



Fall 2013

Inquiry, Summer/Fall 2013

Office of Vice President for Research

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Office of Vice President for Research, "Inquiry, Summer/Fall 2013" (2013). *Discovery/Inquiry: OVPR Newsletter*. Paper 15.
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INQUIRY

OFFICE OF VICE PRESIDENT FOR RESEARCH

Electronic versions available at wmich.edu/research/news.html

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OVPV VISION AND MISSION

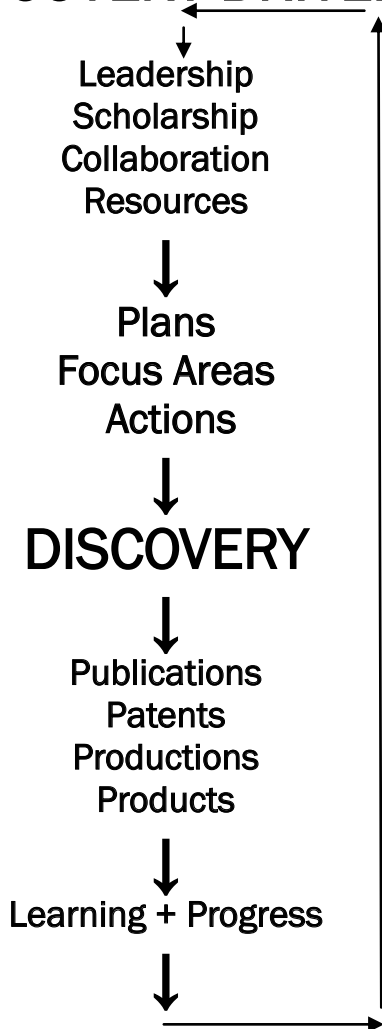
VISION: TO BE A LEADER AND CATALYST FOR SCHOLARSHIP EXCELLENCE

MISSION: THE OFFICE OF THE VICE PRESIDENT FOR RESEARCH ADVANCES THE OVERALL SCHOLARSHIP AGENDA OF THE UNIVERSITY; SUPPORTS THE SCHOLARSHIP INITIATIVES OF WMU FACULTY, STUDENTS AND STAFF; AND ASSURES COMPLIANCE WITH ALL APPROPRIATE FEDERAL AND STATE REGULATIONS.

WWW.WMICH.EDU/RESEARCH

DISCOVERY PLANNING UPDATE BY VP LITYNSKI

DISCOVERY DRIVEN



Over the past many months, we have examined our Leadership, Scholarship, Collaboration, and Resources. Leaders at all levels have suggested many actions to help support and expand our Discovery.

Departments and units have created or updated three to five year Discovery Plans to identify areas that are current and/or emerging strengths of scholarship and collaboration. Several Discovery Focus Areas have been suggested to help marshal efforts in promising areas for future Discovery. These are being reviewed internally and with the help of external consultants. Future actions will build upon the information provided through these and future efforts.

We are committed to extend our Discovery capacity and grow our collaborations. WMU is nationally and internationally known for many of its outstanding Discovery programs. Through publications, patents, creative productions, innovative products, and graduate and undergraduate education, we contribute to society and the global body of knowledge in myriad ways. These build our reputation as a national research university.

They also bring in additional resources to the university for the benefit of all by external grants, contracts, and revenue through intellectual property activities such as patents, copyrights, licenses, and business startups. These revenues support the University as a whole and provide resources for needed equipment, student support, and other Discovery-related activities.

How are you contributing to our vision of a Discovery-Driven University?

WMU is a nationally recognized research institution. We prepare, plan, DISCOVER, publicize and produce, then pass on our knowledge and our contributions to our students, constituents and the global community.

~Dr. Daniel M. Litynski

FACULTY RESEARCH UPDATES

Dr. Janet Hahn, coordinator of the Center for Gerontology and assistant professor in the School of Interdisciplinary Health Programs conducts research on the importance of valuing the person in late life, especially those with dementia.

In November of 2012, she presented two research papers at the Gerontological Society of America Annual meeting: "Applying Crucial Conversation Skills to Care Transitions" and "Effective Adaptation of Enhance Fitness Exercise Intervention for A Senior Living Setting". She also presented "Balancing Person-Centered Geriatric Care with Regulations, Technology, and Gizmo Idolatry" at the WMU Medical Humanities Conference in September 2012.

Dr. Hahn is working on a project with **Dr. Susan Stapleton** of the WMU Graduate College, **Dr. John Spitsbergen** of the Department of Biological Sciences, and gerontologists from the University of Michigan and Wayne State University to discover methods to encourage undergraduate students to pursue a career in aging research.

She is also partnering with area skilled care facilities to develop effective methods to lower the rate at which residents return to a hospital after rehabilitation in a skilled facility.

In addition, students from Dr. Hahn's Spring 2013 service learning class conducted 180 interviews with individuals with memories of the World War II Era. The idea for this project was developed by **Dr. Ellen Page-Robin**, founding director of the WMU Gerontology Program and **Dr. Barbara Rider**, former chair of the WMU Occupational Therapy Department. Dr. Hahn is currently writing the manuscript for this project which the students titled "There is No Substitute for Victory."

Dr. Yan Lu, assistant professor of biological sciences, was awarded a National Science Foundation grant for \$1.6 million. The project, "Identifying and Understanding Connections between Photosynthesis and Amino Acid Metabolism," will increase our understanding of the interactions between photosynthesis, carbon metabolism and nitrogen metabolism. It will also expand upon a phenotype database from which data will be publicly accessible and analyzed by the scientific community in many contexts including transgenic crop improvement and molecular breeding.

Additionally, the project includes a Co-PI from Michigan State University, Dr. Robert Last, and will integrate research and education as part of an established NSF summer Research Experiences for Undergraduates program at WMU and MSU.

The groups from WMU and MSU will meet monthly as part of the project's goal to integrate postdoctoral, graduate and undergraduate researchers to the labs at both research institutions.

GRADUATE STUDENT AND PROFESSOR RECOGNIZED

A Western Michigan University student has won the best paper award from the world's foremost pulp and paper industry association, becoming the first WMU student to be so honored, while a WMU professor is the first recipient of the association's new education award.

Zheng "Rachel" Wei, a graduate student from China earning a master's degree in paper and imaging science and engineering, has won the TAPPI PaperCon 2013 best student paper award.

TAPPI—Technical Association of the Pulp and Paper Industry—is the largest global organization of pulp and paper industry professionals. Each year, the TAPPI Coating and Graphic Arts Division selects one student-authored-and-presented paper at PaperCon, the industry's largest annual meeting and exhibition, as the outstanding student paper.

"TAPPI is extremely proud to recognize Rachel for the work that she put into her entry in the best student paper category," says Larry N. Montague, TAPPI president and CEO. "She is a dedicated student and represents WMU and our global industry in a very professional manner."

Over the years, this award has most often been won by graduate students from Finland and Sweden. The award is based not only on the technical content and significance to the industry of the written paper, but also the oral presentation at the conference.

A second important award went to **Dr. Margaret Joyce**, professor of paper and chemical engineering. Joyce won the TAPPI Coating and Graphic Arts Division's Education and Mentoring Award and MeadWestvaco Prize. Joyce is the first to be honored with the newly established award. The honorarium is endowed by MeadWestvaco Corp.

"Dr. Joyce epitomizes professionalism in education," Montague says. "She is an extremely caring and hardworking individual, who demonstrates her passion on a daily basis with her university and her students. I was thrilled to hear that she and WMU were honored by her receiving this new award. This is one more achievement that demonstrates the best coming out of Western Michigan University."

Source: University Relations/News

RECORD NUMBER OF GRADUATE STUDENTS PARTICIPATED IN SPRING RESEARCH AND CREATIVE ACTIVITIES POSTER DAY EVENT

Twenty-three Western Michigan University graduate students were recognized for outstanding poster demonstrations of their research.

The seventh annual WMU Research and Creative Activities Poster Day showcased scholarly work from a total of 60 graduate student projects.

Winning poster demonstrations

Amy Morrison Gyorkos, biological sciences, "GDNF's Expression in Slow- and Fast-twitch Muscle Fibers are Dependent on Exercise Intensity"

Abdul Wahed Mohammed and **Rusthi Mohamed Ibralebbe**, civil and construction engineering, "Greening Cement-based Products with Waste Powder Paints"

Nathan Christensen and **Marilyn Glass**, industrial and manufacturing engineering, "Landfill Audits"

Ting Chen; paper engineering, chemical engineering and imaging; "Can Coating Composition Influence Inflection in Quickset Ink Setting Profiles to Improve Sheet-fed Print Quality and Efficiency"

Caitlin Callahan, Mallinson Institute for Science Education, "From Map to Mind: Using Video Logs to Explore the Process of Geologic Mapping"

Katie Strong, speech pathology and audiology, "Supporting Identity in Aphasia: A Survey of Speech-language Pathologists"

S. Bedoor, J.C. Lighthall and **S.T. Marley**; physics; "Study of 14B (d.p.) Using Reaction in Inverse Kinematics"

Lamees Mohamed and **Abotalib Zaki**, geosciences, "Toward a Better Understanding of Modern and Paleo-hydrologic Settings in Arid Lands"

Thomas Ratkos and **Sean Field**, psychology, "Effects of Varied Response Methods on Student Performance and Preference"

Dini Ghuzini, economics, "Bank Leverage and Asset Positions: Cross Country Evidence"

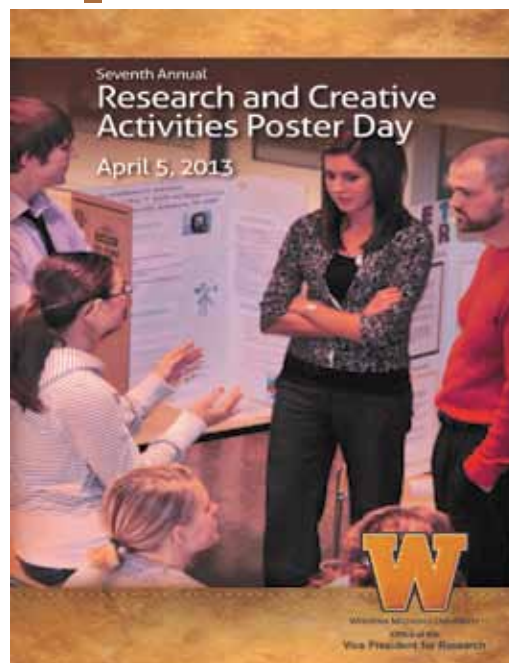
Robert McCowen, interdisciplinary Ph.D. in evaluation, "An Evaluation of the Overall Quality Assurance and Transparency of Evaluation at the Swiss National Science Foundation"

Kristin A. Hobson, interdisciplinary Ph.D. in evaluation, "Meta-analysis as a Method of Multi-site Evaluation of International Development Projects and Programs"

James P. O'Donnell, David P. Maison, Teresa J. Clark and **Ryan L. Wessendorf**; biological sciences; "Functions of a Thylakoid Zinc-finger Protein, TZFP2, in Thylakoid Biogenesis"

Mohamed Rusthi, civil and construction engineering, "Remote Monitoring of Fatigue Sensitive Details on Steel Bridges"

The event was sponsored by the Office of the Vice President for Research, Research Policies Council, the Graduate Student Advisory Committee and a variety of colleges and University offices.



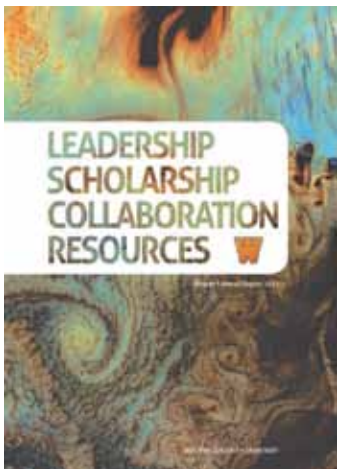
UPDATE FROM IP AND COMMERCIALIZATION DIRECTOR

During the past fiscal year, we received several exciting new invention disclosures such as a method for creating rapid 3-D prototypes for manufacturing applications, a method/tool for creating virtual health and disease management modules, and method to help computer programmers create higher quality software programs, among many others. In the upcoming year, we are anticipating the launch of several new start-up companies based on WMU-developed technology, and continued progress towards significant milestones from several other recent start-ups.

The latest request for proposals for funding from the Technology Development Fund (TDF) is currently available; proposal deadline is Friday, Nov. 22. The IP Management and Commercialization Advisory Committee will distribute an online survey to seek input and advice on ways to improve the TDF application and approval processes, so please check your in-boxes in the coming weeks if you would like to participate. We are excited about the upcoming year and look forward to hearing about many new and great ideas with commercial application.

~Dr. Michael Sharer

RESEARCH PUBLICATIONS AVAILABLE ONLINE



The **2012 Research Annual Report** details the faculty awards and research underway at the University.

The **2013 Research Edition of the Western Michigan University Magazine** was mailed in early June to faculty, staff, alumni, donors and friends.

To receive a printed copy or to be added to our mailing list, contact Diana Berkshire-Hearit at diana.hearit@wmich.edu.

To review the publications electronically, go to wmich.edu/magazine. Forward stories to colleagues and friends using the electronic copies.



FACILITIES & ADMINISTRATIVE COST RATES (F&A) EFFECTIVE JULY 1, 2013

The work of WMU faculty, staff, and students on externally-funded projects includes direct and indirect costs. Direct project costs are usually straightforward and easily attributed to a specific project. Indirect costs, termed Facilities and Administrative Costs (F&A), are also essential for a project's implementation, but are more cumbersome to attribute and track in relation to specific projects.

F&A costs include such expenses as utilities, custodial services, security, payroll, purchasing, fiscal management and tracking, and department administration. F&A costs are expressed as a percentage of total direct costs minus exclusions; are agreed upon through formal negotiations every four years with our cognizant agency, the U.S. Department of Health and Human Services; and are based upon data presented by the University via a cost analysis.

Having such a rate helps the university reduce the costs of having to determine how much of these resources each individual project uses or consumes. WMU recently concluded this process and new rates for research- and instruction-related projects funded externally for both the University and WMed have been established as follows:

- July 1, 2013 – June 30, 2015 = 50% of modified direct costs
- July 1, 2015 – June 30, 2017 = 51% of modified direct costs

Project budgets are required to include full recovery of F&A costs at the appropriate negotiated rate. More information about specific rates and F&A policies are available on the OVPR website (www.wmich.edu/research/policies/proposalsubmit).

Contact Information

Office of the Vice President for Research
210 W. Walwood Hall
Kalamazoo, MI 49008-5456
Phone: 387-8298

Dr. Daniel M. Litynski, Vice President for Research

Dr. Paula Kohler, Associate Vice President for Research

Editor: Diana Berkshire-Hearit

Research Officer Constituent Areas

Sarah Pratt: CAS (Biology, Chemistry, Psychology, Math, Statistics, Geosciences, Geography, Physics), Mallinson Institute for Science Education, Environmental Studies

Kim Squiers: CHHS, CDS, Unified Clinic, Aviation

John Risley: COEHD, Evaluation Center, HCOB, TGC, International Studies, LHC, EUP, Seita Scholars, Graduate College

Allison Weiner: CEAS, FRACAA Internal Funding

Andrew Kienitz: CAS (Humanities, Social Sciences) CFA, Humanities Center, Libraries, VP for Student Affairs, Academic Skills Center, Miller Auditorium

A complete list of constituency areas is posted online at wmich.edu/research

DISCOVERY PLANS

Departments and units have identified strategic Discovery strengths and emerging areas. That analysis included the following: identifying current areas of strength; planning for continuing and emerging areas over the next 3-5 years; and assessing which programs are locally, regionally, nationally or internationally competitive. One of the goals is to encourage dialogue, coordination and collaboration at all levels – department-level, college-level, and University-wide. To date, here's a snapshot of the data collected:

- With three quarters of the units reporting, over 250 current Discovery programs identified;
- Over 300 identified as continuing and emerging programs;
- Approximately one-third of the programs have been self-assessed to be competitive at the national and international levels;
- Approximately one-third of faculty members have served as principal investigators for externally-funded projects.