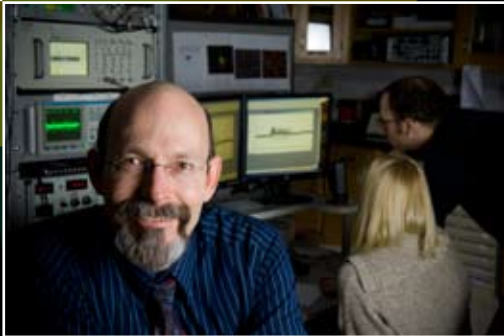


# WRIGHT STATE UNIVERSITY



2007 • RESEARCH AND SPONSORED PROGRAMS  
A New Era of Collaboration



**THE STATE OF OHIO IS WORKING HARD** to fit into the new knowledge-based economy and Wright State University is part of that plan. Manufacturing jobs in Ohio are fast disappearing due to the exportation of jobs to foreign countries and mechanization. So how are Ohioans to make a living? The answer is both new and old to Dayton. That answer is innovation, but now innovation includes such areas as drug discovery, genetic engineering, nanotechnology, and computer sciences. The object is to keep one step ahead of our competitors in bringing new products to market.

To progress in these areas, Ohio needs smart people who are equipped with the latest technology. That is where universities come in. The state's Third Frontier program kicked off the movement towards an increased role for universities in the economy. This program picked up where federal funding for basic research left off and attempted to provide a pathway towards commercialization.

Realizing that faculty needed a reward system to put their efforts towards commercialization, Senate Bill 286 was passed to allow faculty up to 25% equity stake in new companies in addition to liberal patent benefits. There was progress during this period and Wright State benefited through the establishment of the Genome Research Institute and daytaOhio. Wright State is also participating in the Dayton Entrepreneurial Signature program.

With very little fanfare, industries such as biotechnology grew in the state, and there are now over 4,000 unfilled biotech jobs available in Ohio in hundreds of Ohio biotech companies for those who can qualify. Other high-tech industries are also growing. What was missed during this period was a financial strengthening of universities to provide some of those knowledge-based workers.

With the advent of the Strickland administration and a higher prioritization by the legislature, we have seen the rapid emergence of new programs such as the STEMM (Science, Technology, Engineering, Mathematics, and Medicine) high school concept, the STEMM teacher preparedness program, the Choose Ohio First STEMM scholarships, and the research scholars program.

Now a new bond issue is being proposed that will involve universities, but only at the final portion of product commercialization and company attraction. High-technology businesses are attracted to outstanding universities like bears to honey.

What is being created in Ohio is a high-technology environment and a pathway to commercialization for intellectual property that has been developed at universities often with the participation of industry.

Trailing this progress has been workforce development, and Ohio's youth have not yet responded to the opportunities of careers in science and engineering fields in the requisite numbers. This mirrors a national problem that needs to be addressed soon. To make this change, higher education and the community need to reach back to early grade levels and provide an exciting pathway to STEMM education similar to that being created for intellectual property development.

Wright State University is in the thick of this effort, and we have to improve the teaching of science, mathematics, engineering, and health sciences without losing sight that we are a university and that the arts and humanities have a lot to offer that is socially and economically important. WSU needs to educate people, not just train them for jobs. Additionally, Wright State is improving its own pathway to commercialization by supporting applied research, creating a much-improved technology transfer office, and forming partnerships with other organizations and businesses. In the next five years, economic development will be as much a mission as is teaching, research, and service.

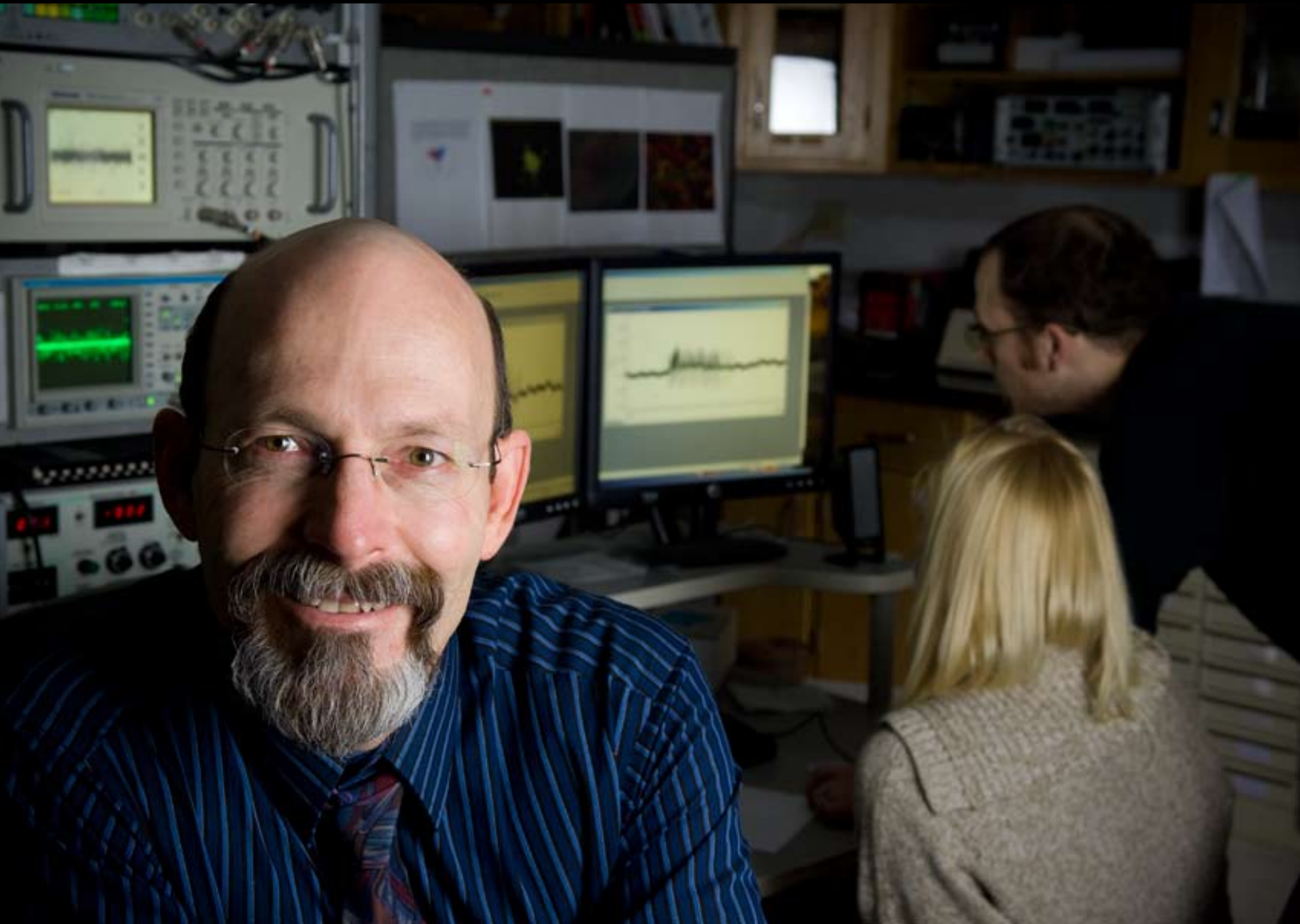
The stakes are high as failure means that the Ohio economy will sag further and so will its institutions of higher education that rely on the state for support. Wright State University is now embarking on an exciting era, but we have to pay a great deal of attention to avoid taking a step backward for every two forward.

Jack Bantle  
Vice President for Research and Graduate Studies  
Wright State University

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## Advancing neuroscience research

Timothy Cope



THE COMPREHENSIVE NEUROSCIENCE CENTER INTEGRATES A WIDE ARRAY OF APPROACHES AND EXPERTISE THAT ACCELERATE PROGRESS IN UNDERSTANDING FUNCTION AND DYSFUNCTION OF THE CENTRAL NERVOUS SYSTEM.

RESEARCHERS IN WRIGHT STATE'S COMPREHENSIVE NEUROSCIENCE CENTER (CNC) are breaking new ground in understanding the inner workings and mysteries of the nervous system.

The newly established center integrates teams of scientists and clinicians across several disciplines—on and off campus—to collaboratively address fundamental issues in both basic science and clinical neuroscience research. Actively involved are faculty in the fields of biochemistry, cell biology, molecular biology, neuroscience, pharmacology, physiology, psychiatry, psychology, and toxicology.

"The center organizes and supports our neuroscientists and technical resources in ways that advance our research of the nervous system at levels ranging from cellular and molecular mechanisms to behavior," said Timothy C. Cope, Ph.D., chair and professor of the Department of Neuroscience, Cell Biology, and Physiology, and CNC director.

The center expands the scope, mission, and resources of the former Center for Brain Research and was made possible through a grant from the Boonshoft Innovation Fund, established when Oscar Boonshoft, a local philanthropist and long-time supporter, gave Wright State University School of Medicine a gift of \$28.5 million in 2005. His goal was to provide new resources to spur innovative ideas and programs that would propel the school to national leadership in medical education, patient care, and research.

The center's national standing in neuroscience was significantly advanced when a group of its members were awarded a \$4.8 million Program Project Grant from the National Institute of Neurological Disorders and Stroke (NINDS).

In addition to Cope, who serves as the project's principal investigator, the project brings together four other Wright State investigators—Drs. Francisco Alvarez, Kathrin Engisch, Robert Fyffe, and Mark Rich—to collaborate and further their research into why full recovery is not always achieved after damaged nerves have regenerated.

"This grant creates a strong research synergy," explained Cope. "The goal is to understand how injury, regeneration, and alterations in neural activity affect synaptic and network function and to explore the mechanisms that either promote or impede recovery."

Cope explained that although damaged peripheral nerves regenerate, regeneration is not synonymous with recovery.

"Neither sensation nor movement return to pre-injury levels after nerve regeneration. Problems remain in timing and strength of muscle contraction, problems that are essential to normal movement. The wide array of approaches and expertise that we have as a team is likely to accelerate our understanding because we can attack the problem of limits on regeneration with greater insight and technical expertise than any one of us could achieve alone."

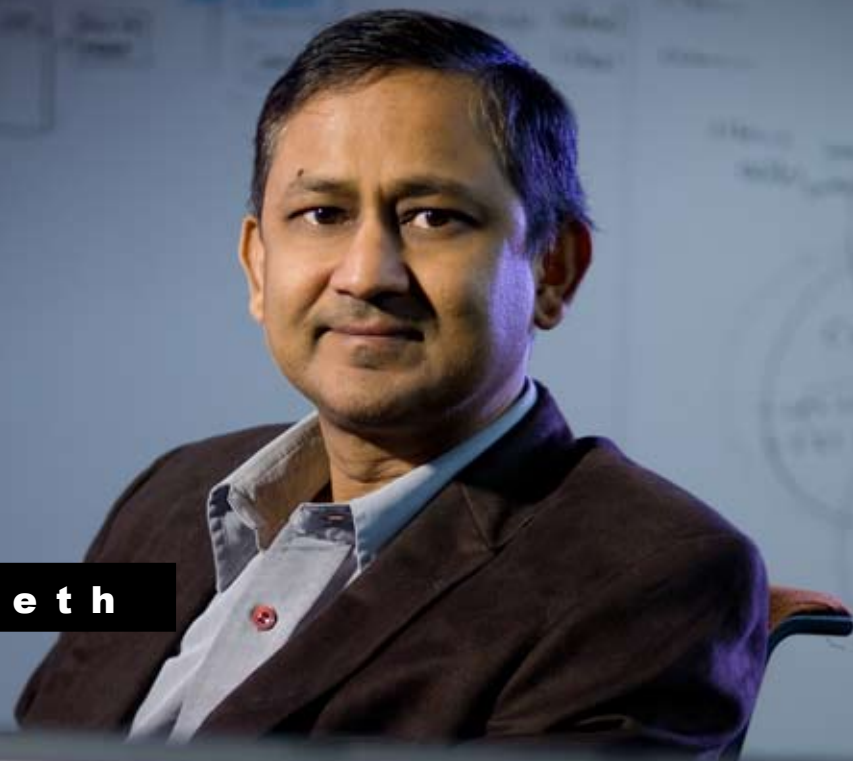
Program Project Grants are designed to "encourage multidisciplinary research approaches to a diverse array of nervous system disorders," according to NINDS, one of the 27 institutes and centers that comprise the National Institutes of Health. The guidelines require at least three interrelated projects that contribute to the program objective.

"These grants are extremely competitive, and this award underscores the high caliber of neuroscience research being conducted at Wright State," said David R. Hopkins, president of Wright State. "In this research arena, we are successfully competing at a national level. We are extremely proud that Wright State has taken a leadership role by bringing this Program Project Grant to the region."

In addition to the Program Project Grant, researchers associated with the CNC are involved in other important neurobiological studies, including research on adaptability of the central nervous system, neural responses to stress, pain and oxygen deprivation, development of the spinal cord, schizophrenia, etc. These and other areas of investigation will continue to thrive as the CNC promotes scientific interaction in the community of neurobiologists at Wright State.

## Partnering towards progress

**A m i t   S h e t h**



### HOW DID YOU SPEND YOUR SUMMER VACATION?

If you're one of Amit Sheth's computer science students, it was likely spent working for one of the nation's top research labs—making data connections *and* connections with industry leaders that they're bringing back home to Wright State.

Having been named the LexisNexis Eminent Scholar for Advanced Data Management and Analysis for the university, Amit Sheth, Ph.D., came to Wright State just over a year ago as an internationally recognized expert in the field of information technology (IT). With matching funds from the Ohio Board of Regents and LexisNexis, the endowed professorship was created in the afterglow of Wright State's being named lead institution in the \$43 million daytaOhio endeavor and funds being secured to complete the Krishan and Vicky Joshi Research Center on campus.

Since arriving, Sheth and his doctoral students have formed the core of the Kno.e.sis Center, Joshi's think tank for IT movers and shakers, where research focuses on improving Web technology and tackling massive data issues in areas like national security and health care. It is also proving to be the place where valuable partnerships are cultivated between the university and major players in the IT arena.

In the past two years, Sheth's students have completed 12 of the most competitive summer internships in the country at top research labs and research and development groups like IBM Research, HP Research, the National Library of Medicine, Oracle, and Amazon. As a result, Kno.e.sis research is being funded as a follow-on to student work—nearly \$75,000 worth in the past three months alone, including a \$50K HP gift based on student Christopher Thomas's internship as an ontology expert with HP labs in Palo Alto this past summer.

AMIT'S PRESENCE COMPLETES THE CIRCLE OF COLLABORATION WE ARE BUILDING AMONG ACADEMIC, PUBLIC, AND PRIVATE SECTORS TO FIND SOLUTIONS TO LARGE-SCALE DATA MANAGEMENT CHALLENGES.

Beyond funding, other partnership opportunities have evolved from the internships, including a number of patents being filed by hosts based on intern work and the publication of several joint papers at international conferences. Industry leaders are taking part in student dissertation committees and have also written valuable letters of recommendation. In fact, mentors at both HP and IBM for one of Sheth's star pupils, Meena Nagarajan, wrote highly supportive letters regarding her nomination for the prestigious IBM Ph.D. fellowship award for which she is now a finalist awaiting decision.

According to Sheth, internships are the key to making his advisees some of the most sought after when they graduate and some of the most successful in their fields, a position in which Sheth finds himself here in the Miami Valley.

"Amit's presence completes the circle of collaboration we are building among academic, public, and private sectors to find solutions to large-scale data management challenges," said Allan D. McLaughlin, senior vice president of LexisNexis Group's Research Solutions Business Unit and chair of the daytaOhio board.

The Miami Valley has excellent resources for his work, said Sheth, including daytaOhio, Wright-Patterson Air Force Base, the proliferation of information technology companies in this region like LexisNexis, and considerable entrepreneurial spirit.

"The forward-looking university and area IT leadership management is in place here to provide an environment for big success and provides an excellent match to my desire to be an educator, researcher, and entrepreneur at the same time."

THE FIVE-YEAR PROJECT, RUNNING FROM OCTOBER 2006 TO SEPTEMBER 2011, IS TAKING A MULTIFACETED APPROACH TO IMPROVING STUDENT PROFICIENCY IN THE AREAS IDENTIFIED AS CRITICAL TO SUCCESS, FOCUSING ON SCIENTIFIC REASONING AND MATHEMATICS.

## Helping students succeed in science and math

**Michele Wheatly**



THE FINDINGS ARE ALL TOO CLEAR. Large numbers of first-year students in open-enrollment colleges and universities do not begin their course work with the necessary preparation to succeed as majors in science, technology, engineering, or mathematics (STEM). As a result, anywhere from one-third to one-half of these students fail their first college-level STEM courses and end up changing majors or dropping out altogether. In fact, increasing STEM proficiency has been identified as a top priority by Governor Strickland in order to help Ohio compete and attract high-tech, high-paying jobs and businesses for the knowledge economy.

In an effort to turn around the trend, a faculty team from Wright State University, under the direction of principal investigator Michele Wheatly, dean of the College of Science and Mathematics and professor of biological sciences, has joined forces with faculty members at Sinclair Community College to develop the “Gateway into First-Year STEM Curricula.” Funded by a \$2 million STEP grant from the National Science Foundation, the Gateway project is designed to increase first-year retention in science and math programs as well as boost the number of students who pursue and obtain four-year degrees in STEM subjects after leaving community college.

The five-year project, running from October 2006 to September 2011, is taking a multi-faceted approach to improving student proficiency in the areas identified as critical to success, focusing on scientific reasoning and mathematics. “Many students are simply not prepared for the rigor of STEM courses, so we need to make sure that enough students get off to a good start,” explained Dean Wheatly. The Gateway project is developing new entry-level courses that can be used for all scientific and mathematical disciplines, as well as providing personal support by training upper-class

students to mentor first-year STEM majors, developing learning communities, and offering hands-on experience outside the classroom.

The Gateway project builds on the success of an earlier NSF-funded project to develop a National Model for Engineering Mathematics Education, an effort led by Nathan Klingbeil, associate professor of mechanical engineering and Robert J. Kegerreis Distinguished Professor of Teaching. The Gateway project expands the revised engineering curriculum to reach a greater number of “not yet ready” students who are at risk to fail calculus courses.

Klingbeil sees the potential for the new course to reach well beyond Wright State and Sinclair, with another grant supporting a pilot at the University of Toledo and the University of Cincinnati and an additional grant pending to expand to 15 institutions nationwide. “We are coming up with a model that state schools in the rest of the country can use,” he said. “The U.S. has been the leader in intellectual capital. If we don’t continue to maintain that, all of our jobs and our lifestyles will be in jeopardy.”

The next targets for the Gateway curricula at Wright State are science majors with lower math placement levels, beginning with biology, which represents the largest number of science majors. Kathy Koenig, assistant professor, Department of Physics, led the development of the new course, which combines lectures and lab work. “The course offers explicit instruction on scientific reasoning, while weaving in math skills and opportunities to practice in interdisciplinary settings,” said Koenig.

The Gateway project also will fund ongoing research to evaluate retention and graduation rates. While the initial course work is designed broadly for all science majors, the research team sees the potential for creating an entry-level course specific to each scientific discipline in the future.

It's a  
small world  
after all

**Sharmila Mukhopadhyay**



CHEMIST PARTNERS FROM PROCTOR & GAMBLE HAVE ALREADY USED EARLIER RESULTS FROM MUKHOPADHYAY'S LAB TO MODIFY CONSUMER PRODUCTS.

COMPUTERS NOW FIT SNUGLY INTO A MAILING ENVELOPE. Cellular phone devices slide right into the ear. Human cells are grown on the most delicate of lab surfaces. As modern materials and devices become smaller in size, the challenge to understand, modify, and control these structures and their components at an atomic level increases in complexity, according to Sharmila Mukhopadhyay, Ph.D., professor of materials science and engineering at Wright State.

Mukhopadhyay has been researching interfacial phenomena in solids as director of the Center for Nanoscale Multifunctional Materials for over 10 years, a work where particles, strings, and films are measured by the nanometer—that's one billionth of a meter. Her research interests focus on material surfaces (outer skins) and interfaces ("seams" where different materials meet), and their abilities to meet stringent property requirements for environmental stability, bonding, tissue attachment, gas sensing, and other factors.

Consider an example. A modern marvel cited in popular science and military literature is "smart paint" used for houses and military tanks. These are coatings expected to not only improve appearance and prevent corrosion but also heal cracks, signal and react to external threats, and repel water, among other functions. A sprayer used to paint a tank cannot be used to paint nanomaterials several thousand times thinner than a human hair. How would one paint these materials for the same property modifications? Will the same coatings work at that scale?

"Our research cuts across many areas and applications. Aerospace composites could be made lighter and stronger, a contact lens may be made more comfortable, a computer chip may be made smaller and faster," says Mukhopadhyay.

"Therefore, multidisciplinary collaboration is not a luxury but a necessity for success. I have worked with industrial scientists, defense laboratories, other universities, and faculty from many departments at Wright State."

Mukhopadhyay's recent work with nanocoatings and nanotubes is evidence of that ripple effect. Mechanical engineers from the Air Force Research Laboratory (AFRL) Materials Directorate and Ohio University are testing the influence of Mukhopadhyay's surface modification methods for use with lightweight aerospace structures. A biologist collaborator in the Human Effectiveness Directorate at AFRL currently co-advises one of Mukhopadhyay's students studying cell growth and biological activity of the same materials for medical implant applications. Chemist partners from Proctor & Gamble have already used earlier results from Mukhopadhyay's lab to modify consumer products. She currently has proposals pending to begin an environmental endeavor to monitor the influence of synthetic nanomaterials on ground soil and water.

Mukhopadhyay has obtained more than \$3 million in research funding from federal and state agencies, like the AFRL, the National Science Foundation, the Department of Energy, NASA, and the Ohio Board of Regents, in addition to some from private industry.

"Our collaborations are bilateral and mutually beneficial, in the sense that the work cannot be performed unless both sides actively participate, and students are cross-trained," commented Mukhopadhyay. "The possibilities are unending and we are limited only by the time and resources we can afford to invest."



**Mark Gebhart**

## Getting ready for a medical disaster

“IN CURRENT NATIONAL URBAN SEARCH AND RESCUE STANDARDS, THE ONLY MEDICAL CARE PROVIDED FOR IS FIRST AID. THAT ASSUMES THE HOSPITALS WILL BE THERE. BUT IN OUR PLANNING, WE HAVE TO ASSUME THAT THE HOSPITALS MIGHT COLLAPSE UNDER THE STRAIN OF A DISASTER.”

IN A NONDESCRIBT WAREHOUSE IN DAYTON, a team of doctors, nurses, engineers, and logisticians from Wright State University, working alongside retired military and community volunteers, are preparing for the worst disaster imaginable: pandemic influenza. Today’s drill involves setting up a 250-bed field hospital as quickly as possible—with the target of six hours from start to finish.

Each square cardboard container they unload contains foldable cots, mattresses, pillows, and blankets. Also included in this “Modular Emergency Medical System” (MEMS) are tidy crates of medical and personal hygiene supplies, food, pharmaceuticals, medical devices, and everything else needed to provide medical care to people in an emergency, when regular hospitals are filled to overflowing or otherwise incapacitated. The entire field hospital fits into a 53-foot trailer.

The project and its team are led by Mark Gebhart, M.D., a veteran of Hurricane Katrina and other urban rescue missions, and assistant professor, emergency medicine, and director, Homeland Emergency Learning and Preparedness Center at Wright State. He has involved experts from across Wright State University, the commercial and health care sectors in the region, and the Air Force Research Laboratory.

Under the auspices of a three-year, \$12 million grant from the Ohio Department of Health through the U.S. Centers for Disease Control, the project is charged with developing and equipping these traveling emergency medical systems to serve up to 1,000 people located in any of the 44 counties in the western half of Ohio. The team also has developed a mobile emergency room in a truck.

According to Gebhart, their MEMS is unique in its design from a medical perspective as well as from rescue experience. “After Hurricane Katrina, teams would go into closed strip malls to set up hospitals and they had nothing. Trucks were loaded haphazardly. We have created a template for the materials on the truck: how they should be loaded and how the floor of the field hospital will be set up so that it makes sense for the flow that doctors and nurses will experience.”

According to Pete Savard, assistant director of Dynamic Medical Systems and a graduate student in logistics and supply chain management at Wright State, “The challenge is knowing the amount of supplies needed when you can’t predict the type of disaster.” That is where real-time information on consumption of supplies is critical. By employing an automated reordering system, the MEMS created at Wright State is much less expensive than similar systems developed elsewhere.

Next, the team is now developing “Calamityville,” a “theme park” for training and research, where clinicians can experience true-to-life simulations of medical disasters. Under the direction of Jim Gruenberg, assistant director for Human Access, Care and Evacuation, Calamityville is envisioned as four campuses, including a 50-acre tactical laboratory for “first providers” of medical care, such as firefighters, police, paramedics, doctors, and nurses.

“Medical readiness is really a critical part of homeland security,” Gebhart observes. “In current national urban search and rescue standards, the only medical care provided for is first aid. That assumes the hospitals will be there. But in our planning, we have to assume that the hospitals might collapse under the strain of a disaster.”

## Sharing the universal language of music

**J a c k s o n   L e u n g**



THE MUSIC DEPARTMENT FACULTY MEMBERS, WHO SERVE AS PRINCIPAL CHAIRS IN THE CHAMBER ORCHESTRA, HAD THE OPPORTUNITY TO MENTOR BOTH WSU STUDENTS AND CHINESE STUDENTS IN SUCH IMPORTANT SUBJECTS AS MUSICAL TECHNIQUE, ENSEMBLE PLAYING, AND CONCERT ETIQUETTE.

WHEN THE 40-SOME MEMBERS OF THE WRIGHT STATE UNIVERSITY CHAMBER ORCHESTRA packed their bags and instrument cases in December 2006 for a trip to China, they embarked on a journey that was both musical and cultural. In the first international tour for the ensemble, the WSU Chamber Orchestra answered the invitation of the governments of Hong Kong and Macau to participate in a musical exchange program with young Chinese musicians. In just one week, the Chamber Orchestra members served as musical mentors, rehearsed with youth orchestras, witnessed performances of traditional Chinese folk songs by school groups, and performed for enthusiastic audiences in two of the most prestigious concert halls in the region.

Sandwiched between constant rehearsals and concerts, the WSU students were treated to sightseeing tours, shopping excursions, and traditional Chinese banquets.

“The students and the faculty enjoyed it tremendously,” said Jackson Leung, D.M.A., director of the chamber orchestra and coordinator of keyboard studies at Wright State. “They were able to visit two cities and build musical friendships with young players.” He also noted that the Music Department faculty members, who serve as principal chairs in the Chamber Orchestra, had the opportunity to mentor both WSU students and Chinese students in such important subjects as musical technique, ensemble playing, and concert etiquette.

It was Leung’s reputation as a musician—and a graduate of Hong Kong Baptist University—that prompted the Hong Kong Music Office to invite the WSU Chamber Orchestra as one of only a handful of ensembles to participate in the annual international musical exchange program.

Getting so many musicians from Ohio to Hong Kong was an expensive and complicated undertaking. A host of staff members from the Department of Music and the College of Liberal Arts helped with the logistics and the fundraising, which took more than a year. The funding came from a combination of private donors and public sponsors, including a \$5,000 Ohio Arts Council International Partnership Grant as well as significant Chinese government support. A number of donors in the U.S. and China contributed generously, including Val Hattemer, Dr. and Mrs. Leung, Edgar Hardy, and Wright State’s Division of Curriculum and Instruction and University College. When all of the donations were counted, each student had to pay only \$400 for the trip.

The Chamber Orchestra presented a special Bon Voyage Concert in November 2006 to salute the tour sponsors in a performance of the pieces they would present in China, including works by Beethoven, Mozart, and Piazzolla. For their concerts overseas, the orchestra also prepared works by Chinese composers.

In preparation for the tour, the Wright State musicians learned a smattering of Cantonese, and they found that quite a few of the Chinese students spoke some English. According to JeeHoon Chung, a Wright State violin performance major originally from Korea who traveled with the Chamber Orchestra, acting as a musical coach to younger students was not as difficult as one might think, even without a common language. “When we actually started playing, it didn’t matter,” he said. “Music itself is like a global language.”



# Funding Highlights

## for Awards over \$500,000



**Mark E. Gebhart**  
Emergency Medicine  
Boonshoft School of  
Medicine

**Acute Care Centers**  
Abstract: This funding will be used to establish two additional Acute Care Centers for use as general medical inpatient facilities during natural or man-made disasters.

\$3,000,000  
Ohio Department  
of Health

**Michele G. Wheatly**  
Administration  
College of Science and  
Mathematics

**Gateway into STEM Curricula: A Model Community College/University Partnership Promoting First-Year Retention and 2- to 4-year Articulation**  
Abstract: Wright State University and Sinclair Community College will collaborate to develop a common first-year Science, Technology, Engineering, and Mathematics (STEM) experience to increase first-to-second-year retention at both institutions (by 10%) and to increase articulation from 2–4 year (by 10%) that will translate to more than a doubling of STEM graduations across all disciplines.

\$1,786,559  
National Science  
Foundation

**Bor Jang**  
Administration  
College of Engineering  
and Computer Science  
**Nathan W. Klingbeil**  
Mechanical and  
Materials Engineering  
College of Engineering  
and Computer Science



**Roger M. Siervogel,**  
**W. Cameron Chumlea,**  
**Stefan A. Czerwinski,**  
**Ellen W. Demerath,**  
**Shumei S. Sun,**  
and  
**Bradford Towne**  
Community Health  
Boonshoft School of  
Medicine

**Adiposity, Disease Risk Factors, and Lifetime Health**  
Abstract: The investigators will continue to collect and evaluate serial data for analyses of body composition, fat-related variables, and risk factors for growth, development, and disease (the Fels Longitudinal Study).

\$1,144,042  
Department of  
Health and Human  
Services, National  
Institute of Child  
Health and Hu-  
man Development  
(NICHD)



**Richard C. Rapp**  
and  
**Robert G. Carlson**  
Community Health  
Boonshoft School of  
Medicine

**Reducing Barriers to Drug Abuse Treatment Services**  
Abstract: Funding will be used to explore, through a case management model, the barriers, real and perceived, to successful follow up substance abuse treatment(s) and how these barriers may be minimized.

\$826,833  
Department of  
Health and Human  
Services, National  
Institute on Drug  
Abuse (NIDA)

**Steve M. Patrick**  
Biochemistry and  
Molecular Biology  
Boonshoft School of  
Medicine

**Biochemical Processing of Cisplatin-DNA Interstrand Cross-links**  
Abstract: This funding will be used to initiate an understanding of the DNA-repair mechanism(s) that is (are) responsible for repairing cross-linked DNA following treatment with the cancer drug Cisplatin. This, in turn, should allow design of better chemotherapeutic drugs.

\$720,000  
American Cancer  
Society—National



**Harold F. Stills**  
Laboratory Animal  
Resources  
and  
**Robert E. W. Fyffe**  
Research Affairs  
Boonshoft School of  
Medicine

**WSU Cage Wash Renovation and Improvement**  
Abstract: Facilities improvement (cage wash room and cage washer) in Laboratory Animal Resources in support of WSU's research efforts involving animals.

\$700,000  
Department of  
Health and Human  
Services, National  
Center for Re-  
search Resources  
(NCRR)

**Dennis C. Moore**  
Community  
Health  
Boonshoft School  
of Medicine

**RRTC on Substance Abuse, Disability, and Employment**  
Abstract: The purpose of this project is to continue to conduct research, training, and dissemination activities to address employment needs of persons with disabilities who also experience substance abuse problems.

\$699,981  
U.S. Department  
of Education





**Forouzan Golshani**  
Computer Science and Engineering

**Nikolaos G. Bourbakis**  
College of Engineering and Computer Science

**John M. Flach**  
Psychology

**Michele G. Wheatly**  
College of Science and Mathematics

**Robert E.W. Fyffe**  
Research Affairs  
Boonshoft School of Medicine

**Shumei S. Sun, W. Cameron Chumlea, Roger M. Siervogel, Arthur S. Pickoff**  
Community Health Pediatrics  
Boonshoft School of Medicine

***IGERT: An Interdisciplinary Initiative on Technology-Based Learning with Disability***

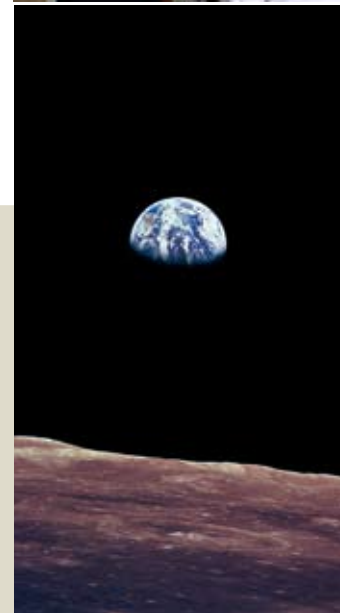
Abstract: This supplement will help create a unique synergistic community at the confluence of special education, basic sciences, and engineering sciences to explore solutions to the complex needs of persons with disabilities.

***Longitudinal Cardiac Outcomes and Body Composition***

Abstract: Year 4 of a four-year project to link adult cardiac structure and hemodynamic function with long-term serial childhood data for body size, body composition, and blood pressure.

\$600,000  
National Science Foundation

\$543,749  
Department of Health and Human Services, National Heart, Lung, and Blood Institute (NHLBI)



**Bradford Towne, Ellen W. Demerath, and Roger M. Siervogel**  
Community Health Boonshoft School of Medicine

**Robin E. Dodge**  
Community Health Boonshoft School of Medicine

***Genetic Regulation of Adiposity and Associated CVD Risks***

Abstract: WSU researchers will explore the genetic influences (i.e., genes) that jointly influence measures of body fatness (adiposity) and associated cardiovascular disease (CVD).

***Aerospace Medicine Training for the Era of Moon, Mars, and Beyond***

Abstract: This award provides continued support for the training of residents in Aerospace Medicine.

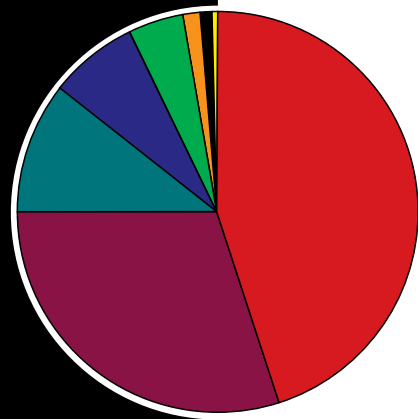
\$542,714  
Department of Health and Human Services, National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK)

\$540,000  
National Aeronautics and Space Administration (NASA)

# Awards

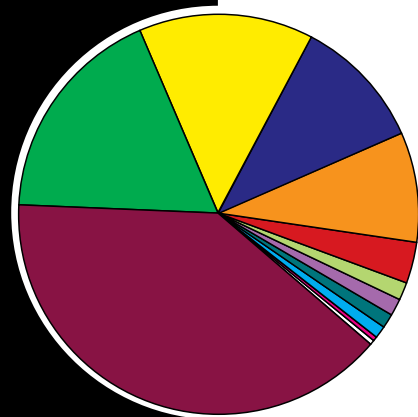
**Table 1 Awards by Major Funding Source FY07**

Major Funding Source	Number of Awards	Amount Awarded
Federal Agencies	107	\$37,333,364
State Agencies	87	\$19,348,275
Industry/Business	163	\$4,391,927
Nonprofits	69	\$4,217,762
Educational Institutions	78	\$3,955,167
Other Government Agencies	34	\$1,312,748
Miscellaneous	35	\$699,205
Foreign Sponsors	3	\$118,822
<b>Total</b>	<b>576</b>	<b>\$71,377,270</b>



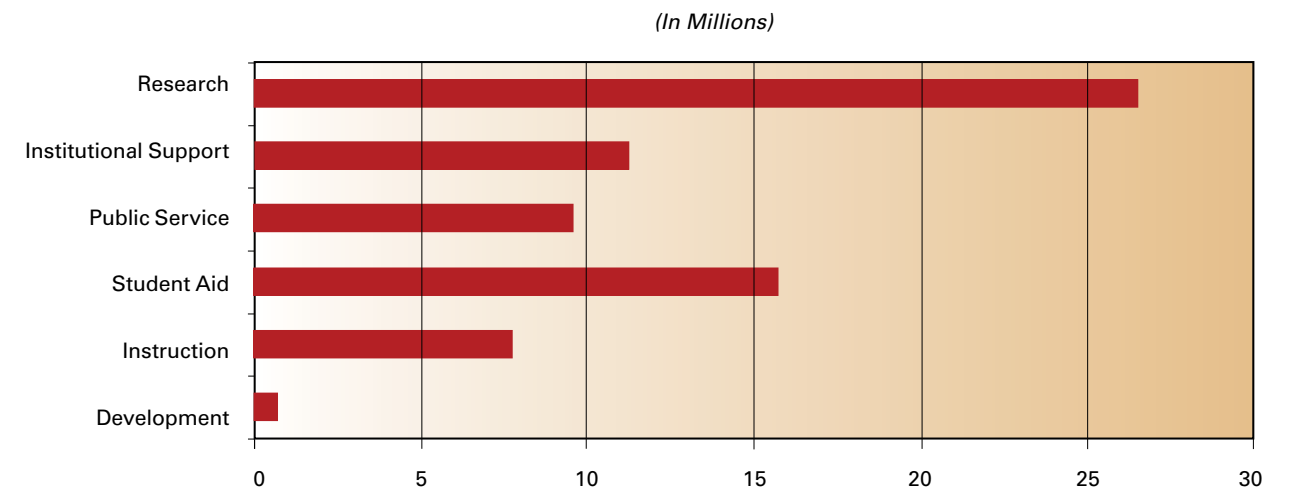
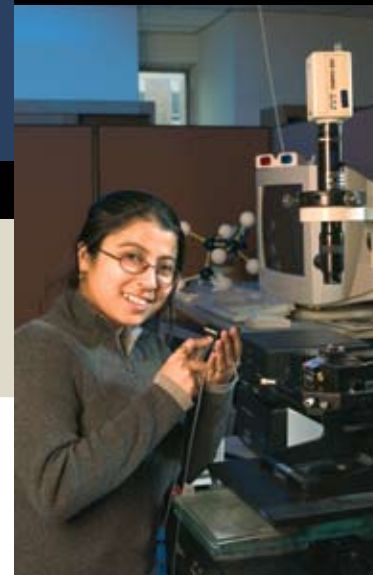
**Table 2 Awards by Campus Area FY06**

Campus Area	Number of Awards	Amount Awarded
Boonshoft School of Medicine	169	\$25,503,785
Student Services	12	\$15,416,841
School of Graduate Studies	14	\$9,227,000
College of Science & Mathematics	137	\$7,991,825
College of Engineering & Computer Science	121	\$7,405,517
University-wide/Miscellaneous	9	\$1,593,733
College of Education & Human Services	14	\$1,528,329
School of Professional Psychology	35	\$1,188,835
College of Liberal Arts	48	\$915,029
College of Nursing & Health	3	\$294,045
Raj Soin College of Business	6	\$222,372
Lake Campus	8	\$89,959
<b>Total</b>	<b>576</b>	<b>\$71,377,270</b>



**Table 3 Awards by Type of Activity FY07**

Type of Activity	Number of Awards	Amount Awarded
Research	329	\$26,420,211
Student Aid	30	\$15,697,312
Institutional Support	38	\$11,242,849
Public Service	74	\$9,626,056
Instruction	68	\$7,748,833
Development	37	\$642,009
<b>Total</b>	<b>576</b>	<b>\$71,377,270</b>

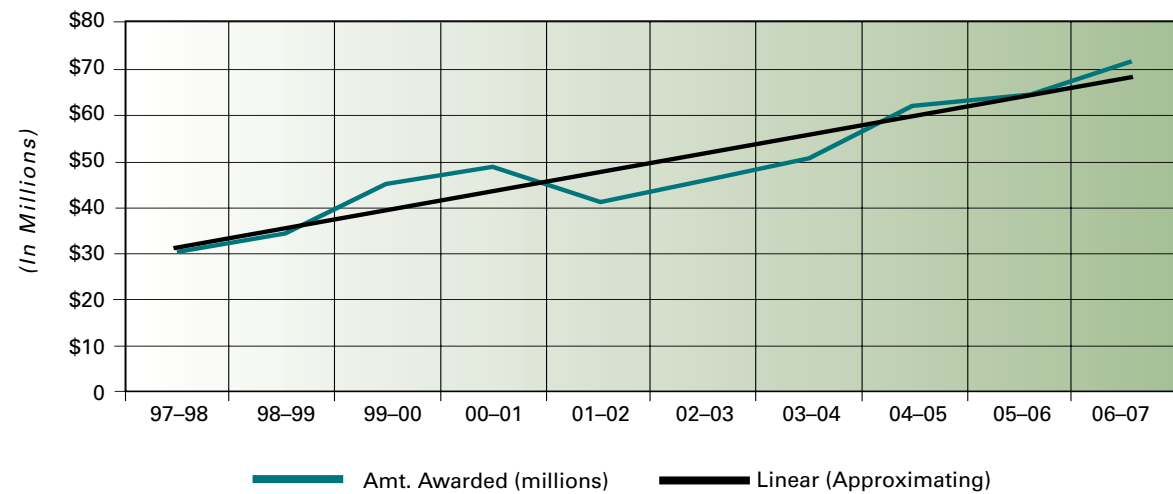




**Table 4 Ten Years of Funding: Grant and Contract Awards FY98 to FY07**

<i>Fiscal Year</i>	<i>Number of Awards</i>	<i>Amount Awarded</i>	<i>Increase/Decrease Vs. Prev. Yr.</i>
1997-98	462	\$30,283,100	
1998-99	460	\$34,642,162	14%
1999-00	475	\$45,339,049	31%
2000-01	481	\$48,510,950	7%
2001-02	537	\$41,362,186	-15%
2002-03	554	\$46,255,284	12%
2003-04	570	\$50,462,293	9%
2004-05	573	\$62,655,115	24%
2005-06	558	\$64,378,342	3%
2006-07	576	\$71,377,270	11%

**Ten-Year Trend FY98 to FY07**



**Table 5 Awards by Type and Campus Area FY07**

<i>College/School</i>	<i>Research</i>	<i>Instruction</i>	<i>Pub. Serv.</i>	<i>Other</i>	<i>Total</i>
Medicine	\$14,280,086	\$1,486,490	\$8,423,902	\$1,313,307	\$25,503,785
University-Wide	\$357,974	\$67,000	\$72,000	\$16,513,600	\$17,010,574
Grad. Studies	\$749,274	\$0	\$0	\$8,477,726	\$9,227,000
Sci. & Math.	\$4,932,782	\$2,766,741	\$500	\$291,802	\$7,991,825
Engineering	\$5,647,392	\$1,100,000	\$500	\$657,625	\$7,405,517
Prof. Psych.	\$163,998	\$442,310	\$491,404	\$91,123	\$1,188,835
Education	\$0	\$1,501,327	\$0	\$27,002	\$1,528,329
Liberal Arts	\$131,443	\$156,576	\$571,111	\$55,899	\$915,029
Nursing	\$6,155	\$223,764	\$0	\$64,126	\$294,045
Business	\$151,107	\$4,625	\$66,640	\$0	\$222,372
Lake Campus	\$0	\$0	\$0	\$89,959	\$89,959
<b>TOTAL</b>	<b>\$26,420,211</b>	<b>\$7,748,833</b>	<b>\$9,626,057</b>	<b>\$27,582,169</b>	<b>\$71,377,270</b>

**Table 6 Awards by Federal Agency and Campus Area FY07**

<i>College/School</i>	<i>DHHS</i>	<i>DoD</i>	<i>NASA</i>	<i>NSF</i>	<i>EDUC</i>	<i>Other Fed</i>	<i>Federal Total</i>
University-Wide		\$5,595			\$15,387,851		\$15,393,446
Medicine	\$10,296,169	\$314,768	\$1,175,000	\$699,981	\$2,788,816	\$15,274,734	\$3,753,326
Sci. & Math.	\$466,036	\$628,114	\$166,784	\$2,348,430		\$143,962	\$2,442,125
Engineering		\$717,728	\$0	\$1,640,397		\$84,000	\$287,890
Nursing	\$287,890						\$181,843
Prof. Psych.	\$92,720				\$89,123		\$0
Liberal Arts							\$0
Business							\$0
Education							\$0
Lake Campus							\$0
Grad. Studies							\$0
<b>TOTAL</b>	<b>\$11,142,815</b>	<b>\$1,666,205</b>	<b>\$1,341,784</b>	<b>\$3,988,827</b>	<b>\$16,176,955</b>	<b>\$3,016,778</b>	<b>\$37,333,364</b>



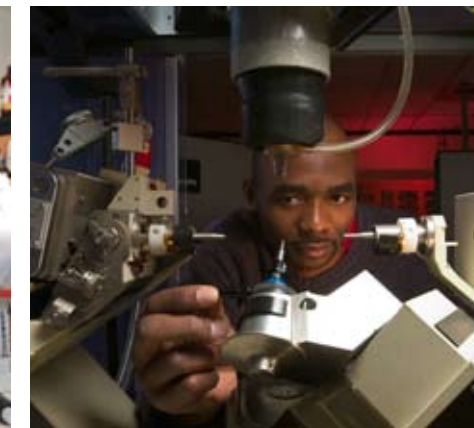
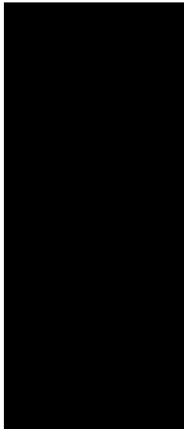
**Wright State University Research Centers**

**Primarily Basic and Applied Research**

- Center for Genomics Research (CGR)
- Center for Global Health Systems, Management, and Policy
- Center for Interventions, Treatment, and Addictions Research (CITAR)
- Center for Nano-scale Multifunctional Materials
- Comprehensive Neuroscience Center (CNC)
- Computational Design and Optimization Center
- Homeland Emergency Learning and Preparedness Center
- Lifespan Health Research Center
- Semiconductor Research Center (SRC)

**Primarily Applied Research and Development**

- daytaOhio: The Ohio Wright Center for Advanced Data Management and Analysis
- Kno.e.sis: Knowledge Enabled Information and Services Science
- Wright State Research Institute
- Center for Urban and Public Affairs (CUPA)



WRIGHT STATE RESEARCHERS HAVE DEVELOPED A MATURE CONCEPT OF COLLABORATION BOTH ACROSS THE UNIVERSITY AND WITH EXTERNAL PARTNERS THAT HAS ALLOWED US TO GENERATE SOME VERY LARGE GRANTS. THE VISION OF WORKING TOGETHER HAS BEEN EXTREMELY IMPORTANT IN OUR RECENT SUCCESSES AND GREATLY BENEFITS THE REGION.

—Joseph F. Thomas, Jr., Ph.D.  
Dean, School of Graduate Studies

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