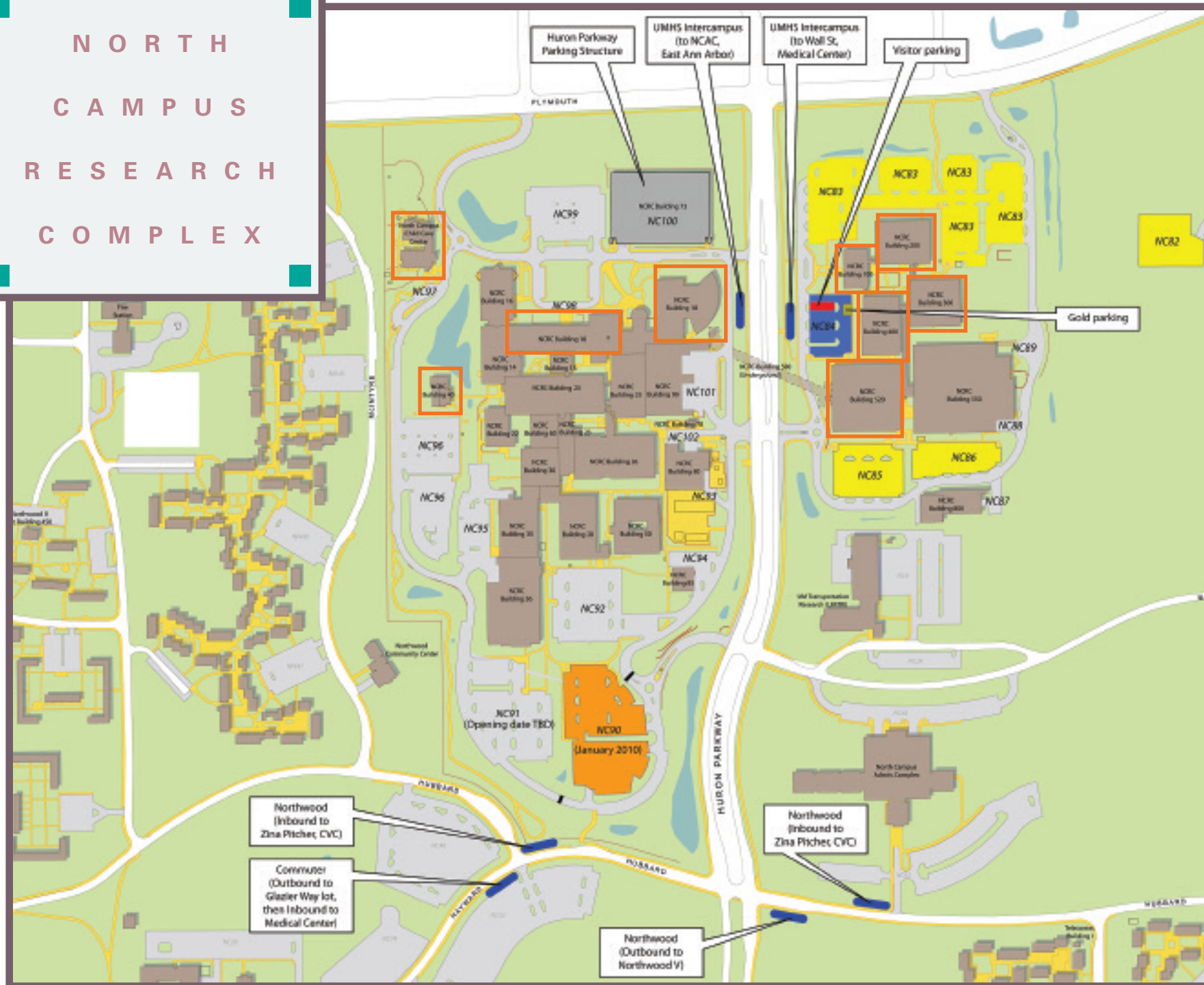
BUILDINGS 10 AND 18

NCRC Administration

BUILDING 75

Childcare Center

NORTH CAMPUS RESEARCH COMPLEX



The Vision for NCRC: An interview with the Dean of the Medical School



*James O. Woolliscroft, M.D.
Dean, U-M Medical School
Lyle C. Roll Professor of Medicine*

When did you start thinking about the North Campus Research Complex?

As soon as it became clear that the Pfizer property was not going to be occupied by a private-sector owner, several of us at the Medical School began thinking about the opportunity to establish a new research campus at U-M. We began envisioning the transformational potential of this kind of physical expansion and worked hard throughout the year to persuade our colleagues across the Health System and across the University of the wisdom of undertaking such an acquisition.

What was most attractive to you about this opportunity?

Lack of research space has been a constraining factor in realizing the full potential of our work. NCRC provides an ideal opportunity to expand our growing research enterprise, and it will help us to recruit and retain the finest scientists in many fields of study. In addition, the NCRC campus affords unprecedented opportunities to co-locate investigators based on affinities; leverage research strengths and reduce barriers in key technologies; and develop new partnerships with other universities, government and industry. It is a phenomenal opportunity to do science differently and further the University's mission.

What is the value of NCRC to the U-M Medical School? To the Health System? To U-M?

NCRC provides an incredible opportunity, which is why Health System senior leadership committed significant reserves to fund the majority of the purchase price and a continuing revenue stream for

up to 10 years to occupy the site. The laboratory space on the new campus is equivalent to two of our recently constructed Biomedical Science Research Buildings (BSRB) but it will be available far sooner and for far less initial cost. There is simply no more effective way available today to gain the space the Medical School needs to continue to grow our activity, maintaining our leadership position and enabling our global impact. For the Health System, NCRC provides significant administrative space expansion and the efficiencies offered by co-location. For U-M, it is a transformative opportunity, part of a vision to enable faculty members from different disciplines to interact in novel and exciting ways.

What does NCRC mean for the Medical School's ability to partner with other areas of U-M, and outside partners such as the Veterans Affairs Ann Arbor Healthcare System and businesses in the private sector?

The primary purpose of NCRC is to bring people together from all disciplines and across schools and colleges, enabling interactions and insights that further our research objectives. The objective of this new campus is to enable incredible research and education. Medical School department chairs and center directors demonstrated visionary leadership in supporting the business case and the subsequent purchase of NCRC. We now have an opportunity to push the boundaries of interdisciplinary research and recruit the best faculty and researchers to carry the mission forward.

NCRC Planning and Advisory Committees

Directors Committee

Chair: James O. Woolliscroft, Dean, Medical School

Internal Advisory Group

Chair: James O. Woolliscroft, Dean, Medical School

Expansion Coordination Group

Chair: Joan Keiser, Director, NCRC

Facilities and Logistics Committee

Chair: Deanna Mabry, Associate Director, Planning and Design

Research Scientific Programming Committee

Chair: Steven Kunkel, Medical School/Pathology and Senior Associate Dean for Research

Innovations Team

Co-Chairs: Mark Burns, College of Engineering, Chair, Chemical Engineering, Jeffrey Myers, Medical School/Pathology, Max Wicha, Medical School/Internal Medicine, Director, Cancer Center

IT and Cores Team

Co-Chairs: Ulysses Balis, Medical School/Pathology
Robert Lyons, Medical School/Biological Chemistry

Research Assessment Team

Co-Chairs: Kenneth J. Pienta, Christin Carter-Su, Eric Fearon

Communications Committee

Chair: Kara Gavin, Director, Public Relations, UMHS

Public and Private Partnerships Committee

Co-Chairs: James Baker, Medical School/Internal Medicine
Marvin Parnes, Office of Vice President of Research

The following represent a number of faculty-led efforts to develop proposals for research investments at NCRC. Some of these will move forward. However, some others, although they represent valuable research ideas and initiatives, were not identified for investment at this time.

Neurosciences Committee

Co-Chairs: Theresa Lee, LS&A/Chair, Psychology
Karin Muraszko, Medical School/Chair, Neurosurgery

Health Services Research Committee

Co-Chairs: John Birkmeyer, Medical School/Surgery
Eve Kerr, Medical School/Internal Medicine and VA Ann Arbor

Drug Discovery Committee

Co-Chairs: Scott Larsen, College of Pharmacy/Medicinal Chemistry
Richard Neubig, Medical School/Pharmacology

Biointerfaces Committee

Chair: Joerg Lahann, College of Engineering/Chemical Engineering

Imaging Committee

Co-Chairs: Jeffrey Fessler, College of Engineering, Brian Ross, Medical School/Radiology, Jonathan Rubin, Medical School / Radiology

In the months following the purchase, several committees and groups were actively engaged in shaping the vision for the NCRC campus, strategic planning and making recommendations. The NCRC administration gratefully acknowledges the significant contribution of all the committee chairs and members during the first year of its operation.

The NCRC Team

*Committed to
supporting the
NCRC mission ...*





*... and working to
realize its immense
potential.*

Future Directions



It is an extraordinary opportunity to spark revolutionary research and discovery with significant worldwide impact.

- The NCRC space, laboratories and other facilities will support the continued growth of the status of the University of Michigan as one of the foremost research institutions in the world. We expect NCRC to build on our current research efforts, which Steven Forrest, U-M vice president for Research, recently reported as surpassing \$1 billion in annual spending. As Forrest notes, by leveraging the interdisciplinary possibilities that are opened up through the use of NCRC, the university can maintain a very significant growth rate—beyond many of our competitors.

- President Mary Sue Coleman and other U-M leaders view this as a once-in-a-generation opportunity to stand out among higher education institutions. The new complex and commitment to innovative research will be a draw for recruiting top-notch faculty and will enhance our chances to secure additional outside funding for research grants.

- NCRC is a commitment to U-M's research mission as well as the economy of the state of Michigan. The university expects to create jobs and attract investment with the acquisition of NCRC.

KEY FACTS & FIGURES

Location:

South of Plymouth Road in northeast Ann Arbor, bordering U-M North Campus

Number of buildings: 28

Number of land parcels: 4

(straddling Huron Parkway, with a tunnel between)

THE REGENTS OF THE UNIVERSITY OF MICHIGAN

Julia Donovan Darlow, Ann Arbor

Laurence B. Deitch, Bingham Farms

Denise Ilitch, Bingham Farms

Olivia P. Maynard, Goodrich

Andrea Fischer Newman, Ann Arbor

Andrew C. Richner, Grosse Pointe Park

S. Martin Taylor, Grosse Pointe Farms

Katherine E. White, Ann Arbor

Mary Sue Coleman, *ex officio*

THE NCRC KEY STAKEHOLDERS ADVISORY TEAM

David Canter (lead), *Executive Director, NCRC*

John M. Carethers, *Chair, Department of Internal Medicine, Medical School*

Stephen Forrest, *Vice President for Research*

Philip J. Hanlon, *Provost and Executive Vice President for Academic Affairs*

Steven L. Kunkel, *Senior Associate Dean for Research, Medical School*

Michael W. Mulholland, *Chair, Department of Surgery, Medical School*

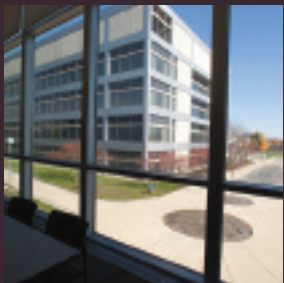
David C. Munson, Jr., *Robert J. Vlasic Dean of Engineering*

Ora Pescovitz, *Executive Vice President for Medical Affairs*

Timothy Slottow, *Executive Vice President and Chief Financial Officer*

James O. Woolliscroft, *Dean, Medical School*





North Campus Research Complex

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For business-related queries, contact
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bec.umich.edu