Bringing research, teaching and industry together

A new multidisciplinary graduate program at MSU prepares scientists and engineers to meet the needs of the “green” economy of our future

“Multidisciplinary” and “interdisciplinary” are popular buzzwords in academia these days. Fully integrated interdisciplinary collaborations in higher education go beyond “buzz” and can make a significant difference in the lives and work of some graduate students and their faculty mentors.

A new graduate program at MSU, the Multidisciplinary Graduate Training Program on Technologies for a Biobased Economy (TBE), invites students to blaze their own trail across disciplines and departments by placing interdisciplinary research and teamwork at the very heart of its program.

The four specific objectives of the TBE program are:
1) to provide a multidisciplinary graduate education focused on the conversion of renewable raw materials into commercial products
2) to help students develop the professional skills needed to work effectively in multidisciplinary research teams
3) to involve industry in the educational process so as to maximize the relevance of the training
4) to produce graduates versatile enough to succeed in the academic, private, nonprofit, and governmental sectors

This innovative training program is poised to create a new generation of diverse Ph.D. scientists and engineers who can work effectively across disciplinary lines and apply the latest theories and discoveries of the ivory tower to the “real world” concerns of business and industry.

One member of this group is Professor John Ohlrogge from the Department of Botany and Plant Pathology. A recent recipient of an MSU Distinguished Faculty Award, Ohlrogge collaborates with graduate and undergraduate students in his work aimed toward finding new commercial applications for plants.

The TBE program brings together faculty and students from the Departments of Chemical Engineering, Chemistry, Biochemistry, and Botany and Plant Pathology. According to Professor Mark Worden of the Department of Chemical Engineering, who took the lead in initiating the new program, MSU is a natural site to support the Program due to its tradition of excellence in biology and bioprocessing and its low barriers to interdepartmental collaborations.

The burgeoning fields of bioprocessing and biotechnology are ripe for cross-disciplinary collaboration. In laboratories and board rooms across the country, biochemists, botanists, chemists, and other scientists are coming together with engineers and business experts to establish groundbreaking strategies in which plant sources can be put to use in industry through cost-effective and environmentally-friendly “green” commercial products.

The TBE program at MSU helps to meet the national need for broadly-trained Ph.D. scientists and engineers able to conduct research and development in support of the rapidly growing biobased-products industry.

Worden was inspired to take the lead in developing the TBE program in part because of the potential he saw to unite faculty members and students from various departments who were immersed in important bioprocessing projects.

“MSU has an outstanding group of faculty in this area, but they were loosely associated with each other; this program is an effort to bring them together through the common focus of teaching and research related to bioprocessing,” explains Worden.

In 2000, Worden collaborated with his faculty colleagues to secure fellowship funding for the TBE program through a Department of Education Graduate Assistance in Areas of

One of the success stories from biobased collaborations at MSU is the creation of the popular new drug to fight the flu, Tamiflu, which is produced by F. Hoffman-La Roche & Company. Tamiflu is derived from a biochemical produced by a fermentation process developed by Professor John Frost of the Department of Chemistry and the Department of Chemical Engineering. Other faculty members are collaborating on campus and with the nearby Michigan Biotechnology Institute to develop new products based on succinic acid. This acid is considered a “commodity product,” a biobased chemical which yields a large volume of products at a low price. Thanks to their work, succinic acid is becoming the basis for new commercial items such as a de-icer, a food flavoring substance and a new form of plastic.

The Graduate School, Spring 2001
National Need (GAANN) grant and a Department of Energy Biobased Products Industry (BPI) grant. This funding allowed Worden to launch the program in Fall semester of last year.

The proposal for the TBE program was able to secure this national financial support in part because it responds to a major impediment to the successful development of a biobased products industry in the United States: the lack of an educational infrastructure to provide Ph.D.s able to integrate knowledge from diverse science and engineering fields. A recent National Research Council (NRC) study, conducted to identify research and commercialization needs to support US biobased industries, articulated this problem. The NRC concluded that chemical engineers need to be better trained in the biological sciences, and that biologists need to be trained in process engineering, so that the biologists and engineers can work together effectively to establish the technical infrastructure for developing, manufacturing, and using biobased products. “Unless chemical engineers and biological scientists are able to ‘speak each other’s language,’ the development of a more sustainable society based on renewable resources--with all of its attendant benefits for the environment and economy--will be delayed,” says Dr. Bruce Dale. Dale is the head of the Department of Chemical Engineering at MSU and co-chaired the NRC study.

The NRC report also makes clear the vital need for the U.S. to develop biobased industrial products due to limited petroleum resources. Raw materials such as corn, wood and grasses can be developed as viable petroleum substitutes and would have the added benefit of supplying farmers with new markets.

The government report clearly outlines the vast potential of biobased products to become an important “green” industry, but the challenge once again, according to Worden, is that “getting to the final products requires the input of different disciplines.” The multidisciplinary thrust of the TBE program clearly helps answer this challenge.

The TBE promotes the NRC’s agenda by requiring Fellows to put into practice their cross-departmental studies through a dissertation research project relevant to the biobased products industry. The topic of the dissertation research project is to be chosen by the student, in consultation with his or her advisor and Ph.D. committee. Projects must be multidisciplinary in nature and must represent collaborations between the research groups of two or more TBE program faculty members.

“I’m getting into the TBE program because it is really a great opportunity to perform research that is self-directed,” says Casey Preston, a Chemical Engineering Ph.D. student who began as a TBE Fellow last Fall. “I’m interested in biochemical engineering, which is a prime component of the research that needs to be done in the areas that the TBE program covers.”

Research activities are only one innovative aspect of the training program. To ensure that “real world” industrial concerns and issues are fully addressed, an Industrial Advisory Committee (IAC) was created to help plan the structure of the TBE Program and to participate in its implementation. The IAC assists with locating industrial speakers to participate in the TBE seminar course and helps arrange for the industrial representatives who serve on the Ph.D. committee of each Fellow. At MSU, industrial representatives are commonly given adjunct faculty status for this purpose.

Furthermore, industrial participants are asked to provide feedback on the effectiveness of the training program. “The IAC includes representatives from many of the largest corporate players...”
in biobased products industry, including DuPont, Dow Chemical Company, and Cargill. We are developing multi-level partnerships with these companies that involve research, education, and technology transfer,” says Worden.

Because the biobased products industry is a primary constituent of the training program, feedback and participation by the members of the IAC is an important aspect of the Program’s assessment process. The involvement of industry leaders also helps facilitate industrial recruitment of the Fellows upon graduation.

The IAC also plays a crucial role in organizing the Fellows’ one-semester industrial internships. These internships are a TBE requirement intended to give students an industrial perspective and help them develop contacts with industry. During these internships, the Fellows will be encouraged to perform research relevant to their dissertation topics and possibly develop a proposal for commercial development of a new biobased product or process by the company.

In addition to the industrial internship, the Fellows must also fulfill two other requirements in addition to the standard PhD requirements of their home departments. One of these requirements asks students to complete the Multidisciplinary Bioprocessing Laboratory (MBL) course. The MBL course, which is open to seniors and graduate students from science and engineering programs, was originally developed in 1999 with funding from the National Science Foundation. The MBL course brings together students from different engineering and bioscience fields in order to instruct them on how to conduct research effectively in multidisciplinary teams. The student teams work closely with a research mentor from the research lab of one of the participating faculty on a semester-long, multidisciplinary research project (see box on facing page with complete list of TBE faculty members). The course culminates with oral and written presentations of the research results.

According to Worden, the success of this course helped inspire the proposal that led to the comprehensive TBE program. “Our industrial colleagues have stressed the importance of multidisciplinary teams in their operations. Some companies even provide their employees training on multidisciplinary team skills. We took this as a mandate to develop a graduate training program that emphasized the multidisciplinary aspects, and we made the MBL course a core requirement of the TBE program,” says Worden. Additional information about the MBL course may be found on its web page: www.egr.msu.edu/che/html98/classes/491.

“Our industrial colleagues have stressed the importance of multidisciplinary teams in their operations. Some companies even provide their employees training on multidisciplinary team skills. We took this as a mandate to develop a graduate training program that emphasized the multidisciplinary aspects, and we made the MBL course a core requirement of the TBE program,” explains Dr. Mark Worden of the Department of Chemical Engineering.

The third TBE requirement has students participating in the Certification in College Teaching Program (CCT). The CCT is an enrichment program launched by The Graduate School, in collaboration with each participating college, which is designed to improve communication and teaching skills by promoting scholarship in teaching as well as scholarship in research. Most existing research-grant programs that support graduate students place an emphasis on the quantity of research results and provide little opportunity for the students to develop teaching skills. Graduate students in the TBE program will participate in the CCT program in order to develop the skills needed to effectively teach technical concepts. Such skills would allow the Fellows to efficiently share their knowledge as teachers after graduation, thereby leveraging the benefit of the Program to the emerging biobased product industry. Both the College of Natural Science and the College of Engineering have developed versions of the CCT. Information about these versions may be found on their websites: www.ns.msu.edu/TAcertificate/Default.htm and www.egr.msu.edu/~somerton/CTC_Program/, respectively.
General information about the CCT program can be found at the Graduate School’s webpage at http://grad.msu.edu/teaching.html.

Furthermore, Fellows will be able to supplement the TBE requirements by taking unique MSU offerings designed as “bridging” classes. These courses give students an introduction to the basic principles of chemical engineering. For instance, a Chemistry graduate student could take CHE 804 and CHE 805 to get an overview of chemical-engineering vocabulary, concepts and problem-solving skills. They could then apply these concepts to enhance their own research or to work more effectively with chemical engineers in a multidisciplinary project. These courses were initially designed to help students “fill in” background knowledge where they needed to meet the degree requirements in their chosen major.

However, these same courses can now provide TBE students, for example, with an overview of a field other than their own so they can work more effectively in interdisciplinary research teams. These courses “further expand the definition of multidisciplinary education,” according to Worden. In recent years, these courses have allowed several students to simultaneously earn Ph.D. degrees in both Chemistry and Chemical Engineering. Worden is now working with colleagues and the MSU Virtual University to develop an Internet version of the bridging courses that will be offered year-round to a broader audience.

With the establishment of this new Multidisciplinary Graduate Training Program on Technologies for a Biobased Economy, MSU advances its reputation as a national leader in the important area of bioprocessing. By offering both research expertise and innovative educational programs, MSU promotes the development of biobased industrial products and ensures that the next generation of Ph.D.s is equipped to work together in order to maximize the potential of biobased products to meet the challenges of this new century.

Faculty participating in the Multidisciplinary Graduate Training Program on Technologies for a Biobased Economy and their research foci

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This logo is a visual representation of the multidisciplinary approach used by faculty and students in the area of bioprocessing. The interlocking icons represent the synergistic interdependence of the participating disciplines. This logo was designed by Kristy Ainslie, a graduate of MSU’s Department of Chemical Engineering.
DREAMS AND URPS: Building tomorrow’s researchers

Two summer programs give students a unique mentoring experience

The culture of the academic workplace is such that ignorance of basic research methods, coping strategies, and unwritten rules can create roadblocks that hinder a student’s progress. Eliminating these difficulties is the goal of two very successful summer programs at MSU.

MSU’s Developing Research Expertise at Michigan State (DREAMS), and Undergraduate Researchers in the Plant Sciences (URPS) challenge participants to engage in a regimen of academic research preparation through their intensive summer preparatory institutes. Each program is designed to socialize students and prepare them for the demands of research.

While DREAMS focuses on graduate research mentoring opportunities, URPS directs its concentration to training undergraduates to recognize opportunities in the plant sciences.

DREAMS is a nine-week summer program dedicated to providing valuable experience to incoming graduate students in the areas of research design, data analysis, communication, and problem solving. The participants, underrepresented undergraduates or newly admitted ALANA* graduate students, are partnered with professors in their academic fields who serve as mentors.

Mentors meet regularly with mentees to develop a research project, to strategize about the best approach for implementing the study, and to monitor their progress. Dr. Steve Bursian of the Department of Animal Science served as a DREAMS faculty mentor and says, “It gave me an opportunity to share my knowledge and experience with a student. The reward was witnessing her taking an interest in what she was doing and taking the initiative to learn more about her research project on her own. She is now working on her master’s degree under my direction. I am confident that she will continue to grow as a scientist.”

According to DREAMS coordinator Hester Hughes, a Ph.D. student in Child Development, “mentoring and networking are vital aspects of the graduate school research experience; therefore, these skills have become a major thrust in the mentors, participants are taught to anticipate roadblocks and to think creatively about solutions.

For Guillermo Ortiz-Colon, a recent DREAMS participant, currently enrolled as a graduate student in MSU’s Department of Animal Science, these troubleshooting sessions “systematically gave me the tools I needed to excel in graduate school.” The experience is invaluable to his graduate work: “I am using all that I learned on a regular basis. Now everything is more intense, so I am glad I had an opportunity to learn (research skills) in a less stressful environment.”

According to Dr. Yevonne Smith, Associate Dean of ALANA Student Affairs, “All students in DREAMS are expected to co-author a research project and make an oral and poster presentation demonstrating their contribution to the field of scholarship for their culminating experience.” DREAMS faculty mentor Dr. Anne K. Soderman, Professor and Acting Chair in the Department of Family and Child Ecology, remarked on how the experience was useful for her: “Through the poster sessions and presentations at the end, I became more aware of what was going on in other parts of the university and competencies being developed in graduate students.”

A research project and presentation are also undertaken by undergraduate students in the URPS, except the emphasis hinges on the nature and use of scientific inquiry in the plant sciences.

URPS Coordinator Dr. Kenneth Poff of the Department of Botany and Plant Pathology stresses the need for URPS students to “gain the advantage of learning about the rigors of the research climate while they are still undergraduates.” This helps students accustom themselves to the graduate research environment, and encourages them to implement some of the lessons learned —through the summer program—into the balance of their undergraduate school year. While both programs gear students toward careers in scholarship, URPS focuses on exploring a variety of career opportunities in the plant sciences.

Add s Poff, “URPS provides tools for success and opens vistas of opportunities in plant sciences.” He feels that the knowledge of the diversity of applications for agribusiness in academia, private

(continued on page 15)

*ALANA stands for African American, Latino(a)/Chicano(a), Asian/Pacific American and Native American
Playing to their strengths
School of Music faculty encourage students to practice what they teach

As visitors to the MSU campus stroll past the Music Building, they may actually hear the sounds of teaching and learning going on inside the School of Music. Located just west of Beaumont Tower near the northern edge of the MSU campus, the School is home to innovative graduate programs and unique research and teaching activities that draw students to East Lansing from across the U.S. and around the world.

Students and faculty within the School are engaged in an exciting range of projects revolving around the study and practice of music. Students have access to computer music studios, a computer-assisted-instruction classroom, a music education resource room, a music therapy clinic, a psychology of music laboratory, recording facilities, rehearsal and practice rooms, and teaching studios. These state-of-the-art facilities foster the professional development of these future composers, music educators, music therapists and performers.

The performance schedule on the School’s webpage (www.music.msu.edu/events.html) reveals that students—both graduate and undergraduate—are encouraged (and sometimes required) to put their music education into practice in the form of dozens of solo recitals and collaborative performances throughout the year, many of them presented to the public free of charge.

The School offers a Master of Arts degree in musicology and a Master of Music degree in composition, conducting, education, performance, music therapy, music theory or piano pedagogy. Many master’s students also have the opportunity to work as graduate assistants, providing guidance and instruction to undergraduates pursuing similar fields of study.

“A major strength of the master’s programs is the one-on-one mentoring that students receive from the faculty. Performance majors have many opportunities for solo, chamber, and large ensemble performance, providing necessary experience as they prepare for professional performing careers,” says Dr. Frederick Tims, Associate Director for Graduate Studies. “On the academic side, students in music education, music therapy, music theory, music composition, and music history are actively encouraged to publish their research, in preparation for scholarly careers.”

The School of Music is also home to 112 doctoral students whose research areas include music composition, conducting, performance, as well as music education, theory and musicology. These Doctor of Musical Arts (D.M.A.) and Doctor of Philosophy (Ph.D.) students are clearly making their presence seen—and heard—in significant performance and research projects on campus and in the region.

“The D.M.A. is a performance degree, designed to prepare graduate students for professional performance or teaching instruments or voice, usually in a university setting, but also in professional performing groups,” explains Tims. “In contrast, the Ph.D. is an academic degree in music theory, music history, or music education. This degree prepares graduate students for careers in research and academia. These students are involved in developing new knowledge and teaching academic subjects in music.”

Raphael Jimenez came to East Lansing from Venezuela in 1998 to earn a D.M.A. in conducting. Jimenez arrived at MSU as part of a select group of students recruited to MSU each year as University Distinguished Fellows, doctoral candidates whose academic excellence earns them four years of full financial support from The Graduate School and their department.

Composition doctoral student Paul Schreiber assists bassoon doctoral student I-Shan Lee in the Computer Music Studios located in the Music Practice Building. Schreiber and Lee are just two of the many graduate students discovering new ways computers can assist them in their work at the School of Music.
The opportunity to practice his conducting skills makes Jimenez’ experience at MSU particularly important to his future career. “Direct experience is the most valuable thing for conductors,” explains Jimenez, whose hands-on work includes conducting with the MSU Philharmonic Orchestra, a new campus orchestra made up of undergraduate music majors. This semester, Jimenez conducted the School’s Chamber Orchestra, a smaller subset of its Symphony Orchestra, in a university opera production of Mozart’s “The Marriage of Figaro.”

Conducting a full-scale opera production—complete with sets, lights and costumes—is a rare opportunity for most conducting students, according to Jimenez. Two years ago, he had his first experience conducting an opera when the School mounted a production of “La Traviata.” Working on these productions prompted Jimenez to join with other students in exploring the possibility of starting an opera production company at the School of Music.

Another D.M.A. student, Paul Schreiber, is earning a degree in music composition and using his research expertise to benefit students in the Lansing community. Schreiber leads the Computer Music Program, a ten-week outreach program funded through a federal Housing and Urban Development grant designed to keep kids off drugs.

Schreiber’s program teaches young kids and teenagers how to create original music compositions using computers. His students become proficient at sampling music, editing audio, adding effects, as well as gain general computer skills. Four CDs have resulted from Schreiber’s ongoing project with various student groups, and the Lansing Housing Commission reports that the Computer Music Program is one of the most successful programs in their history. Schreiber describes his outreach project as not only educational for students, but also informative for own research.

The Program gives him a chance to apply his education beyond the classroom and discover more about how to integrate computers into composition pedagogy: “in developing the program, I’ve found out what works and what doesn’t work. When a kid comes through the door, I have about five minutes to get them involved or else they will walk out. I have found that the best programs produce instant results that will get them excited and they will stick around and explore more.”

Schreiber’s Computer Music Program is just one part of the extensive network of campus and community outreach efforts sponsored by the Community Music School. Founded in 1993, the Community Music School (CMS) fulfills the land-grant mission of the School of Music at MSU by promoting diversity and providing service to the community in the area of music education. The mission of the CMS is to provide comprehensive music education—quality instruction, related music services and educational programs—for interested individuals of all ages and levels with financial assistance for those in need.

School of Music faculty member Dr. Cindy Taggart is the director of the Early Childhood Music Program at the CMS. Taggart describes the Program’s overall goal as “enriching children musically” by giving them “a solid exposure and immersion in a good music environment, which lays the groundwork for all future music learning.”

Additionally, the Early Childhood Music Program and other CMS services serve as a professional development opportunities for the School’s music education students. “Our [academic] research informs our practice at the Community Music School,” says Taggart, “but also gives undergraduate and graduate students an opportunity to actually teach and engage in outreach activities.”

Connecting research and practice in the area of music education is one of the goals of Donna Emmanuel’s dissertation project. Emmanuel works with Taggart as a Ph.D. student in Music Education and has conceived a highly original dissertation project on how educators-in-training approach a diverse population of students. The heart of her dissertation research will come out of a course she is teaching this summer that serves as field experience for undergraduate music education students. The course is a three-week immersion internship in which music education students live in downtown Detroit in order to study and work at Beard Elementary School near the city’s Mexicantown. They will observe and interact with a diverse population of Hispanic, African American, Caucasian and Arab students in order to learn about the general music classes at the school and engage in team teaching exercises. MSU students in this course will also take trips to observe the music education programs in other urban schools in the area, including some secondary instrumental and choral programs.

Emmanuel’s course—and her research—are designed to address a gap she perceives in the future of elementary music education. “Music education students need the experience of working with a diverse group of K-5 students,” says Emmanuel. “Considering our nation’s current demographic shifts, music educators will need to know how to teach effectively in culturally diverse school settings.” Emmanuel adds that many urban centers like Detroit face a shortage of music teachers. The experience the students receive during this immersion program will possibly help begin to remedy this shortage and serve as the research base for Emmanuel’s dissertation. Her study will look at what she terms the “expectations, attitudes and beliefs” that undergraduates express in their written self-examinations conducted before, during and after the immersion program. Emmanuel credits the School of Music’s graduate faculty for fostering an “empowering” environment that encourages and supports innovative research projects like her own.

Important pioneering projects are also happening in the School of Music’s computer music studios. The School’s computer music offerings and studios are dedicated to fostering education, research, and creative work in the field of computer music. Desktop computer and computer workstations are quickly becoming an important tool for performers, composers and researchers in many areas of music practice. Computers are used to generate and analyze sound, to assist in the process of composition, to create and print scores and parts, to record and edit sound, and to capture and transcribe aspects of musical performance, among other functions.

“The computer music courses and studios allow music technology to be
integrated in various ways in a wide variety of concentrations in music—for instance, in music composition or music education,” according to Dr. Mark Sullivan, Chairperson of the Composition Areas and Director of the Computer Music Studios within the School of Music. “For example, composers can use technology while investigating how to teach composition or the nature of the creative process, not only the creative process used to create sonic artworks for concert, but also that which can be used to create music compositions in a wide range of classes as part of the education of all students. At the same time, music education students can gain experience not just with the technical aspects of music technology, but with its creative potential as well, as they create their own acoustic pieces using the technology.”

Schreiber’s outreach program, which brings students to computers in order to compose original compositions, is a positive example of how the School of Music’s faculty and administrators are encouraging educators and students to use technology in the creative process. As a doctoral student, Schreiber studies and works under Sullivan’s guidance in the Composition program, with an emphasis on computer music and technology. The School of Music’s performance doctoral students are also engaged in professional projects and activities that take them beyond the MSU campus. “We encourage students to perform on campus and take advantage of professional opportunities in the area,” says Walter Verdehr, Professor of Music who teaches violin performance. “Graduate students from our program are asked to perform with the Lansing Symphony and with professional orchestras in Jackson, Kalamazoo, Battle Creek and Flint.” Performance students also gain significant teaching experience at the CMS and in area schools, which are often in need of music instructors.

Verdehr, who has been teaching at MSU for over thirty years, was recruited directly from the Juilliard School of Music. He now takes the role of recruiting students to graduate work at MSU from around the world. Along with his wife, renowned clarinetist and School of Music faculty member Dr. Elsa Verdehr, and pianist Dr. Silvia Roederer from Western Michigan University, Verdehr performs throughout the year in international concert venues. He conducts master classes at each location, becoming a representative of MSU’s performance program and attracting students from countries such as China, Australia and England, who wish to study under his direction.

In 1983, Xie Min was a student at the Xi’An Conservatory in his native China when he first heard Verdehr’s trio perform and was intrigued by the performance. After studying under Verdehr for two years at MSU, Min taught violin for ten years at the Conservatory but returned to MSU in 1996 to pursue his doctorate in violin performance. “Dr. Verdehr takes good care of his students, both personally and professionally. He guides them to develop their own personality as performers and scholars,” says Min, who also works as a graduate assistant with Verdehr, teaching violin performance to graduates and undergraduates.

Master of Music student Brenda Rabbe in costume as Countess Almaviva in the School of Music’s recent production of “The Marriage of Figaro.” Rabbe is studying vocal performance. “I plan to perform professionally in the opera world, and to continue teaching voice lessons,” she says, so performing this role is a valuable asset to her education at MSU.

Dr. Michael Heald is Assistant Professor of Music at the University of Georgia and a School of Music alumnus who studied with Verdehr and comments on his mentor’s influence: “As a teacher he is patient and thoughtful, and expects a high level of preparation and performance.
from his students. He is always focused on the most important aspects of communication in music-making, yet he is also very concerned with the beautiful execution of the notes themselves.”

The high job placement rate of the doctoral graduates is one of the best indicators of the outstanding education that students are earning at the School of Music. In recent years, the School of Music has ranked either first or second in the nation in the numbers of graduate students placed in tenure-track faculty music positions, as reported by Lingua Franca.

The School’s graduate students compete successfully within a tight academic job market in part because of the wide range of innovative research and outreach activities they are encouraged to pursue while at MSU, and the close mentoring relationships they develop with faculty members.

“The profession is changing—it is not the same formal, detached concert setting that people associate with music,” says Professor James Forger, Director of the School of Music. Clearly, one of the strengths of the School is its ability to keep its graduate programs evolving to meet these changes and encourage its graduate students to become active participants in shaping the future of music education, composition, theory, performance and music therapy.

For more information on the School of Music:
School of Music homepage: www.music.msu.edu/
Admissions and degree information: www.music.msu.edu/admissio.html
Concerts and events: www.music.msu.edu/events.html
Community Music School and Early Childhood Music Classes: www.msu.edu/~commusic

(continued from page 11)
industry and urban planning become part of the student’s orientation.

Field trips to commercial greenhouses, vineyards, viticulture labs, golf courses and landscaping retailers help to reinforce ideas about the place of agricultural science in

“It is vital to the future of our agriculture to expose a wide range of young potential research scientists to the exciting and fundamentally important world of plant science. The URPS program does a superb job in this regard,” according to one URPS faculty mentor, Dr. Michael Thomashow from Crop and Soil Sciences.

“It offers a diverse group of students the chance to directly experience cutting-edge research and to become more fully aware of career choices in the plant sciences. It has been a highly rewarding experience for me.”

URPS enrichment events are made up of presentations, seminars, and field trips that provide a much-needed supplement to lab work and help students to connect and share their individual research experiences with each other, providing a supportive environment for problem solving. These opportunities make the pursuit of career goals that much more vividly accessible.

For more information on the DREAMS and URPS programs:
DREAMS
Contact the Office of ALANA Student Affairs at (517) 353-3262, or go to their website at http://grad.msu.edu/alana/dreams.htm

URPS
Contact Dr. Ken Poff, Coordinator, at (517) 353-1789, or visit the URPS website at www.prl.msu.edu/urps/
School of Social Work helps students succeed with national initiatives, outreach programs and innovative curriculum

In its ongoing quest to meet the needs of children and families, the Master of Social Work Program—the largest graduate program in the College of Social Science—applies a diversified approach to training its graduate students. The M.S.W. is both a professional and graduate program, with a separate accreditation for the professional degree. For the two hundred students pursuing this terminal degree, the varied offerings cross-referencing fieldwork and class theory, are proving to be an invaluable asset to their training in the field.

“Through our comprehensive educational programs, the School is preparing future clinicians, community and administrative leaders, and policymakers to address the challenges facing Michigan families and communities,” says Gary Anderson, Director of the School of Social Work.

As a function of its mission, the School is sponsoring several initiatives aimed at training the next generation of social workers to better assist children and families in all capacities. These initiatives support graduate education through interdisciplinary seminars, education-based field projects, and future faculty hiring.

The School’s Chance at Childhood Program is a national model for educating social workers and attorneys together. This certificate program brings together M.S.W. and MSU Detroit College of Law students on campus and in the community. Law students and M.S.W. candidates enroll in a graduate seminar together, complete field placements together and share a mutual set of course requirements that reflect an integration of both programs. This allows students in both fields to gain valuable experience and insight into working effectively with families within the U.S. court system. For M.S.W. student Cynthia Lamont, this opportunity was not to be missed. She gained knowledge of “the importance of utilizing the proper interviewing techniques when working with small children, especially, when testifying in court—gaining familiarity with Michigan’s foster-care and adoption procedures and learning to work effectively as a team player.”

For law student Joanne Bridgeford, the perspective gained from accessing to a learning environment that combines law with social work eliminates the “huge disadvantage” of approaching her concentration of family law without a familiarity with the “social, medical and psychological aspects” of her chosen field.

The second initiative is the endowed conference and workshop series named for emeritus professor Ruth T. Koehler. Conferences will be conducted every three years and workshops will be held annually focusing on issues affecting children and families. The workshops are designed as clinics for graduate students and community practitioners who wish to hone their skills within a subspecialty of child and family care. The inaugural workshop—held last October—was titled “Helping Them to Heal,” and featured speaker Dottie Ward-Wimmer, Senior Clinician at the Center for Loss and Grief in Washington, D.C. Her remarks addressed the topic “Play Therapy with Children who have been Traumatized by Violence.” Workshop attendees learned to treat children whose responses to violence indicate the need for counseling or other types of intervention. Ward-Wimmer spoke about the value of play therapy in listening to children; “playing” with them can be an effective way to understand their needs.

The third initiative is an endowed professorship in the area of children’s services that is currently being developed. M.S.W. candidates at MSU will find these children’s initiatives helpful because their career trajectories most often land them in areas of child and family counseling, children’s mental health, child welfare, and social work within the schools.

The School also offers a Ph.D. program for students who are considering an academic career in social work, or who plan to use their research and theoretical expertise to work in public policy or head a social agency. Anderson cites the shortage of Ph.D.s for faculty positions in social work programs as a reason for the open job market encountered by MSU’s doctoral candidates and alumni. “We provide faculty for a number of social work programs throughout the state of Michigan,” says Anderson, who explained that most Ph.D. candidates are nontraditional students, often students with families, who have earned their M.S.W. degrees and then spent time in the field before returning to school to earn their doctorate. According to doctoral candidates like Cheryl Brandsen, this combination of research and experience at MSU has paved the way for her to “make a difference” throughout Michigan. Brandsen is currently Director of the School of Social Work at Calvin College.

The School of Social Work is also making groundbreaking strides in the area of distance education. In partnership with Northern Michigan University, located in Marquette, Michigan, in the Upper Peninsula, the School has made its M.S.W. program available to U.P. residents through video interactive television. This technology allows students and professors to connect and talk in “real time” via interactive television. This becomes a boon for time-crunched students, who often hold full-time jobs and commute long distances.
**M.S.W. alum speaks out on degree program and professional goals**

“I graduated with a good grasp of basic social work theory and practice, and I made some good friends as a result of my time in the M.S.W. program,” says Angie Kelleher, a 1999 graduate of the School of Social Work. “I also gained experience with diverse cultures and groups while enrolled in my graduate program.”

As a newly minted social work professional, Kelleher reflects on the role her graduate work played in helping her to understand the importance of social work. “My interactions with Dr. Nancy Nystrom and Dr. David Katz were tremendously helpful in forming my current awareness of ‘big picture’ social and political issues—how oppression, poverty and social policies combine to produce many of our society’s problems.

They challenged my thinking and helped me to understand that social work is not just about counseling an individual with problems; it is about working to change the underlying systemic reasons for these problems.”

Kelleher also notes that two field placements during her graduate career—one as a school social worker and one as a family counselor—taught her a great deal about herself and “the importance of using a positive, strength-based framework with clients and coworkers.” She also benefited from her involvement in the Triangle Coalition, a group of Social Work students working to raise awareness of how lesbian, gay, bisexual and transgendered issues relate to social work. As part of National Coming Out Day, Angie and her fellow Triangle Coalition members conducted role playing exercises in graduate classes that portrayed instructional scenarios involving lesbian, gay, bisexual and transgendered individuals that might come up in their colleagues’ future social work practice.

Since leaving the School of Social Work, Kelleher has worked as the volunteer and advocacy coordinator for MSU Safe Place, a center that offers education, shelter, support and advocacy for the MSU community around issues of domestic violence.

Kelleher also uses her professional degree in her work with Capitol Area Response Effort (CARE), a team of individuals who respond to a domestic assault and arrest in order to offer support, locate services, and serve as an advocate for survivors of the assault.

Kelleher has not yet determined exactly where her social work degree will take her professionally in the future. She would like to use her M.S.W. degree to land a position that involves direct service as well as administrative or policy work. “Whatever I decide to do, my degree is well-suited to get me there,” says Kelleher.

Once a semester, faculty travel to the U.P. to meet with students in person. Setting up a distance learning program with the most current technology available can be expensive and time-consuming, but the School’s program in the U.P. carries on the mission of the land-grant University. For Dr. Paul Freddolino, who oversees the Program, “the primary benefit is access. Without distance learning, there is essentially little if any chance that these students would be able to complete an M.S.W., and thus little chance that their agencies and the clients they serve would benefit from the increased knowledge and skills.”

Anderson feels that the major challenge of distance education lies in maintaining the same standards as traditional classroom experiences. “Our distance education efforts focus on keeping our commitment to quality—we’ve been leaders in this area of education and technology on campus and across the country.”

The School’s Internet courses also support this mission by offering a certification in school social work to students outside of East Lansing who wish to supplement their M.S.W. degree. The School’s newest venture into distance learning is the on-site M.S.W. program that is now offered in Flint, in partnership with MSU Extension. Students and professionals in Flint can now take a series of evening courses that allow them to earn their degree without leaving the city.

These progressive moves toward distance education not only benefit students but also create a positive impact on their communities. By allowing students to earn their degrees while maintaining their community roots and ties to home, they are encouraged to use their education to improve their home community. This interaction with students and professionals around the state also benefits MSU: “Distance learning projects get us better connected to the state which allows us to learn about the communities and how to better support them,” says Anderson. These initiatives are made possible with support by MSU’s University Outreach, Virtual U and the Provost’s office.