

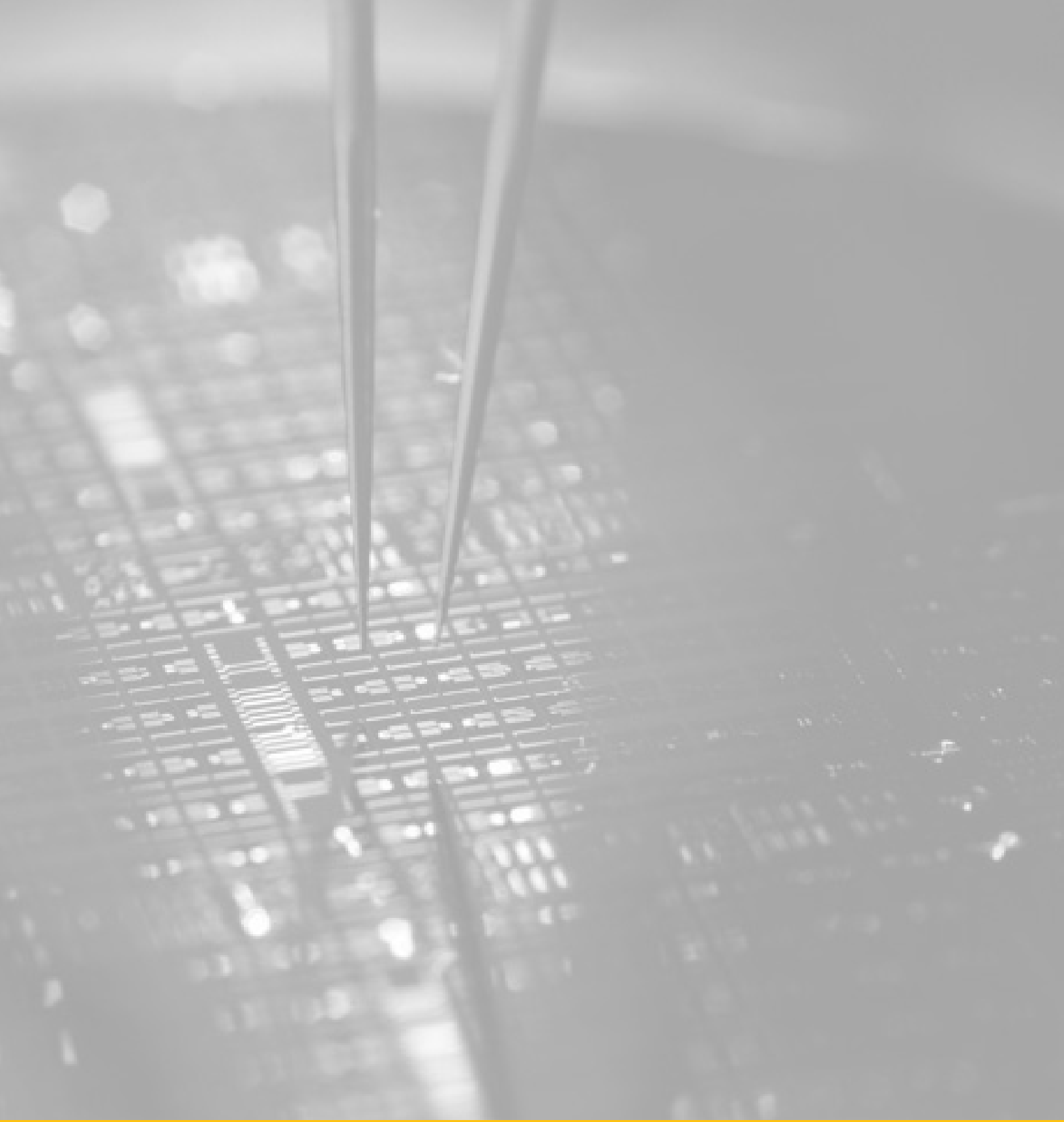
UNIVERSITY OF WISCONSIN-MILWAUKEE
RESEARCH FOUNDATION

2012 Annual Report



Newport

426A
SERIES



POWERFUL IDEAS | **PROVEN RESULTS** |[®]



Leadership Message

November 26, 2012

The University of Wisconsin-Milwaukee is in transition. We are adapting to ensure that our university continues to add value to our community while adhering to the core values that make UWM a great institution. The UWM Research Foundation is a key part of this transition.

Innovative economies are built on strong companies and strong institutions. The UWM Research Foundation is helping bring these together through programs that make UWM an engine for change in Milwaukee. The UWM Research Foundation is focused on producing value for stakeholders and measurable results. As you will see from this report, the UWM Research Foundation is demonstrating results in fundamental areas – including partnerships, entrepreneurship and technology commercialization.

The transition at UWM and the work of the UWM Research Foundation would not be possible without the contributions of many important stakeholders. The faculty and staff at UWM are proud professionals who continue to work at the edge of discovery, and UWM students are vital to the discovery process as well as a rich source of entrepreneurial ideas. The business community is stepping up in new and unprecedented ways that will ensure that they can turn to UWM to help them generate the next generation of products, services and employees. And the community and local foundations are committing support that will help our institution continue to thrive.

Thank you for making UWM your partner in Milwaukee's future.

Sincerely,



A handwritten signature in black ink, appearing to read "M. R. Lovell".

Dr. Michael R. Lovell

Chancellor
University of Wisconsin-Milwaukee



A handwritten signature in black ink, appearing to read "Sujeet Chand".

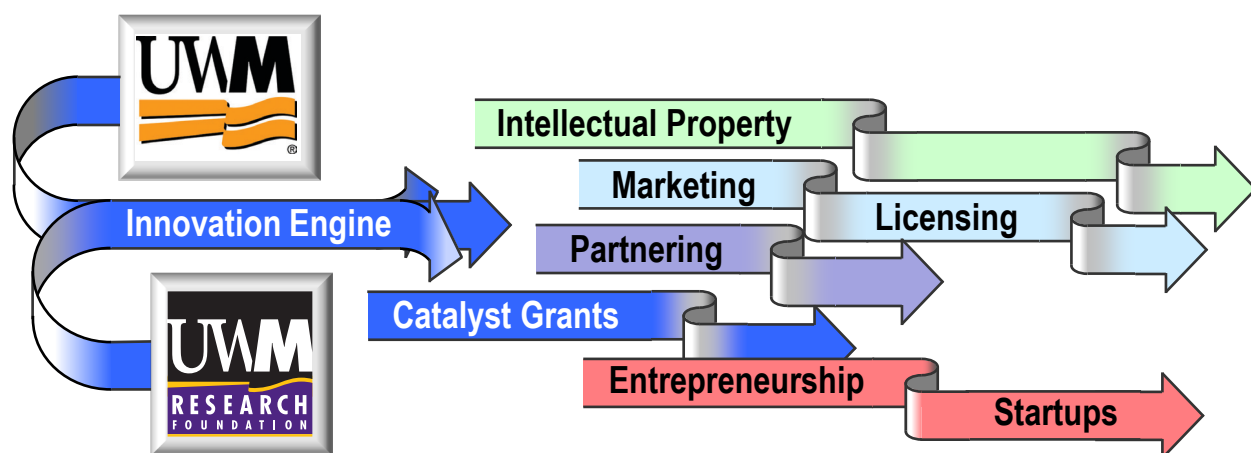
Dr. Sujeet Chand

Chairman, UWM Research Foundation
Senior Vice President, Rockwell Automation

Executive Summary

The mission of the UWM Research Foundation (UWMRF) is to foster research and innovation at the University of Wisconsin-Milwaukee (UWM). That mission links the discovery of knowledge with making that knowledge broadly available and useful through commercialization and other means.

Since the formation of the UWM Research Foundation in 2006, UWMRF and UWM have undergone a period of significant growth – in partnership, programs and infrastructure. This growth is built on UWM's core values while leveraging new approaches. The University of Wisconsin-Milwaukee and the UWM Research Foundation are creating an "Innovation Engine" that will make a strong UWM central to a strong Milwaukee regional innovation economy.



The UWM Research Foundation programs support the "Innovation Engine" that helps drive creative ideas and bring those ideas to market through licensing, partnering and startup companies.

Building a Great Institution for Milwaukee

In June of 2012, the University of Wisconsin-Milwaukee celebrated the opening of a new facility in downtown Milwaukee for the new UWM Joseph J. Zilber School of Public Health and broke ground on a \$53 million addition to the Great Lakes Water Institute for the new UWM School of Freshwater Sciences. These initiatives underscore how UWM is adapting to meet the changing needs of our community and our business environment.

Work continues on the UWM Innovation Campus adjacent to the Milwaukee County Regional Medical Center, where the UWM Real Estate Foundation will open the first building, an Innovation Accelerator, in 2013. Planning is under way for a larger facility funded by the State of Wisconsin, which will house engineers and other scientists who collaborate with the Medical College of Wisconsin (MCW), Children's Hospital of Wisconsin, Froedtert Hospital, the BloodCenter of Wisconsin and other clinical partners. Leadership at UWM and MCW are exploring new programs that will strengthen education and discovery at both institutions through greater linkages.

On UWM's main campus, work is under way for a new interdisciplinary sciences building, and the newly acquired northwest quadrant (formerly the site of Columbia-St. Mary's Hospital) is the new home to the UWM Honors College and other programs. UWM continues to build a great institution that will serve Milwaukee and help our economy thrive in the next century.

UWM Research Foundation – Building UWM’s Innovation Engine

The UWM Research Foundation programs are helping create the UWM “Innovation Engine.” With key programs such as the Catalyst Grant Program, the UWM Research Foundation is building a culture of innovation and seeding promising ideas. UWMRF is helping support partnering efforts in water, energy and drug discovery. The UWM Research Foundation is also building a portfolio of intellectual property and linking that asset to partners through technology marketing and licensing efforts. Efforts to support faculty startups are being expanded to encourage student entrepreneurship.

Measurable Results

This “Innovation Engine” is producing measurable results. As highlighted in the following sections, these results include: a growing portfolio of patent applications and issued patents, investments by partner companies in research, completed license agreements, and the launch of new companies. Equally as important, these programs are helping a new generation of students – who study and conduct research with UWM faculty – and preparing them for successful careers built on innovation.

Innovation Campus – a New Home for Innovation

The UWM Research Foundation efforts are linked closely with the UWM Real Estate Foundation, which is leading efforts to create the UWM Innovation Campus adjacent to the Milwaukee County Regional Medical Center. Together these organizations are helping reshape the future of University of Wisconsin-Milwaukee and the Milwaukee region.



The UWM Innovation Campus will be home to facilities that include the UWM Innovation Accelerator (opening in 2013), where faculty and students will collaborate to develop ideas and turn them into reality.

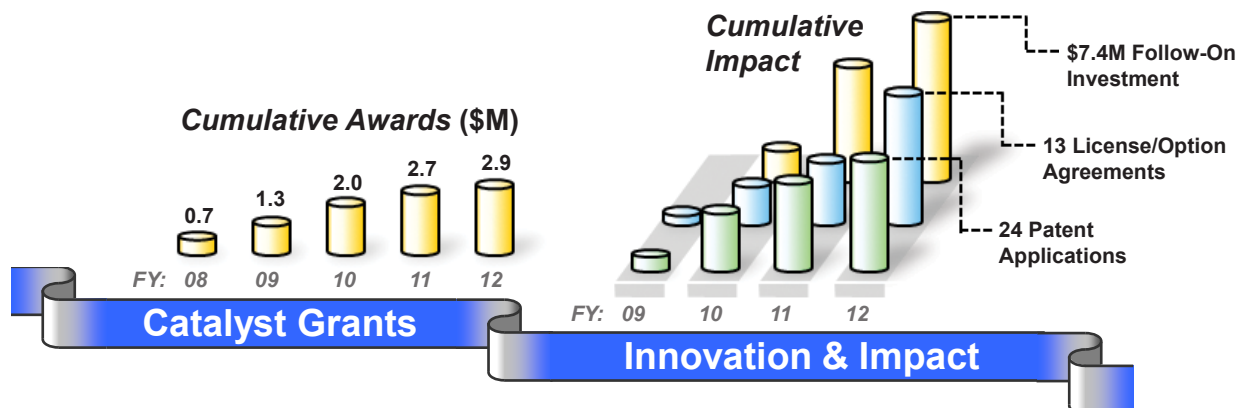
This progress would not be possible without the support of donors, stakeholders and community partners. We are pleased to present you with this update on the work you have made possible.

Catalyst Grant Program

The UWM Research Foundation's Catalyst Grant Program seeds promising early-stage research and fosters commercialization of technology in key areas. It has proved to be a powerful tool to foster innovation, advance promising ideas and strengthen partnerships in key industry segments. Thanks to the generous support of the Rockwell Automation Charitable Corporation, the Lynde and Harry Bradley Foundation, and the Richard and Ethel Herzfeld Foundation, the program has awarded more than \$2.9 million to support innovative work at UWM. Recently, GE Healthcare announced its support for the Catalyst Grant Program with a four-year, \$1 million commitment to help foster imaging research.

Growing Impact on Innovation at UWM

The impact of the Catalyst Grant Program continues to grow. Research and scholarship are central to the university's mission, and the program has resulted in more than 70 peer-reviewed publications through the combined efforts of undergraduate and graduate students, postdoctoral researchers, and UWM faculty. The program is helping generate intellectual property. In five years, 83 invention disclosures (the first step in the patent process) have been directly tied to the program. The Catalyst Grant Program has resulted in 24 patent filings, and, to date, six U.S. patents have been granted to the UWM Research Foundation linked to catalyst projects. In addition, eight option agreements and five license agreements have resulted from catalyst projects. These agreements indicate a firm commitment by commercial partners to develop and commercialize UWM technologies. More than \$7.4 million in follow-on investments in UWM technology have been linked to the program in the form of additional research grants, internal corporate technology investments and venture investments in related startup companies.



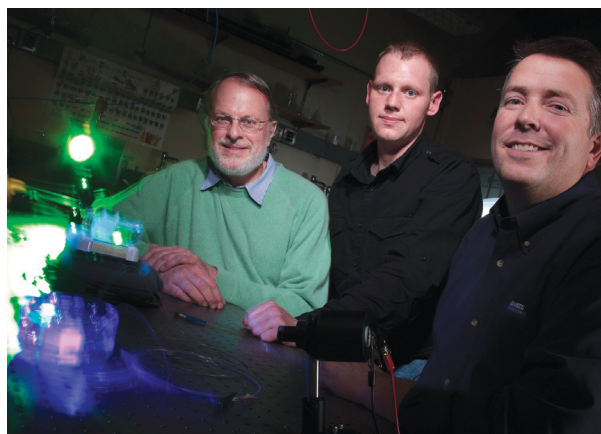
Helping Grow Industry Ties in Energy, Water and Drug Discovery

Since its inception, the Catalyst Grant Program has not only helped foster good research with strong commercial potential, but has also helped UWM grow ties with key regional industries. Catalyst grants helped launch an energy industry research consortium that has grown to become the Wisconsin Energy Research Consortium (WERC). As UWM and the Milwaukee region seek to develop the water industry, the Catalyst Grant Program has aligned with that objective – with grants that helped form water-related startup company HydroTech Innovations and helped build a development partnership with local water industry company Advanced Chemical Systems. Recent awards continue this strategy with projects linked to the Milwaukee Institute for Drug Discovery (MIDD), a new initiative at UWM that is linking UWM scientists with researchers, clinicians and business people throughout the region to help commercialize new therapeutics.

Developing New Catalyst Partnerships

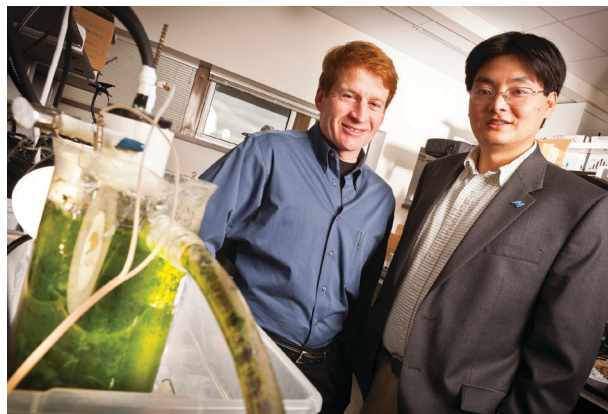
The Catalyst Grant Program was launched in 2007 with the support of the Rockwell Automation Charitable Corporation with an emphasis on software, materials and devices. Starting in 2008, support from the Bradley Foundation allowed the program to focus broadly on innovation and commercialization – impacting researchers in a variety of disciplines. The Richard and Ethel Herzfeld Foundation joined in supporting the program starting in 2010 and in 2012 committed a four-year gift to support catalyst grants and operations at the UWM Research Foundation.

In September 2012, GE Healthcare announced its support for the Catalyst Grant Program through a \$1 million commitment over four years to foster research in computational imaging as part of a larger commitment that includes support to educate the GE workforce and create a pipeline of new talent.



ACS Receives SBIR Award: Dr. Peter Geissinger (left), shown with his postdoctoral researcher Dr. Paul Henning (center) and partner Tom Dougherty, President of Advanced Chemical Systems (ACS), leveraged Catalyst support to secure a small business innovative research (SBIR) grant from the National Science Foundation (NSF) in November of 2011. The company has executed a license agreement with UWMRF and is working to secure venture investment to help bring a new real-time water sensor to market.

Startup Company Launched: Dr. Jason He (right) received a catalyst grant in 2011. Working with entrepreneur Mark Murphy, he launched HydroTech Innovations, LLC, to explore commercial uses for his innovative water treatment technologies. He, Murphy and his graduate student, Kyle Jacobson, received an NSF I-Corps grant, which put the team through a rigorous six-month program to validate the commercial market.



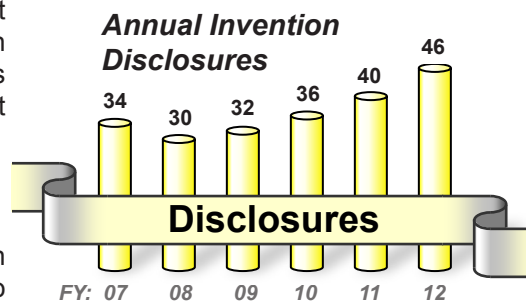
Yang Moves Toward Commercialization: Catalyst support helped Dr. Ching-Hong Yang develop his antibiotic compounds, which can be used in plants and humans. Working with the UWM Research Foundation, Yang developed a business plan and pitched the idea to investors at a recent UWMRF First Look Forum. He is moving toward commercialization, with the launch of a startup company, T3 BioSciences.

Patenting and Licensing

Ideas are at the heart of innovation. But ideas are not enough. In order to have an impact, ideas must be developed, and partnerships with companies are one of the best ways for university-based researchers to develop and adapt their ideas for the marketplace. The UWM Research Foundation has a system to identify promising ideas – through intellectual property management – and link those ideas to commercial partners through marketing and licensing efforts. This process complements the discovery process and creates partnerships that benefit both the university and partner companies.

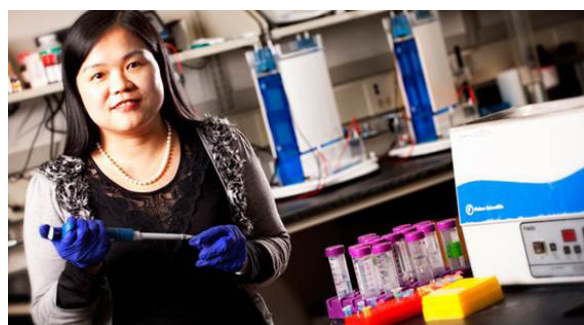
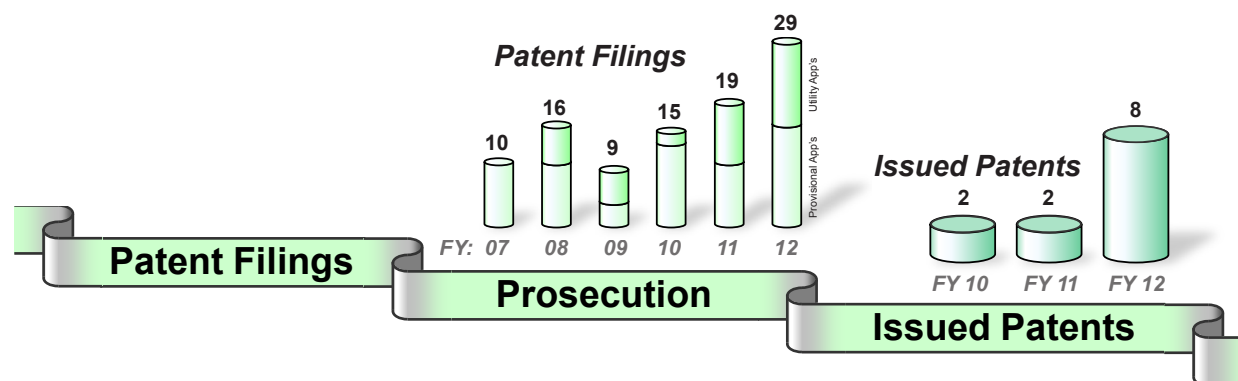
Capturing Ideas – Invention Disclosures

The intellectual property management process starts with invention disclosures, and these disclosures continue to grow. Through a secure online portal, UWM researchers can submit their ideas and collaborate with the UWM Research Foundation to assess and protect these ideas. At this step in the process, an assessment of the technology and the intellectual property is coupled with an assessment of likely markets. Working with the inventor, the UWM Research Foundation sets a strategy to protect ideas and advance them along the continuum toward commercialization.



Protecting Ideas – Patenting Process

The UWM Research Foundation manages a series of steps to go from an idea to an issued patent. The UWMRF portfolio continues to grow with an increasing number of applications each year and a growing number of matters in prosecution. The UWM Research Foundation continues to refine its infrastructure and processes to manage this growing challenge. In FY 2012, the UWM Research Foundation filed 29 patent applications and was issued eight new patents by the US Patent and Trademark Office.



Capturing New Ideas: Dr. Xiaohua Peng is developing a new approach to targeting tumors; the work is the subject of a patent application recently filed by the UWM Research Foundation. Dr. Peng has developed “triggers” that release a chemotherapy agent at the site of a tumor in response to conditions that typically exist near the tumor and not in other parts of the body, resulting in a more targeted delivery of these drugs.

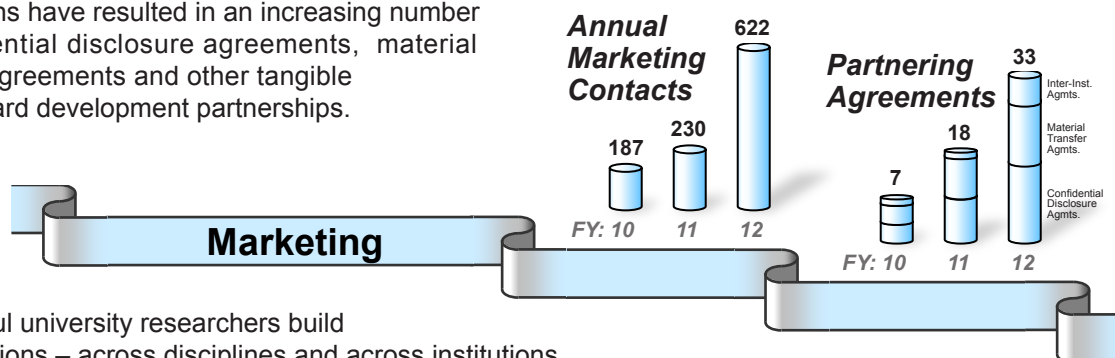
Software and Copyrights – Evolving to Keep Pace With Innovation

University technology transfer has traditionally focused on patentable inventions. But the face of innovation is changing, and the UWM Research Foundation is evolving to keep pace with those changes. Software applications are one way in which new ideas are coming to market. The UWM Research Foundation is increasingly managing copyrighted software and other works and using its structured process to identify commercial partners and a path to market.

Copyright Matters

Capitalizing on Ideas – Making Connections

When the UWM Research Foundation invests resources to protect an idea, those efforts are complemented by efforts to market the idea and find commercial partners. Working with the inventor, the UWMRF researches a list of prospects and begins a structured process to connect with those prospects. The process is managed using a database that is linked to the intellectual property management process. The connections made through this process are leading indicators of licensing success. The UWM Research Foundation has made a growing number of connections, with more than 600 contacts in FY 2012. These connections have resulted in an increasing number of confidential disclosure agreements, material transfer agreements and other tangible steps toward development partnerships.



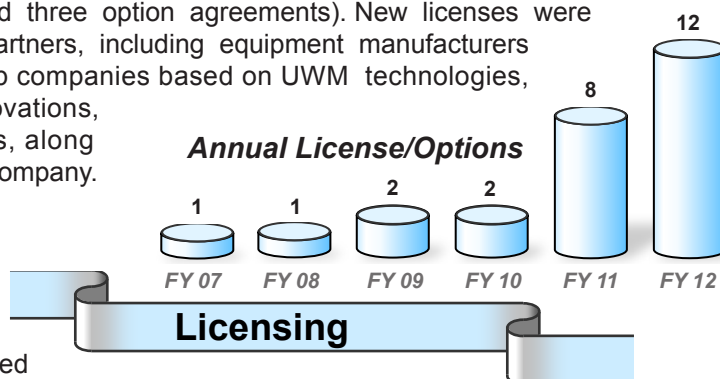
Marketing

Successful university researchers build collaborations – across disciplines and across institutions.

The UWM Research Foundation increasingly works with other academic institutions to commercialize ideas developed jointly with other universities. In FY 2012, UWMRF completed five new inter-institutional agreements with other universities and now collaborates with Duke, University of Hawaii, University of Southern California, Medical College of Wisconsin, Marquette University and others.

Licensing Activities

License and option agreements are one of the best indicators of the success of the UWM Research Foundation's commercialization efforts. In FY 2012, UWMRF completed 12 new agreements (including nine license agreements and three option agreements). New licenses were completed with several water industry partners, including equipment manufacturers and a national engineering firm. Startup companies based on UWM technologies, HydroTech Innovations and Metria Innovations, also completed licenses and options, along with an international communications company. Several companies are exploring UWM technologies under option agreements, including an east-coast-based pharmaceutical startup company. The UWM Research Foundation also completed three new licenses related to the copyrighted TCARE assessment system.



Licensing





UWMRF Intellectual Property Portfolio

The UWM Research Foundation manages a growing portfolio of intellectual property based on research conducted at UWM and the strength of programs such as the Catalyst Grant Program.




















Catalyst Grants

Disclosures













Provisional App's.

-  **Kurt Beschoner**, 1335 – US00, 10/24/12
Biofedelic slip test device
-  **James Cook**, 1293– US00, 3/14/12
TB compounds
-  **James Cook**, 1319– US00, 9/21/12
Asthma compounds
-  **Jennifer Doering**, 1306– US00, 10/22/12
Infant sleep pod
-  **Marija Gajdardziska-Josifovska**, 1294 – US00, 6/12/12; *Graphene monoxide*
-  **Marija Gajdardziska-Josifovska**, 1337 – US00, 10/24/12; *Graphene bandgap*
-  **Zhen He**, 1240 – US01, 5/1/12
Enzymatic water softening
-  **Chiu-Tai Law**, 1324 – US00, 11/14/12
Fiber optic current sensor









Utility Filings

-  **Joseph Aldstadt**, 1207 – US01, filed 2/21/12
Improved photon trapping inst.
-  **Ryo Amano**, 1227 – US02, 10/18/12
Aeration system
-  **Brian Armstrong**, 1292 – WO00, 11/18/12
MRI compatible camera
-  **Brian Armstrong**, 1124 – US02, 12/27/11
Motion tracking system (CN)
-  **Brian Armstrong**, 1165 – US01, 5/19/11
Gen VIII motion tracking target
-  **Alexander Arnold**, 1250 – US01, 8/26/12
Vitamin D inhibitors
-  **Junhong Chen**, 1225 – US01, 2/18/12
Nano-bio sensor
-  **James Cook**, 1268 – US01, 4/27/12
GABA compounds
-  **David Frick**, 1287 – WO00, 9/7/12
Inhibitor compounds
-  **Peter Geissinger**, 1244 – US01, 10/18/12
Fiber optic sensors
1244 – WO00, 10/18/12
-  **Rick Goetz**, 1222 – US01, 5/8/12
Fish immune boost diet
-  **Zhen He**, 1210 – US01, 6/15/11
Microbial desalination cell
1210 – WO00, 6/15/11
-  **Zhen He**, 1265 – US01, 7/11/12
Algae bioreactor
-  **Zhen He**, 1266 – US02, 7/11/12
Osmotic membrane fuel cell
1266 – WO00, filed 17/11/12
-  **Arash Mafi**, 1272 – US00, filed by Lic
Fiber bandwidth improvement
-  **Adel Nasiri**, 1195 – US01, 3/13/09
Wind turbine pwr elec.
-  **Xiaohua Peng**, 1277 – US01, 7/1/12
Cancer therapeutics
-  **Valerica Raicu**, 1242 – US02, 4/5/12
Microscopy improvements
1242 – US04, 4/5/12
1242 – WO00, 4/5/12
-  **Lei Ying**, 1188– US01, filed 7/9/10
Accelerated Sense encoding




In Prosecution

-  **Brian Armstrong**, 1124 – EPC00, 5/18/07
Motion tracking system
-  **Yiqiang (Eric) Cheng**, 1108 – US01b
FK228-like anti cancer compounds
-  **Mary Lynne Collins**, 1107 – US03
Protein expression method
-  **James Cook**, 1111 – EP00(P2)
Pro drugs for anxiety disorders
1111 – JP00(P2)
-  **James Cook**, 1111 – US02(P1), allowed
Pro drugs for anxiety disorders
-  **James Cook**, 1111 – US01(P3)
Pro drugs for anxiety disorders
1111 – CA00(P3)
1111 – EP00(P3)
-  **Gil Indig**, 1187 – US01, nat. 2/18/12
Clay-based pigments
-  **Graham Moran**, 1133 – US01
NTBC for fungal infections
-  **Jorge Woehl**, 1162 – US01, 1/21/11
Electrostatic particle trap
-  **Ching-Hong Yang**, 1112 – US02
Methods for T3SS virulence red.
-  **Ching-Hong Yang**, 1200 – US03, 8/16/12
T3SS inhibitor based antibiotics
1200 – EP00
1200 – CN00
-  **Hao Zhang**, 1181 – US04, 3/17/10
Photo acoustic + OCT
1181 – US05, 3/17/10
1181 – EP00, 3/17/10

Copyright Matters

-  **Joseph Bockhorst**, 1236 - Copy
Image analysis s/w
-  **Naira Campbell**, 1281– Copy
Safety instruction video
-  **JaejinJang**, 1186 - Copy
Routing optimization software
-  **Rhonda Montgomery**, 1211 - Copy
TCARE elderly care assess.
-  **Krishna Pillai**, 1179 - Copy
CFD modeling software
-  **Krishna Pillai**, 1289 - Copy
Metal impregnation process s/w
-  **Paul Roebber**, 1239 – Copy
Consensus forecasting
-  **Jorg Woehl**, 1136 – Copy
Point spread optimization software

Licensed/Optioned Technologies

-  **Licensed (exclusive)**
-  **Licensed (non-exclusive)**
-  **Optioned**

Moving Technologies to Market






































UWMRF is moving technologies to market where partners can help develop those technologies, and ultimately bring support back to UWM for broader research efforts. Currently, 17 technologies have been licensed or optioned by industry partners and startups who are investing in them and launching products.

Gap Awards



















Marketing

















Licensing

Issued (Allowed)







-   **Brian Armstrong**, 1124 – US01, 8,121,361
Motion tracking system
-   **Fred Binkowski**, 1104 – US01, 7,836,852
Perch spawning system
-   **Junhong Chen**, 1085 – US01, 8,268,405
Nanotube decoration
-   **Junhong Chen**, 1164 – US02, 8,240,190
Room temp gas sensors
-   **Yiqiang (Eric) Cheng**, 1108 – US01, 8,148,102
Anti cancer comp exp method
-   **Mary Lynne Collins**, 1006 – US01, 6,680,179
Host/vector system for membrane proteins
-   **Mary Lynne Collins**, 1006 – US02, 6,951,741
Host/vector system for membrane proteins
-   **James Cook**, 1111 – US01(P1), 7,829,709
Pro drugs for anxiety disorders
-   **James Cook**, 1111 – US01(P2), 8,173,809 B2
Pro drugs for anxiety disorders
-   **James Cook**, 1147 – US01, 8,268,854
Novel comp's for alcohol add.
-   **Mukul Goyal**, 1094 – US01, 7,756,017
Routing protocols
-   **Yaoyu Li**, 1127 – US02, 8,190,318
Hybrid power mgmt sys & methods
-   **Valerica Raicu**, 1105 – US01, 7,973,927
Two photon spectral microscope
-   **Valerica Raicu**, 1105 – US02, 8,094,304
Two photon spectral microscope
-   **Alan Schwabacher**, 1003 – US01; 7,244,572
Fiber optic array sensor
-   **Lei Ying**, 1114 – US01; 7,777,487
MRI joint recon& coil sense est.
-   **Lei Ying**, 1169 – US01, 8,170,311
MRI comp sens with random B-field
-   **Hao Zhang**, 1181 – US02, 8,016,419
Photo acoustic system and app's
-   **Hao Zhang**, 1181 – US03, 8,025,406
Photo acoustic scanning and confocal app



-   **James Cook**, 1111 - Promentis
Pro drugs for anxiety disorders
-   **Rhonda Montgomery**, 1211 – TCARE Nav.
TCARE elderly care assess.
-   **Junhong Chen**, 1085, 1164, 1225 - NanoAffix
Nanotube decoration
-   **Zhen He**, 1210 – Gannett-Fleming
Microbial desalination cell
-   **Valerica Raicu**, 1105 , 1242 – Aurora Spectral
Two photon spectral microscope
-   **Peter Geissinger**, 1244 – Adv Chem Sys
Fiber optic sensors
-   **Alan Schwabacher**, 1003 – Adv Chem Sys
Fiber optic array sensor
-   **Zhen He**, 1240 – HydroTech LLC
Enzymatic water softening
-   **Zhen He**, 1265 – HydroTech LLC
Algae bioreactor







-   **Fred Binkowski**, 1104 - Bell Aquaculture
Perch spawning system
-   **Arash Mafi**, 1272 – Comm Company
Improved bandwidth fiber
-   **Brian Armstrong**, 1165, 1192 – Metria
Motion tracking target, MRI compat camera
-   **Naira Campbell**, 1281– Vista Training
Safety instruction video
-   **Zhen He**, 1266 – Gannett-Fleming
Osmotic membrane fuel cell
-   **Joseph Bockhorst**, 1236 – Adv. Tech
Image analysis s/w
-   **Brian Armstrong**, 1124 – KinetiCor
Motion tracking system
-   **Rhonda Montgomery**, 1211 – TCARE Nav
TCARE elderly care assess.

Startup Challenge

-   **Michael Shultz**
WiPark – parking mgmt s/w & h/w
-   **Jessie DePinto**
3D Scanning booth
-   **Brian Cera**
Clever Blocks – 3D modeling if



Prospects

-  **Bioscience Researcher**,
Novel anti-bacterials
-  **Information Science Researcher**,
Curriculum navigator software
-  **Chemistry Researcher**,
Nano-coatings for biomed app's
-  **Chemistry Researcher**,
Inhibitor compounds
-  **Materials Science Researcher**,
Nanomaterials for energy storage app's
-  **Social Science Researcher**,
Engagement method for elderly care

UWM Startup Company

-   **Junhong Chen**, 1085, 1164, 1225 - NanoAffix
Nanotube decoration
-   **Valerica Raicu**, 1105, 1242 – Aurora Spectral
Two photon spectral microscope
-   **Zhen He**, 1240, 1265 – HydroTech LLC
Enzymatic water softening & algae bioreact
-   **Krishna Pillai**, 1179, 1289 – Porous Media Simulations
Consulting/licensing CFD modeling software
-   **Brian Armstrong**, 1165, 1192 – Metria Innovations
Motion tracking target, MRI compat camera
-   **Rhonda Montgomery**, 1211 – TCARE Nav
TCARE elderly care assess.

Startups and Entrepreneurship

Startup companies and fostering entrepreneurship among UWM faculty and students are an important part of creating a culture of innovation at UWM and in the broader Milwaukee community. The UWM Research Foundation continues to support the process of creating startup companies based on UWM technologies and is developing new initiatives in entrepreneurship.

UWM Startup Companies

UWM Startup Companies

When the right technology and entrepreneurially minded faculty come together to form the right opportunity, the UWM Research Foundation is providing resources to help make them successful by offering “concierge service” to these innovators and entrepreneurs. This includes connecting them with business leadership through investor forums such as the First Look Forum, helping develop market analyses and business plans, providing coaching and support for SBIR grants, and working with leadership in the university to ensure that the process is appropriately managed.



Dr. Ching-Hong Yang presents his technology to a group of investors and entrepreneurs at UWMRF’s most recent First Look Forum.

Initial successes include: NanoAffix Sciences (launched by Junhong Chen, the company has received SBIR phase 1 and 1B grants), Aurora Spectral Technologies (see update on page 11), HydroTech Innovations (which received an NSF I-Corps grant) and a recent license to Metria Innovations that adds a UWMRF-licensed technology to their technology portfolio.

Student Entrepreneurship

The UWM Research Foundation is pushing into new areas by expanding its support for student and faculty entrepreneurship. The focus of the UWMRF intern program has been broadened to help student interns build entrepreneurship skills thanks to the support of the Helen Bader Foundation.

The UWM Research Foundation is also partnering with the university in the launch of the Student Startup Challenge. The project, led by professors Ilya Avdeev (College of Engineering and Applied Science) and Nathaniel Stern (Peck School of the Arts), links student entrepreneurship with the Product Realization Class, where students build prototype devices. A call for ideas yielded more than 60 student business ideas. In the fall of 2012, three ideas were selected for prototyping in the class, and the UWM Research Foundation will help student teams create businesses based on their products. Plans are already under way to expand the program, adding tracks in software and energy technologies.



Entrepreneurship



Startup Update – AST Launches Product:

Dr. Valerică Raicu's company, Aurora Spectral Technologies, is ramping up manufacturing of its first product, the OptiMiS™ microscopy system, used to study protein interactions, which may lead to the design of better drugs. Raicu's efforts have been helped by a Bradley Catalyst Grant in 2009 as well as coaching for the startup process and strong support from UWM.



OptiMiS™
An imaging tool developed by UWM physicist Valerică Raicu.

Student Startup Challenge: The Student Startup Challenge brings together student entrepreneurs with engineers and designers, who will help create prototype devices, and with business people and investors, who help bring these products to market. The program received an overwhelming response, and plans are already being made to expand the reach of the program. The benefits will be measured not just in companies launched, but in the number of students who learn the process of bringing ideas to market.



TCARE Navigator Startup Will Access New Markets:

Dr. Rhonda Montgomery developed the TCARE® assessment system to help match caregivers for aging individuals with the appropriate services in their communities. Piloting the system through various state agencies across the United States has helped demonstrate its effectiveness in reducing stress levels and ultimately saving costs in the healthcare system. The TCARE® system has been licensed to six different agencies and an Internet startup company. Now Montgomery has launched a new startup company, TCARE Navigator, LLC, to help TCARE® reach new markets. (Dr. Montgomery, shown left, led the team that received the Rosalynn Carter Caregiving Award.)

Corporate Partnering

UWM's success in growing the institution and adapting to the future will rely, in part, on leveraging the unique assets of the Milwaukee region, including the major corporations and industries that call Milwaukee home. The UWM Research Foundation corporate partnering efforts are aimed at helping the university continue to be a source of talent for the region while also ensuring it is a source for innovative ideas. In addition, by bringing industry into the discovery process at the university, UWMRF is helping ensure the work conducted at UWM leads to outcomes with more immediate impact.

Energy Partnerships

The Wisconsin Energy Research Consortium (WERC) was born out of a collaborative effort between UWM and other institutions in southeastern Wisconsin to connect with energy companies. The effort has grown to include more than 25 member companies and institutions. The organization's emphasis on areas that include research and industry expansion have been helped in part by UWMRF's catalyst grants and other efforts to make it easier to partner with the university.

Chancellor Michael R. Lovell has helped establish an unprecedented partnership between Johnson Controls Inc., the world's leading supplier of automotive batteries, and Wisconsin's two public research universities, UWM and UW-Madison. The multimillion-dollar investment by Johnson Controls already has produced two joint laboratories at UWM's College of Engineering and Applied Science, where the company's scientists and UWM faculty and students work side by side. The company also is funding the Johnson Controls Endowed Professorship in Energy Storage Research, the recipient of which will be responsible for maintaining the research labs and supervising graduate students at both institutions.

Healthcare Partnerships

GE Healthcare has recently partnered with the University of Wisconsin-Milwaukee to build its workforce, bring new talent into the field and foster imaging research. GE Healthcare is a global industry leader with a strong impact in Wisconsin: a recent study showed GE supports nearly 21,500 jobs directly or indirectly in Wisconsin, including more than 6,500 direct jobs. Nearly 80% of UWM's graduates continue to live and work in Wisconsin, making UWM a natural partner for GE's workforce needs.

Water Partnerships

The UWM Research Foundation continues to support the NSF-funded Water Equipment and Policy Center (WEP), created under the umbrella of the Milwaukee Water Council. This center uses an "industry-pull" model to fund projects that are important to industry members, which then share in the results. This year, two industry participants working with the UWM Research Foundation elected to license technology created through a WEP project on advanced materials.

Drug Discovery Partnerships

The UWM Research Foundation is working with UWM's new Milwaukee Institute for Drug Discovery (MIDD), which was created to advance research and later-stage development of new drugs from research at the University of Wisconsin-Milwaukee and collaborating institutions. The institute will focus on several areas of research strength at UWM, with initiatives in neuroscience, cancer and infectious diseases. The organization, led by Dr. Doug Stafford, is building ties with institutions under the Medical College of Wisconsin's Center for Translational Science Institute; they recently collaborated to promote southeastern Wisconsin at BIO, a major international trade show.

Johnson Controls Grants Foster UWM Energy Research:

The UWM Research Foundation partnered with Johnson Controls to foster energy research by providing grants to UWM faculty and collaborators at UW-Madison. In the spring of 2012, the company announced \$300,000 in grants to study topics central to the company's product development roadmap. Johnson Controls has also invested millions of dollars to build state-of-the-art testing facilities at UWM where UWM researchers work side-by-side with researchers from Johnson Controls in developing the next generation of energy storage devices.



GE Healthcare Partnership:

In September 2012, GE Healthcare announced a \$3 million partnership with the University of Wisconsin-Milwaukee. The program will create a center for imaging research at UWM that will help educate GE's existing workforce, create a pipeline of new talent from UWM and encourage UWM researchers to tackle challenging problems in imaging reconstruction – an area key to GE's success.

UWM Research Foundation

The UWM Research Foundation, Inc., is a private, nonprofit 501(c)(3) corporation organized in support of the University of Wisconsin-Milwaukee. The UWM Research Foundation is controlled by the UWM Foundation, Inc., and was created in 2006 as part of the UWM Foundation’s strategy of expanding its support for the university through public/private partnerships. The mission of the UWM Research Foundation is to support research and innovation at the University of Wisconsin-Milwaukee by fostering high-potential research, leveraging intellectual property, facilitating private sector partnerships and helping spinoff technology.

UWMRF Programs

The UWM Research Foundation continues to deliver and help administer a range of programs to UWM. These programs include:

- **Catalyst Grant Program** – seeds promising ideas with strong potential for commercialization
- **Madison-Milwaukee Intercampus Incentive Grant Program** – UWMRF has helped administer this program for the third year; it provides grants to combined teams from UW-Madison and UWM
- **Student Startup Challenge** – UWMRF is partnering with UWM to pilot this program, which will help student teams launch companies
- **Entrepreneur Intern Program** – employs undergraduate and graduate students in the technology transfer process
- **Senior Faculty Awards** – recognizes achievements of UWM senior faculty selected by a group of UWM distinguished professors

Research Foundation Supporters

The UWM Research Foundation gratefully acknowledges the support of local organizations that continue to make our work possible. These supporters include: the Lynde and Harry Bradley Foundation, GE Healthcare, the Harley-Davidson Foundation, the Richard and Ethel Herzfeld Foundation, the Rockwell Automation Charitable Corporation, the Wisconsin Energy Foundation, and other local foundations.



UWM Research Foundation Leadership

The UWM Research Foundation Board brings a complementary mix of experience from for-profit and not-for-profit organizations and includes expertise in research management, venture capital investing and industry leadership. The board is led by Chairman Sujeet Chand, senior vice president and chief technical officer, Rockwell Automation, and William Berezowitz, vice president and general manager, Imaging Subsystems, GE Healthcare.

Board of Directors

**Sujeet Chand**

Sr. Vice President and
Chief Technical Officer
Rockwell Automation
Chair, UWMRF

**William Berezowitz**

Vice President and General
Manager, Imaging
Subsystems
GE Healthcare
Vice Chair, UWMRF

**Daniel J. Bader**

President
Helen Bader Foundation
Past Chair, UWMRF

**Johannes Britz**

Provost and Vice
Chancellor for Academic
Affairs, UWM

**Jacquelyn Fredrick**

President and CEO
BloodCenter of Wisconsin

**David Gilbert**

President
UWM Foundation

**F. William Haberman**

Michael Best and
Friedrich LLP

**Joseph Kerschner**

Dean and Executive Vice
President
Medical College of Wisconsin

**Andrew Schiesl**

Vice President, General
Counsel and Corporate
Secretary
Quad/Graphics

**John Torinus**

Chairman
Serigraph Corporation

**Mary Ann Wright**

Vice President, Global
Technology and Innovation
Power Solutions
Johnson Controls, Inc.

Staff

**Brian Thompson**

President

**Jessica Silvaggi**

Licensing Manager

**Joseph Pfannes**

Technology Licensing
Associate

The UWM Family of Foundations

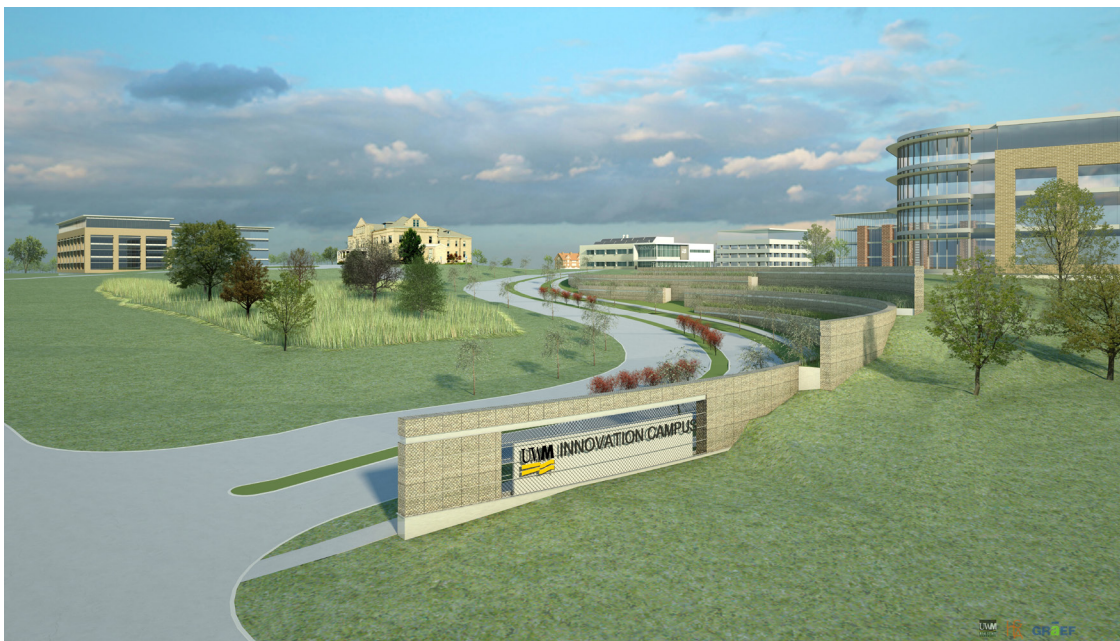
The UWM Research Foundation is part of a group of affiliated organizations that support the University of Wisconsin-Milwaukee. The UWM Foundation manages the important donor support that is helping UWM grow to meet the needs of our region. The UWM Real Estate Foundation is building new facilities, including the UWM Innovation Campus, to help ensure the university has the needed infrastructure to support innovation. The complementary nature of these three organizations is helping UWM grow to be a force for innovation for our region.

UWM Innovation Campus

The UWM Innovation Campus is being built on a 72-acre parcel of land adjacent to the Milwaukee Regional Medical Center in Wauwatosa. It is the most ambitious project of the UWM Real Estate Foundation to date. Infrastructure work is currently under way, and the first building, a 25,000-square-foot Innovation Accelerator building, is slated to open in 2013. Planning is under way for a larger state-funded building that will house a larger group of engineers and scientists who will collaborate with partners at the Medical College of Wisconsin, Children's Hospital of Wisconsin, the Blood Research Institute, and other clinical and industry partners in the region.



This initiative is already fostering important discussions with the Medical College of Wisconsin about how UWM and MCW can build joint educational programming in biomedical engineering and leverage the complementing strengths of the two institutions. The UWM Research Foundation is already collaborating with the Office of Technology Development at MCW to protect and commercialize several ideas, and these collaborations will undoubtedly lead to many more ideas in which commercialization can help bring innovative new ideas to the broadest possible audience.



The UWM Innovation Campus - located adjacent to the Milwaukee Regional Medical Center - will foster collaborations with the Medical College of Wisconsin, Children's Hospital of Wisconsin and other partners.





For more information contact:
Brian Thompson
President, UWM Research Foundation
1440 East North Avenue
Milwaukee, WI 53202
briant@uwmfdn.org

