

Preparation for Independent Learning, Mastery of Knowledge and Skills for Life Long Learning

Departments

Art History

An Art History major is excellent preparation for life-long, independent learning. Fundamental goals of the program include the development of critical thinking that well serves individuals throughout their lives. The Art History program also fosters mastery of self-expression through extensive writing requirements. Skills in visual analysis developed in the program have a host of applications that can come into play throughout one's life, for instance, understanding mass media, computer graphics, or design. In addition, exposure to art attained by majors inculcates a life-long passion for the visual arts that deepens over individuals' life-times in conjunction with their travel and museum-going experiences. Survey responses from students with Art History majors support these statements.

Architecture

Numerous courses, from the 100 level through graduate level, emphasize lifelong learning due to the highly dynamic character of the profession of architecture. Students are also encouraged to use their knowledge to explore careers in the allied arts, such as graphics, industrial and product design.

Biological Sciences

Judging from experience in our "capstone" senior seminar course, in which contemporary biological questions are discussed, most of our students have gained the knowledge necessary to survive in a rapidly changing technological society. Societal problems related to the human genome, stem cell research and global population growth and climate change all seem to be within the grasp of our seniors.

Chemistry

It is the intention of the Department that students develop skills in analysis, synthesis, and quantitative reasoning that are essential to establish and rigorously test hypotheses. As such all chemistry seniors participate in faculty supervised research projects, summer internships, or other related research activities. These students are then encouraged to present their findings as either a report or at a conference or meeting presentation. There is a long tradition of undergraduate students conducting independent research with Faculty and recently this has become a requirement for all degrees offered by the Department. Students are encouraged to compile their data into a form that is appropriate for scientific scrutiny and present the data (usually in the form of a poster) to either the Department at the awards day poster competition or to the wider scientific community at a regional or national meeting.

Civil Engineering and Mechanics

Graduates will have the necessary knowledge to apply and build upon the fundamentals of engineering. Graduates are well prepared to take the FE examination and to adapt to an ever-changing professional environment with the broad foundation taught in college-level physics, chemistry, mathematics, computer applications, statistics and similar topics.

Students benefit from a curriculum that undergoes continuous review for its content and its effectiveness.

The reviews ensure that graduates will 1) have had access to up-to-date instructional and laboratory equipment; 2) recognize the need for life-long learning; 3) have an understanding of how laws, regulations, economics, design standards, environmental concerns, public opinion, emerging technologies and client expectations affect civil engineering design; and 4) recognize the special needs of the profession within an urban context.

Communication Sciences and Disorders

In order to maintain licensure in the State of Wisconsin, speech-language pathologists must earn 20 hours of continuing education per year. The Department of Public Instruction (DPI) also requires continuing education for school certification. ASHA also requires continuing education for renewal of the Certificate of Clinical Competence. These requirements ensure that practicing speech-language pathologists engage in continuing education activities.

Curriculum and Instruction

With the license renewal process for classroom teachers in the State of Wisconsin, they are required to continue in the professional development process to advance their classroom teaching skills. One of the goals of every teacher preparation program in C & I is to develop reflective teachers who are lifelong learners. Teachers must be excited about teaching and learning.

Dance

The goal for each student is to help them identify their objectives as a dancer, choreographer or teacher, and encourage and assist their successful completion of their established goals. Dance provides the range of activities and models for success to assist in this process of student development. Building a work ethic, a physical training regimen, and self-discipline results in achievement that is evident on a daily basis. Students are taught that they are responsible for their success. Our goal is to help them to understand the responsibility they have to themselves.

Educational Psychology

In order to maintain appropriate state certification or licensure to practice school psychology, graduates must complete six credits of continuing education every five years. Students are apprised of these professional requirements in the first year of their training. Students are encouraged to attend national and local conferences, and to stay abreast of the clinical and research literature. During their training, evaluations specify that students be involved with these activities.

Electrical Engineering and Computer Science

Societal, ethical, and economical considerations are an integral part of design projects that every student has to work on throughout the curriculum. These aspects are reinforced in the capstone design class EE-595. The design problems integrated throughout the EE curriculum are open-ended and require independent learning and mastery of specific areas within a team.

English

The curriculum provides preparation for independent learning and mastery of knowledge and skills for lifelong learning. Our undergraduate and graduate programs emphasize critical reading and writing about a variety of texts and appreciation of literature, film, and media. Preparing students for lifelong learning and development of lifelong skills are at the center of our undergraduate and graduate programs. Assessment of goal accomplishments through surveys or focus groups has been impeded by the lack of personnel and funds.

Exceptional Education

Our professional programs stress the importance of collaborative, community work. Throughout the program, students learn within a cohort of their peers; they are paired with community partners and mentors. This is not only done to provide ongoing support as they master knowledge and skills; it provides a life-long strategy of relying on valuable networks for learning and professional growth.

Film

With a curriculum that emphasizes individual creative voice and personal involvement with all aspects of the production process, UWM Film Department students are consistently challenged to develop as conceptually sophisticated and technically adept artists, with a strong sense of the larger world. Based on information from personal contacts, requests for recommendation letters, and by the number of B.F.A. students from our program applying for study in our M.F.A. program, it is evident that increasing numbers of our B.F.A. recipients are going on to M.F.A. study. Independent filmmaking is one of the premiere disciplines of self-sufficiency. From proposal to public presentation of the final film or video project, students must bridge social relevancy, innovative thinking, technical competency, and social and monetary management. Both our B.F.A. and M.F.A. graduates can conceptualize a project, propose it for funding, script, shoot, light, record sound, edit, mix, print and distribute their own works.

Foreign Languages and Linguistics

The Department's majors, at the core, have the goal of trying to expand a student's mind, thereby equipping the student with skills that enable life-long learning. Among these skills is the ability to speak clearly, think clearly, write clearly, solve problems, and analyze facts critically. These are skills for life that any liberal education should include.

Health Sciences

Once the Clinical Laboratory Science students graduate and pass their national certification exams, they are required by the national certification agencies (American Society of Clinical Pathologists (ASCP) and the National Credentialing Agency (NCA) to document their continued education and proficiency. Every three years CLS professionals must re-certify by providing evidence of 36 hours of continuing education units (CEU's).

History

History develops or enhances skills that our students will need on and off the job throughout their lives. No matter what they end up doing, they will have to collect and analyze information, consider multiple versions and diverse views, and formulate reasonable conclusions.

Human Movement Science

The program prepares the student for independent learning; mastery of knowledge and skills for lifelong learning. The undergraduate Kinesiology program's core curriculum is based upon the most current research and information from the discipline and professional field. The curriculum offers students a solid foundation in the movement sciences, and blended into the curriculum are practical and applied courses to facilitate the student's development of critical thinking skills. The curriculum is reviewed regularly, and standards of practice are incorporated in various courses throughout the curriculum.

In addition, the Athletic Training Education Program (ATEP) is formed around a set of Standards and Guidelines established by the Joint Review Committee for Athletic Training (JRC-AT) in cooperation with the Commission on Accreditation for Allied Health Programs (CAAHEP). These guidelines require each accredited ATEP to demonstrate "learning across time" for all students through repeated evaluation of over 500 cognitive and psychomotor competencies. Each student in the ATEP utilizes a matrix to document all evaluations for each skill that occur throughout the duration of his/her academic program. Further, the 100 percent pass rate on the National Athletic Trainers' Association Board of Certification examination provides support for the ability of the ATEP to prepare its students.

Journalism and Mass Communication

Many journalism and mass communication programs are seen as first and foremost professional schools. JMC explicitly tries to differentiate itself by being a program that prepares students for lifelong learning. As stated in our mission statement: "The department is committed to liberal arts education as well as to professional training in journalism and mass communication. The department's scholarly and professional missions are equally important; the department's faculty believes that the best professional education is one

that is firmly rooted in the liberal arts and in the development of active and responsible citizenship." JMC sub-majors are structured to encourage students to take classes that will broaden their critical thinking ability as well as their professional skills.

Music

The Program provides preparation for independent learning; mastery of knowledge and skills for lifelong learning. UWM students in studio courses and master classes are taught to be independent and reflexive learners through the use of journals and self-assessment. This helps them gain skills in self-diagnosing the performance problems that will occur throughout their careers. Students in music education and music history courses are taught to investigate topics for class projects in order to train them with necessary research techniques for their careers.

Nursing

Examples of items in the graduation and one year post graduation student assessment surveys related to these areas include responsibility for life-long learning and plans for professional career development.

Physics

The purpose of research projects that are undertaken by many of our undergraduates and the oral presentation of a recent research effort that all graduating physics majors must make in their capstone course is to encourage independent learning and the mastery of skills of tracking down information in a library or on the internet.

Political Science

It is our hope that all college graduates continue to be active citizens who vote, and otherwise participate in politics during their lifetime. An involved citizenry is a prerequisite for a well-functioning, representative democracy. Our courses enable students to develop lifelong skills for following politics in the media, understanding local, national, and international events, and engaging in political activity of any kind. Relevant skills include the ability to analyze a political argument, an understanding of basic statistical data, and the ability to express political ideas logically and coherently.

School of Information Studies

Vision Statement for the School of Information Studies states that graduates will be prepared for lifelong learning and inquiry and for ethical engagement and positive participation in the global information society.

Sociology

The mission of the UWM sociology department as it relates to teaching is: 1) to offer strong, nationally recognized programs of teaching and research in the various areas of general sociology—especially sociological theory and research methods, social organization and social change—which are required for the training of undergraduate and graduate majors and 2) to offer programs of research and teaching of national prominence in the sociology of urban institutions and inequalities—in recognition of the department’s own research and teaching mission and its obligation to support the missions of its colleagues throughout the university.

To the degree we achieve the goals embodied in this mission, we believe that we make a substantial contribution to lifetime learning and career success.

Spanish and Portuguese

The department participates in outreach activities to foster life-long learning for professionals, language instructors and other interested persons in the community. We contribute actively to programming in affiliated organizations, including the Center for Latin American and Caribbean Studies, the Center for International Education, the Roberto Hernandez Center, the Cultures and Communities program, and the School of Education.

Theatre

To work in the arts is to become a lifelong learner. The collaborative process of creating theatre requires the participant to reflect, invent, analyze research, develop, and refine skills. This process ensures that each time a script has life it will be different. Each production of Shakespeare is new and different; the social issues illuminated by Greek drama will reflect today’s society. To create new work requires research and immersion in today’s world.

Visual Art

Faculty members and instructors stress that the skills they present in any specific course are important for the professional and humanistic development of the student for after graduation. Problem solving, self criticism, matching of idea with productive processes, designing research strategies for idea development, pragmatic identification and use of available resource, perceptual and cultural tools—all of these components are integral to the tool or materials specific course work Visual Art faculty require from their students. Since such a large percentage of our students must maintain their studio practice independent of a job or discipline

related position after graduation, self-initiated projects and self-sustaining concept skills for maintaining their development and productivity are a top educational priority for Visual Arts programs.

Life Long Learning Centers and Continuing Education

Bostrom Center for Business Competitiveness, Innovation and Entrepreneurship

Through the Bostrom Center's Bradley Distinguished Lecture Series, co-sponsored with the Lynde and Harry Bradley Foundation, professionals in the Southeastern Wisconsin business community are offered the opportunity to learn from nationally and internationally respected scholars and policy experts, who speak in the series on major issues pertaining to the political economy of globalization, entrepreneurship, and global economic competition. Held three or four times each year for the last ten years, the series has been attended by thousands of business executives and professionals. Recent speakers include Anne Krueger, First Deputy Managing Director of the International Monetary Fund; R. Glenn Hubbard, former Chairman of the Council of Economic Advisers under President George W. Bush; and C. Fred Bergsten, Director of the Institute for International Economics.

More recently, the Consortium for Innovative Manufacturing and Operations Management holds an annual day-long workshop on specific operations management topics. These workshops draw over 100 professionals, and feature both industry and academic experts.

Center for Addiction and Behavioral Health Research

CAHBR holds an annual conference to review new developments in addiction and behavioral health research. CABHR provides colloquia on state-of-the-art clinical methods. CABHR faculty serve on various planning groups associated with provider organizations to have input in educational and service programs. For example, CABHR faculty has assisted Wisconsin AODA Certification Board in reviewing and revising their certification requirements.

Center for Advanced Spatial Information Research

Several of the current projects involve working with professionals in local and state government agencies, including the City of Waukesha and the City of Milwaukee. Implementation of these projects has involved training professionals, as well as involving public outreach.

Center for Age and Community

We are in the midst of meeting with an advisory group to guide us in creating our continuing education program in aging.

We offer trainings in the *TimeSlips* storytelling method for people with dementia twice a year, along with CEU credits.

Since the Center's inception in 2001, we have been working with the Milwaukee Aging Consortium to offer the Orientation to Aging and Aging Services class. It is offered three times each year.

Center for By-Products Utilization

The UWM-CBU holds seminars, conferences and brings guest lecturers to UWM for the campus and community to participate in.

The UWM Center for By-Products Utilization has sponsored or co-sponsored many workshops to fulfill its goal of technology transfer. Since 1995, approximately 55 workshops, symposiums, and lectures have been sponsored by the Center on coal ash utilization, used foundry sand utilization, flowable slurry, non-destructive testing, roller compacted concrete, etc. Approximately 1,900 people have attended these workshops. Attendees have been not only from North America but also from overseas. These include representatives of government, education, consultants, contractors, and industry. Examples include:

Center for Canadian-American Policy Studies

This year, CCAPS is embarking on a K-12 Teacher's Summer Workshop. The workshop will provide teachers with information and curriculum development materials related to the study of Canada's economic, political, and social structures. Teachers will receive clock-hour continuing education credits for their participation in the two-day training event.

Center for Consumer Affairs

Arbitrators serving on 42 panels nationally for Ford's DSB warranty arbitration program are subject to independent audit for compliance with certification standards under the Magnuson-Moss Warranty Improvement Act of 1974 and the Federal Trade Commission's Rule 703. Compliance with the exacting standards of Rule 703 is crucial for Ford Motor Company, the sponsor of the DSB program, for various legal and regulatory reasons.

Similarly, panels operating in several states—including Arkansas, California, Georgia, Idaho, Kentucky, Minnesota, Montana, Ohio, and Wisconsin—are also periodically reviewed by regulatory authorities in such states for compliance with the unique arbitration certification program requirements under their respective state laws. Again, compliance is crucial to Ford for regulatory and litigation purposes.

Compliance has been initially achieved and successfully maintained in all these jurisdictions for anywhere from seven to 15 years.

Center for Intelligent Maintenance Systems

We offered a workshop on "Achieving Near Zero Breakdown of Machinery—Predictive Maintenance Tools and Techniques" through the School of Continuing Engineering Education during Fall 2004. This offering is marketed to the greater community of professionals.

Center for International Education

Many of the teacher education activities discussed above in the continuing education section contribute to the continuing education needs of community professionals. In addition, CIE has sponsored or co-sponsored activities intended to increase international expertise in the business community. Recently, the Institute for Global Studies implemented Wisconsin Worldwide (2003), online modules to assist Wisconsin companies entering and developing business in China, Mexico, and the European Union. These modules are accessible via the web www.uw-igs.org and were used as pre-departure training materials for the Governor's Trade Mission to China.

Center for Mathematics and Science Education Research

Nearly all of the grants written by the Center for Mathematics and Science Education Research are based on providing continuing education to Mathematics and/or Science Teachers in the extended Milwaukee area by giving free tuition credit to participants in our programs. Over the past seven years, over 1800 Milwaukee-area teachers have received one or more undergraduate and/or graduate credits by participating in an Education Outreach course funded through grants received and executed by our Center. As part of the agreement made with the grant agencies, an evaluation report is written for each of these projects; thus, over 20 annual reports have been written to assess how our programs have met the needs of our target audience.

Center for Science Education

Course number 422-405 a three credit undergraduate course in Geology was offered in 2002 for K-12 Milwaukee Public School teachers.

Course number 204-499, a three credit undergraduate course entitled: Advanced Placement Biology for Advanced Placement Biology Teachers was offered in 2002 for Milwaukee Public School AP teachers.

A course entitled: Advanced Placement Biology Teachers Adventures in Technology Day was offered for Continuing Education Credit to Milwaukee Public School teachers in 1999.

Forensic DNA for Attorneys was offered in 2000 and 2001 and carried Continuing Legal Education credits.

Multiple teacher in-service workshops were offered between 1999 and 2002. These focused on modeling for teachers on best practices in teaching science. All carried Continuing Education Credit.

Center for Transportation Education and Development

All CTED work in community education is for community professionals.

1. Annually we hold 12 Milwaukee-based workshops targeting transit managers, transit planners and other transportation professionals to upgrade their skills and knowledge.
2. These 12 workshops can be also delivered on-site in a customized format and CTED has delivered them to more than 18 states across the US.

Each program offered is evaluated by the workshop attendees and we have documented a high level of satisfaction with instructors and workshop curriculum.

Center for Urban Community Development

Providing opportunities that meet or contribute to the continuing education needs of community professionals is the primary role and responsibility of the Center for Urban Community Development. In this role we provide continuing professional education in areas including but not limited to:

- 1) Training and mentoring refugees to become certified early childhood and elementary teachers in Milwaukee's urban school settings. This program is uniquely designed and implemented in a joint partnership with UWM, Milwaukee Area Technical College (MATC), Milwaukee Public School, Wisconsin Department of Public Instruction (WDPI) and other local colleges and neighborhood organizations.

- 2) Provide tutoring, mentoring and related services for ethnically and linguistically diverse, low-income adult students to ensure smooth transition into teaching careers.
- 3) Provide highly-focused, innovative, culturally responsive-trainings and consultation services and educational program on program planning, implementation and evaluation with emphasis on serving nonprofit community based agencies at the local and national levels.
- 4) Provide action research classes, fieldwork supervision, independent reading and related educational support services for professionals and community residents (adult learners) to work effectively within the work context: Milwaukee public schools and community agencies (Private Industry Council, Pan African Community Association, Faith-based organizations, Black Achievers, Milwaukee Islamic Center, Milwaukee Achievers, Coalition of African Youth, Coalition of Domestic Violence, Hmong Organization Consortium, Inter-Faith, American Black Holocaust Museum, International Institute, Inter-Faith, Jewish Family Center, Family Resource Centers, 15 Women of Color agencies, nationwide, State-wide South East Asian community organizations, Silver Spring Neighborhood Association and Community Learning Centers after school programs)

Center for Workforce Development

Although the Center does not offer courses directly, it does work with the Business, Engineering, and Technology division of the School of Continuing Education and the Small Business Development Center to identify specific training needs in the area's workforce and to help these other units design and deliver appropriate coursework. This is a new assignment, one that is underway. We have been jointly working on strategic planning for these other units. And the new initiative with the Minority Contractors Association is a direct outgrowth of these combined efforts.

Corporate University Programs

Corporate University Programs provides organizations an efficient and effective method for meeting their immediate training needs. The focus of these programs is on providing employees with the knowledge and skill practice necessary to ensure the efficient and effective use of an organization's human resources. Training programs are offered on or off-site and are provided to organizations in a variety of ways including intensive day long, one to two hour-time sessions, cable video, and the Internet. The programs may be customized to meet specific organizational and employee needs. One of the objectives in offering these training programs is to introduce employees to the possibility of continuing their formal education at the University of Wisconsin-Milwaukee. In essence, these training activities help companies meet their short-term employment goals and provide the College of Letters and Science and the University of Wisconsin-Milwaukee an opportunity to convince these employees to participate in UWM credit courses/programs.

Corporate University Programs also provides organizations with research and consulting services related to meeting the organization's short and long term goals. This activity is related to managing human resources, product development and manufacturing, sales and marketing, and managing customer service.

Deloitte & Touche Center for Multistate Taxation

Each summer from 1997 to 2003, we sponsored an annual Multistate Tax Institute, which is held at the Pfister Hotel in Milwaukee. Over 100 tax professionals attend these conferences, which feature leading state tax experts from across the country.

Each summer from 1996 to 2000, the Center hosted for Deloitte and Touche a weeklong training session entitled the Multi-state Income Tax Masters Program. These sessions provided national exposure for the Center because the participants were drawn from across the country.

Early Childhood Research Center

The Diverse Urban Interdisciplinary Team Project (DUIT) and the Culturally Appropriate Teacher Education (CATE) grants are designed for post baccalaureate students working toward licensure in Early Childhood Special Education and Deaf/Hard of Hearing.

Field Station

Each year for over 20 years the Field Station has offered a series of five to eight Natural History Workshops. These are very focused short courses that offer a continuing education opportunity to professionals, and also offer focused natural history courses to our students. Participants can take the short courses for credit, or without credit to further their continuing education. These courses are very popular among teachers, nature center staff, environmental consultants, graduate students, university faculty, Department of Natural Resources and museum staff, etc. Nearly every course fills to capacity. The short courses are taught by leading regional and national experts in the specialized topics offered. The mix of UWM advanced undergraduate and graduate students, and practicing professionals that these courses attract is very exciting.

Helen Bader Institute

The School of Continuing Education (SCE) and the Helen Bader Institute for Nonprofit Management (HBI) at the University of Wisconsin–Milwaukee began programming for the new noncredit Professional Certificate in Nonprofit Management in 2002. This certificate program is designed for people who are committed to careers in nonprofit management and who, for whatever reason, do not seek a master’s degree or graduate-level certificate. The curriculum for this certificate program consists of 105 hours of classroom instruction focused on seventeen competencies considered to be essential to effective nonprofit management performance. This curriculum will be offered through a coordinated series of non-credit educational workshops by the School of Continuing Education or other educational units of the University of Wisconsin–Milwaukee, by other Milwaukee-area colleges and universities or by non-university based organizations in the Greater Milwaukee area that provide nonprofit management and leadership education and training.

To facilitate this unique certificate design and process, the School of Continuing Education created a new program manager position to assume responsibility for the day-to-day operations and coordination of the certificate program. A Policy and Accreditation Board was created to provide guidance in the areas of curriculum content, community participation, and quality controls for the program. The program now has a mailing list of approximately 2000 people.

During the fiscal year 2002- 2003 the Professional Certificate in Nonprofit Management successful ran 15 of the required 17 workshops in the certificate program. In addition to the 15 required workshops the program also ran two free workshops for the public. The free workshops were not required for certificate candidates. We continue to encourage applications from other organizations to offer workshops as partners in the professional certificate program.

Program Data

Total Enrollment: 241; 217 in-required workshops; 24 in free workshops; 57 total students enrolled in certificate program; 14 certificate candidates (seven students need five or less workshops to complete program)

Over 2000 names on current mailing list

Over 200 program inquiries (by email, telephone etc.)

Seven scholarships awarded (five accepted, two declined)

11 mini certificates awarded
 Five Human Resource Management
 Six Strategic Management

Challenges or Barriers

Diversifying the current student body continues to be an ongoing challenge for the Professional Certificate in Nonprofit Management. Currently the student demographics do not include a large percentage of the non-white population represented throughout the nonprofit sector.

Impact of Program

Over the past fiscal year the Professional Certificate in Nonprofit Management has worked extremely hard to incorporate community collaborations into every aspect of the program. The certificate program has been successful in establishing two working groups to aid in the program's goal of reaching its target audience in the nonprofit sector. These two working groups are identified as the Policy and Accreditation Board and the Scholarship Selection Committee. Both groups are comprised of community nonprofit leaders and educators.

Policy and Accreditation Board:

Mordecai Lee, UWM School of Cont. Ed. (Chair)
 Mary Alfred, UWM School of Education
 Deborah Blanks, SDC
 Scott Gelzer, Nonprofit Management Fund
 Debra Pass, Alverno College

Scholarship Selection Committee:

Mordecai Lee, UWM School of Cont. Ed. (Chair)
 Kimberly Gleffe, River Revitalization Foundation
 Karl Nichols, UWM Helen Bader Institute
 Lenora Rosas, UMOS

In addition to the two groups mentioned above the program has also entered into partnerships with other community organizations, Marquette University's College of Professional Studies and the Nonprofit Center of Milwaukee (with Alverno College), to deliver workshop offerings as a part of the certificate program.

Institute for Urban Health Partnerships

The CNC staff has been involved in coordinating CPR (re)certification training for College of Nursing faculty and staff as well as tuberculosis screening. IUHP/CNC staff has also been invited as conference presenters at various professional nursing/health care conferences/seminars/workshops/forums.

Institute of Visual Arts

Inova provides local artists, both UWM faculty and community and regional artists, with exhibition opportunities. These exhibition opportunities provide a valuable venue for the presentation of new works of art, ongoing discussions and exchange of ideas between artists and students, and critical review in local newspapers and national and international arts publications. All of these activities provide a continuing education for community artists. Some of the community artists presented at inova recently include: Fred Stonehouse, Tom Bamberger, Michelle Grabner, Truman Lowe, Joan Dobkin, Leslei Bellavance, Kyung Ai Cho, Lane Hall, Lisa Moline, Dick Blau, and Jane Gallup.

Institute on Multicultural Relations

The Institute on Multicultural Relations (IMR) develops and implements lecture series, forums, town hall meetings, and conferences to address the educational needs of the community professionals. Some examples of these events include:

- 1) Who benefits from a failing urban school district? —Part I (400 people)
- 2) Who benefits from a failing urban school district? —Part II (300 people)
- 3) To assess or not—Is that the question? (20 people)
- 4) Cornel West lecture (800 people)
- 5) Racial and ethnic disparities in health care: closing the gap (250 people)
- 6) Interpersonal violence (upcoming event)
- 7) Cornel West revisits UWM (upcoming event)
- 8) Racial and ethnic disparities in health care—Part II (upcoming event)
- 9) Race and racism from the non-African American perspective (upcoming event)

NIEHS Marine and Freshwater Biomedical (MFB)

1. **Teacher Enhancement in Environmental Health Science Education**
(NIEHS award, 1996-2001, \$100,000/y direct costs, D. Petering, PI)

(a) Specific Aims: To increase the conceptual base and knowledge of middle school teachers about environmental health. To link scientists and teachers to explore laboratory curricular modules utilizing aquatic organisms. To enhance the capability of teachers to engage students with critical thinking strategies, cooperative learning settings, and cross-disciplinary enrichment. To help teachers encourage an interest in science among female and minority students. To provide science teachers with fully developed curriculum modules for teaching science. To support science teachers in distance learning, including discussion with scientists, teachers, and students at different schools. To offer enrichment materials that may be used throughout the year. To provide thorough evaluation of the effectiveness of the project.

(b) Center Participants and Collaborators: Carmen Aguilar, Assistant Scientist, WATER Institute, UW–Milwaukee; Fred Binkowski, Director, UW–System Aquaculture Institute, UW–Milwaukee; Kris Kosteretz, Manager, MFBS Center Aquatic Animal Facility; John Lech, Emeritus Professor of Pharmacology and Toxicology, Medical College of Wisconsin; David Petering, Professor of Chemistry, UW–Milwaukee; C. Frank Shaw III, Professor of Chemistry, UW–Milwaukee; Randall Ryder, Professor of Curriculum and Instruction, UW–Milwaukee; Daniel Weber, Assistant Scientist, MFBS Center, UW–Milwaukee; Barbara Wimpee, Assistant Scientist, MFBS Center, UW–Milwaukee; Leslie Zettergren, Professor of Biology, Carroll College, Participants in writing the proposal to NIEHS.

(c) Introduction: The National Institute of Environmental Health Science (NIEHS)-funded outreach program (1996-2000) to middle school science teachers, *Teacher Enhancement in Environmental Health Science*, was led jointly by David Petering and Randall Ryder, an expert in educational curriculum and instruction as well as the uses of the Internet in the pre-college classroom. The rationale for the program centered on elevating the capabilities of middle school teachers to teach general and environmental health science through a balanced science/education approach. At its core were three experiment modules that offered teachers and students opportunities to carry out authentic scientific experimentation on subjects that were parts of the science curriculum and that were intrinsically linked to environmental health problems. The modules utilized live organisms in the classroom in order to meet the students at their level of understanding and curiosity as well as to provide them with a “feeling for the organism” at the foundation of their education in the life sciences. Teachers began the year-long program in a summer workshop that prepared them to bring the modules into their courses. Then, during the year they introduced one or more modules with the full support of the Center.

(d) Workshop: Three sets of 15-17 middle school teachers (33 middle schools) from across the state of Wisconsin met in June of 1997-99 at the WATER Institute for an intensive six-day workshop to prepare them to bring coordinated science-environmental health experiment modules into the classroom. During the workshop, they received an eight hour mini-course on environmental health based on the theme of chemical hygiene as a constructive approach to the use and handling of chemicals. The course focused on a limited number of topics: the concepts of environment science and health, chemical hygiene including the need for governmental regulation, the problem of establishing causation, introduction to issues of air and water pollution, first vs. third world environmental health problems and environmental justice issues. The teachers were provided with a large notebook of readings related to the class. The focus of the workshop was 15 hours of intensive laboratory work in the Center. During this time, members of the Center introduced teachers to three laboratory modules for use in the class room; the behavioral effects of lead in fathead minnows; the effects of various chemicals on frog egg and tadpole development; and a visual demonstration of the concept of bioaccumulation of chemicals using microcrustacea. All modules were fully developed with sufficient detail and description as well as equipment support from the Center so that teachers could take them directly into the classroom. Finally, significant time was devoted to discussion and illustration of the teaching pedagogy that can help middle school students understand various aspects of the experiments and grow in their critical thinking skills. Bundled in with this segment was instruction in using the Internet so that teachers, students, and researchers could interact during the year. Each day, a scientist from the MFBS Center or the WATER Institute made a research presentation to the teachers and brought them into their laboratories for special demonstrations. Special lecturers were invited each year to broaden the teacher’s appreciation of toxicology and environmental health. They included Richard Steward, Medical College of Wisconsin, speaking on forensic toxicology, Leon Saryon, West Allis Memorial Laboratory of Industrial Toxicology, on environmental health in the former Soviet Union, and James Burkhart, NIEHS, on the Institute’s investigation of the epidemic of malformed frogs in the upper midwest and northeast. While attending a symposium at UW–Milwaukee, Stanley Miller, UC-San Diego and pioneer on origin of life experimentation, also addressed one of the teacher groups.

(e) Curriculum: Modules Pb and Reproductive Behavior in Fathead Minnows This module focuses on whole organism behavior and the fact that organisms interact with their environment through neurologically programmed behaviors. In this case, animals display definite, male-female reproductive behaviors in a simple defined environment, which can be readily codified and quantified by observant students. These and other neuronal activities can be perturbed by xenobiotics such as lead. Exposure of fish to low levels of Pb disrupt the normal behavior of

minnows and this can be clearly observed by students. A video that expands on how behavioral research is done will be developed. It will illustrate that fathead minnows can learn and that lead exposure also inhibits learning. Ethanol and Early Development in the Frog The external development of the frog embryo offered the opportunity for students to examine the progress of development of *Xenopus laevis* or *Rana pipiens* from a growing clump of cells to an organism with definable structures such as eyes and limbs. Besides the observation of control development, students exposed the developing organisms to ethanol and other simple reagents such as a range of hydrogen ion concentrations, NaCl, and household pesticides. Dose response effects were determined on parameters such as growth, deformities, behavior, and mortality. Because of the on-going environmental issue of frog deformities in northern states including Wisconsin as well as the world-wide decline in amphibian populations, a wealth of internet resource material was available and recommended for use to complement the classroom experimentation. Bioaccumulation of Chemicals by *Daphnia magna* A relatively short, simple experiment was devised to help students appreciate the concept of bioaccumulation of chemicals. *Daphnia* was placed in a vessel containing a red food dye. Over a relatively short period, dye became localized in the organism and resisted depletion upon transfer of the animal into a control medium. The concept of concentration was explored using dilutions of the red dye. Its lipid solubility was also considered in an experiment in which the dye was partitioned between water and 1-octanol.

(f) School Year Activities: Dr. Carmen Aguilar, a biogeochemist and member of the WATER Institute was hired to oversee the daily operation of this program. She brought an excellent background as a scientist and as a teacher-scientist in the national JASON Project program for middle school children, which has an operation site at UW–Milwaukee. She, Dr. Weber, and Dr. Zettergren were available on the Internet or by phone to answer questions of teachers in preparation for or during the use of the modules. Furthermore, Aguilar and Weber were on call to trouble-shoot the experiments on-site, if necessary, and to visit schools with Dr. Ryder to provide scientific enrichment during the modules. The grant provided up to \$200 for each teacher to support the introduction of the modules into the curriculum. The Center created a pre-college page on our website which provided teachers and students with materials to complement their experimental studies in the lab. In particular, the materials created for the Lisbon World's Fair as described below may now be found on this web page.

(g) Evaluation: Fifty-two teachers participated in the three, successive one-year programs. We estimate that over that period about 7,000 students carried out one or more of the modules. The experience of the teachers with the modules was remarkable. The children were enthralled, excited, and respectful. Observing and working with living systems was absorbing for them. The students were very excited about studying live organisms in the class room and were enthusiastic about doing complex experiments that did not have simple preordained outcomes. The children sensed that they were actually doing science. Teachers found that students became serious, participated actively independent of their ordinary class room behavior and performance, and elevated the level of their inquiry as they conducted the experiments. Year end evaluations were carried out that probed all aspects of the program from the workshop to laboratory modules, themselves. In each case, on a one to five (excellent) scale scores averaged above four with an overall average of 4.4.

In addition, a two-day meeting was held at the end of the grant to revisit the modules and other aspects of the program. The input from this conference was vitally important for the construction of the final form of the modules. Some examples of unanticipated outcomes of the programs were the following: The middle school program was extended in both directions to high school and primary school aged children such that an entire school district was using the frog module.

A teacher discovered that the drinking water in his school had Pb in it, based on the inability to differentiate between control and induced-Pb behavioral dysfunction in fathead minnows. A town council voted to limit highway salting based on presentations by students about their findings of the deleterious effects of NaCl on developing frogs. A teacher was named science teacher of the county based on the nomination of a student who cited the modules as a singular experience. Sixth grade students alerted municipalities throughout Wisconsin of the dangers of Pb toxicity in a combined science-English class project.

(h) Program Leader Activities: The leaders of this program, David Petering, Randall Ryder, and Carmen Aguilar attended the national meeting in Boston, MA of the National Science Teachers Association in March, 1999, where they participated in a NIEHS group roundtable about teacher enhancement in environmental health science. Petering and Aguilar made poster and oral presentations at the pre-college session sponsored by the spring, 2000 Society of Toxicology meeting in Philadelphia, PA. Ryder and Petering also participated in the annual meetings of the NIEHS pre-college education grantees. The leaders of the Teacher Enhancement Program have written a chapter for a new book on Behavioral Ecotoxicology on the use of behavioral toxicology experiments in the pre-college classroom to elevate science literacy (Aguilar, C, Petering, DH, Ryder, R and Weber, DN: Chapter 12. Development of Behavioural Ecotoxicology Experiments in Pre-college Science Classrooms. In: (ed) Dell’Omo, G), Behavioural Ecotoxicology, John Wiley & Sons, Ltd., West Sussex, UK, 2002). This is a particularly novel addition to a standard volume that would otherwise focus on new developments in this field. Dr. Weber, the Center’s Aquatic Animal Research Coordinator, also contributed a research article to the book.

2. Science Education Partnership Award—Phase I

(NCCR award, 2000-2004, \$250,000/y direct costs, D. Petering, PI) The Phase I reporting period has extended over three years in order for the SEPA team to be able to complete the product of the suite of experiment modules.

A. Phase I Specific Aims

1. To provide middle school teachers with a suite of fully developed modules related to Life Science that emphasize hands-on learning that links basic concepts to authentic real-world problems in human environmental health.
2. To surround the modules with support materials that utilize multimedia and information technology.
3. To provide a professional community for teachers through workshops, meetings, and Internet connections.
4. To complement the academic subject matter with educational pedagogy that stimulates critical thinking and interdisciplinary perspective in students.
5. To support teachers in distance learning, including interactions with the professional team, other teachers, and inter-classroom communication.
6. To encourage female and minority interest and success in science.
7. To provide broad, thorough evaluation of the effectiveness of these aims.

B. Educational Approach

We entered into the SEPA-Phase I project having completed a grant with the National Institute of Environmental Health Sciences entitled, “Teacher Enhancement in Environmental Health Science.” During that period, a number of limiting conditions in the life of middle school life science teachers became evident. In particular, it is the exceptional middle school teacher who has strong academic credentials in science. In addition, teachers are burdened with enormous responsibilities and time commitments in order to accomplish the day to day operation of the classroom and to meet the needs of students. In aggregate, these facts inhibit the introduction of new material into the curriculum.

In Phase I, we pursued the idea that challenging experiment modules can be included in the middle school Life Science curriculum if they are fully developed and supported.

1. **Experiment modules:** The development of experiment modules became our focus because truly effective, hands-on experimentation provides the most straightforward opportunity to engage students in inquiry-based study that enhances interest in and curiosity about science and, more generally, develops the aptitude for critical thinking. We chose to center each module around live organisms that can readily be brought into the middle school laboratory. In the initial Life Science course, students need to gain an understanding of living systems before they move into the molecular-based biological science that is even permeating the high school curriculum; otherwise, they miss the life in the midst of the chemicals. Importantly, working with macroscopic systems such as living organisms is age-appropriate for middle school students. Our modules address major elements of the science content found in the Life Science curriculum and couple them with related important environmental health issues that confront students and society. Thus, the materials that have been developed are meant to be used as parts of the life science curriculum not as incidental enrichment of the curriculum.

The modules have the following common threads: (a) they are laboratory experiments that utilize live organisms in the classroom, mostly aquatic organisms. (b) They are authentic experiments that offer students and teachers the opportunity to contribute to their design in each individual classroom and, thereby, foster inquiry-based learning. (c) All of the experiments couple basic life science content with contemporary biomedical/societal issues in the area of environmental health. (d) Each one is strongly grounded in the National Science Standards and has been designed to merge the science with effective educational pedagogy that naturally incorporates various approaches to learning-cognitive, observational, kinesthetic, etc. (e) In detail, each module provides the science background, complete experimental details for teacher and students, a suite of educational tools that are based on the experiments, custom video aids, and links to other information about the subject matter of the modules. The modules have been created by teams of scientists, educators, media specialists and teachers as described elsewhere.

2. **Enhancement of Science Education for Minorities and Girls**

The creation of the modules in Phase I and the proposed dissemination plan in Phase II focus on minority students and those of lower socioeconomic status. A number of the environmental health connections (alcohol, lead, mercury, asthma, carbon monoxide, etc.) are directly relevant to the experience of minority children growing up in the inner city. Similarly, girls’ curiosity and interests in living organisms will be satisfied by

the modules. Moreover, active participation in experimentation provides girls with the early opportunity to encounter the enjoyment of the scientific process. The fact that the module's activities emphasize individual initiative and small group interactions will further enhance girls' development as young scientists. It is the experience of pursuing one's curiosity as disciplined inquiry that ultimately attracts students to science.

C. Experiment Modules:

Partnership and Method of Preparation: A multidimensional partnership has devised and developed the experiment modules. Key personnel were drawn largely from the UW–Milwaukee and the Milwaukee Public Schools. The involvement of MPS teachers was a deliberate decision to insure that the modules would be attractive to minority students.

Principal Investigator and leader of the science component: David Petering, University of Wisconsin Distinguished Professor of Chemistry, College of Letters and Science. Petering previously directed a four year grant for teacher enhancement in environmental health science for middle school teachers, funded through the National Institute of Environmental Health Science (NIEHS). He is Director of the NIEHS Marine and Freshwater Biomedical Sciences (MFBS) Center and the UW–Milwaukee Institute of Environmental Health.

Associate Director and leader of the educational component: Randall Ryder, Professor of Curriculum and Instruction, School of Education, served with Petering in the earlier pre-college grant from NIEHS and has been the co-PI on the Phase I grant.

Coordinator: Ellyn Bromberg was previously a research specialist and outreach educator in the area of water quality for the University of Illinois Extension Program. She has coordinated the various activities of teachers, scientists, and educators during the creation of the modules.

Milwaukee Public School Teacher Liaison: Moreen Carvan, Assistant Professor of Curriculum and Instruction, School of Education, and K-8 science education specialist served as the liaison with MPS teachers and contributed to the instructional framework of the modules. Prior to this time, she was an science education specialist in the State of Ohio Department of Education.

Media technology production: Robert Danielson, Associate Professor of Film, School of the Arts brought his experience in science documentary film making to the production of the video components of the modules.

Teachers: Milwaukee Public School District middle school science teachers, enrolled in a UW–Milwaukee leadership training program, and regional middle school teachers worked with scientists and educators to develop the modules as described elsewhere. Two master teachers, Jon Knopp, a high school teacher from the Milwaukee Public School District, and Louise Petering, a middle school science teacher from the Whitefish Bay district, acted as content editors and writers of the modules.

Scientists: A number of scientists who are members of the NIEHS Marine and Freshwater Biomedical Sciences Center provided the framework for the research-based experiment modules.

Overview of Module Production Scientists associated with the UW–Milwaukee Marine and Freshwater Biomedical Sciences Center and the UWM Institute of Environmental Health were asked to contribute the basic framework of experiments that focused on parts of the middle school life science curriculum. Their experiments were based on research experiences with various aquatic organisms and were to be coupled to societal issues of human environmental health. Weekly discussions between scientists and UWM School of Education faculty from the Department of Curriculum and Instruction brought the initial versions of the experiments into being and helped to locate their intellectual content at the middle school level. At this stage, teachers were invited to participate in the development of the modules into useful curricular documents. Basically, we sought detailed input about the content and intellectual level of the experiments, their feasibility in the classroom, and whether teachers would be able to incorporate them into the Life Science curriculum.

Finally, of course, we needed the teachers to try them out with students. Our initial approach in 2001 was to have scientists and teachers work closely together in small groups. Because of the difficulty in efficiently coordinating the operation of these groups, intensive summer workshops were held in 2002 and 2003 to get teacher input on the remaining modules. In each year, implementation of modules during the succeeding school year served as a basis for evaluating their status. Detailed evaluations were made of the work that students produced as they conducted the experiments and carried out related instructional activities. The information from teachers and the evaluation of the student work fed back into an iterative process to improve and develop the modules into a completed form. The key to this process was the work of two master science teachers who were employed to assemble the modules into fully described, middle school-friendly documents, taking into account the evolving scientific and

(3) **Short Term Training for Minority College Students in Toxicology**

(NIEHS award, 1995-2000, 2001-2006, \$25,000/y direct costs, John Lech, PI)

a) Specific Aims: To offer minority students summer research opportunities in environmental health research. To provide students with a course focused on topics in environmental health with emphasis on problems faced by minorities. To give students instruction in the principles of scientific integrity.

(b) Center Participants and Collaborators: Michael Carvan, Assistant Scientist, WATER Institute, UW–Milwaukee Janice Eells, Associate Professor of Pharmacology and Toxicology, Medical College of Wisconsin Reinhold Hutz, Professor of Biological Sciences, UW–Milwaukee John Lech, Emeritus Professor of Pharmacology and Toxicology, Medical College of Wisconsin P.C. Lee, Professor of Pediatrics, Medical College of Wisconsin David Petering, Professor of Chemistry, UW–Milwaukee C. Frank Shaw III, Professor of Chemistry, UW–Milwaukee

(c) Introduction: NIEHS has funded John Lech (PI) and the Center to support summer research experiences for minority college students in two consecutive five year grants, the last awarded in 2001. Center members served as mentors for students recruited from across the country through the Minority Affairs Office of the Medical College of Wisconsin. Each summer members of the Center as well as some of their colleagues hosted students in their laboratories for 10 weeks of intensive research experience. A notable outcome of this continuing program is that ANR Pipeline Co. provided the Medical College of Wisconsin with a \$75,000 endowment to help to support a summer student.

(d) Summer Activities: Each trainee works on a research project under the guidance of a funded UW–Milwaukee or Medical College of Wisconsin faculty preceptor. Trainees devote full effort to the research throughout the training period (a minimum of 35 hours per week). In addition to the research experience, trainees attend a bi-weekly Friday afternoon discussion group and a weekly Friday research seminar sponsored by the Medical College Graduate School of Biomedical Sciences. Prior to beginning the research experience, the trainees are required to attend a one-day session on the aspects of research safety. Trainees receive instructions and resource materials on “Writing and Abstract” for research. All trainees present their research in a structured format to a diversity of basic science and clinical faculty at the Medical College for discussion and clarification on research goals. An informal reception is held at the beginning of the ten-weeks to provide an opportunity for trainees to network with each other, and to ask questions about careers in research. Trainees also attend the summer course, “Ethics and Integrity in Science,” to gain a deeper appreciation of the ethical principals involved in scientific research. During weeks two through eight of the ten-week program, the trainees spend one-half day every other week at the Medical College of Wisconsin, Department of Pharmacology and Toxicology. Required activities include attendance at 1) a course entitled: “Topics in Environmental Health Sciences”, and 2) a case-based discussion of current environmental problems. (2 hours). Trainees are supplied with a copy of Casarett & Doulls Toxicology 5th Edition and are assigned specific chapters for reference of materials to be used for the class discussion. Reading and discussion topics include: Principles of Toxicology Mechanisms of Toxicity Absorption, Distribution, and Excretion of Toxicants Biotransformation of Xenobiotics Toxic Responses of the Nervous System Toxic Effects of Pesticides Toxic Effects of Metals Developmental Toxicology Toxic Responses of the Reproductive System Toxic Responses of the Endocrine System. Members of the MFBS Center and others serve as leaders for the discussion of each of these topics. The immediate impact of this program on career decisions of the trainees is evaluated by means of a post-training questionnaire completed by each trainee. In addition, long-term impact can be obtained since on-going contact is maintained with the students in order to monitor academic progress. The short-term outcomes are assessed by exit interviews conducted by the Principal Investigator and the completion of a student evaluation form developed in the Office of Multicultural Student Affairs. During the interview, the trainees’ career interests and long-term career goals are explored in detail. Recommendations are made as to which science courses the student should take and how to improve their undergraduate academic records. Tracking of students’ academic progress and career choices has been carried out using a questionnaire that is mailed to all students in November of each year.

Small Business Development Center

The Small Business Development Center meets the continuing education needs of those thinking about starting a business, those currently in business and seeking to enhance their business knowledge, as well as those who are interested in refresher courses to enhance their business knowledge. With the poor economy leading to down-sizing and outsourcing, the SBDC continues to experience increased interest in the services we provide. The level of interest is clearly reflected in the 20 percent yearly growth of the Entrepreneurial Certificate Program over the past three years.

Tutoring and Academic Resource Center

We have hired many returning adult students as tutors in our center. These individuals bring a maturity which helps our center run smoothly, and gain expertise in their fields.

For example, our educational psychology program assistant helped many students of color adjust to college. She gained counseling skills for her future field.

We currently have a non-traditional library student who is cataloging our resources for student use. She is gaining experience for her field of information science.

We have also used volunteer tutors from the community. For example, a former minister has tutored students, and a retired professor at Medical College of Wisconsin helped tutor students for their MCAT test.

UWS/UWM Great Lakes WATER Institute

The types of programs that the WATER Institute serves are many and varied. In addition to traditional small university graduate/undergraduate classes that visit the Institute primarily for use of our research vessel, the R/V Neeskay, examples of programs that we have held and sponsored in the past include the following. Although this is not an exhaustive list, it does give an indication of the kinds and variety of programmatic efforts in which the Institute is engaged.

University credit courses for Teachers and Pre-Service Teachers

- Operation Pathfinder: Oceanography and Coastal Processes
- Environmental Education for Teachers
- Environmental Resources Workshop: Urban Environmental Issues
- Environmental Resources Workshop: Focus on Lake Michigan

Water Safety Courses

- Boating Skills and Seamanship US Coast Guard Auxiliary (13 lessons)
- Sailing and Seamanship USCG Auxiliary (14 lessons)

Coast Guard Auxiliary Training for members

- Specialty course Weather
- Specialty course—Search and Rescue
- Topical seminars and workshops for planning and update

Workshops/conferences/seminars/outreach activities and programs

- Middle and High School Teacher workshops
- CGLS Anchor Watch Seminar Series
- NIEHS UWM/MCW Minority Student program
- NIEHS Minority High School student program
- NSF Research Experience for Undergraduates (REU) Summer Program
- Charter Captains Business Planning workshop
- Sport Anglers Updates on Issues
- Midwest Microbiology Group
- Training for Sea Grant Zebra Mussel Watch volunteers
- Coastal Erosion Training for Planners and Contractors
- Wisconsin Marine Historical Society
- The Jason Project Workshops and Passport Site
- UWM Chancellors Club
- UWM Alumni groups
- Wisconsin Association of Research Managers
- Recent Advances in Limnology and Oceanography Seminar Series
- Global Environmental Change Workshops
- Using Data Sets to Teach About the Great Lakes
- Project WET
- WI DNR Boating Basics course
- National Atmospheric and Oceanic Administration Ocean Exploration regional workshop

USDA North Central Regional Aquaculture Center workshop
 Lake Michigan Fisheries Management workshops
 WATER Institute public open house in cooperation with the UWM Alumni Association
 Great Lakes WATER Institute Green Roof Workshops
 Water Quality Issues in the Nearshore of Lake Michigan. Community open forum,
 Clean Water Forum
 Milwaukee County Emergency Planning Citizens Right to Know subcommittee
 Annual Lake Sturgeon Bowl regional competition for the National Ocean Science Bowl
 Lake Michigan Yellow Perch Taskforce

Preparation for Responsible Citizenship and Social Responsibility

Architecture

Since architecture is a profoundly social art, social responsibility is implicit in the teaching of virtually all courses. Social and environmental ethics are introduced in the 101 course (An Introduction to Architectural Theory) and are also important criteria in the capstone Thesis of the graduate program.

Art History

Study of the history of art addresses issues of war, racism, stereotyping, and social injustice, and conversely confronts expressions of sacrifice, altruism, spirituality, and other high principles. Students are forced to consider ethical issues in most courses. In courses dealing with antiquities, taught by Professors Counts, Wang, Maranci, and Stone, faculty expose students to the topical issue of looting and destruction of cultural patrimony and the more heinous side of collecting. Courses in Non-Western art, such as the Non-western survey, as well as courses in American art, detail past injustices done to people of color, including those who live in small-scale societies. A Freshman Seminar recently taught by Professor Stone, The Myth of Primitive Art, was a course on ethics that dealt directly with racism and the inappropriate stereotyping of tribal people. In classes in Modern Art and Photography, Professor Bendiner shows how images help construct and attack political ideologies. Professor Wang's course Arts Along the Silk Road deals with cross-racial problems and questions of identity in antiquity. Art History courses are quite effective in developing an individual's social conscience, particularly given the emotional content of the material studied.

Chemistry

The scientific method is based in objective truth. The ethic behind measurement and reporting of scientific data is one of the most closely guarded of any discipline. Individuals who are shown to have falsified data are publicly ostracized and become essentially unemployable. This reporting ethic is a very sound basis for individual conduct and the projection of higher ideals. Generally speaking science should not base or limit its directives from societal concern. The reason for this is that it is rarely apparent what the outcome/benefit of specific research will be prior to its completion. The only goal of a scientist should be to conduct their research honestly and report it accurately

Civil Engineering and Mechanics

Graduates will have an understanding of professional and ethical responsibility.

Communication Sciences and Disorders

Citizenship/social responsibility: Almost all of our majors, both graduate and undergraduate, belong to the National Student Speech-Language-Hearing Association. This is both a social and a service organization, and gives its members numerous opportunities for volunteer and service work. Students have toy drives at Christmas, fundraisers for organizations such as the March of Dimes and the Alzheimer's Association and other good causes, and participate in the AIDS walk and other activities. These activities help students become used to engaging in the kinds of volunteer efforts that are so important to society.

Curriculum and Instruction

We not only prepare our graduates for this responsibility, we also prepare them to develop these areas with their students. A considerable amount of time is spent with our students to develop teaching methods that allow them to work with their students in these areas.

Dance

Examples of how training in the art of dance prepares students:

1. Students learn a personal work ethic is required for high achievement.
2. Group interaction is a constant in the discipline; students learn the value of their contribution to the mission/objective of a group of individuals.
3. Artistic philosophy is about craft and identifying with human feelings and understanding the complexities of life. There is a humanistic depth that comes with training to be an artist or teacher.
4. Dance's training environment is multicultural and global in its scope.
5. The student organization is encouraged to participate in the agendas of the department and the school.
6. Dance offers many opportunities for community connections

Education Policy and Community Studies

Several required undergraduate courses—ED POL 113, The Milwaukee Community, ED POL 114, Community Problems, and ED POL 500, Sociology and Policy of Urban Schools and Communities, provide students with knowledge of local political, anthropological, and sociological forces that prepare them to become responsible citizens. Students graduate with a heightened sense of social responsibility.

Educational Psychology

The majority of our School Psychology graduates practice psychology in local school districts. Students are prepared to assume a variety of roles as school psychologists including the following: child and family advocacy, fair and unbiased assessment practices, collaboration and training of teachers and parents, and therapeutic interventions to improve the academic and social adjustment of youth. All these activities focus on improving the outcomes for children, families, and schools. The program focuses on preparing psychologists who will promote the mental health of children and families through interdisciplinary collaboration.

English

Preparation for responsible citizenship/social responsibility—again, our curriculum, particularly at the introductory levels, emphasizes critical reading and the ability to participate in public debates through persuasive writing. We also present these abilities as crucial to responsible citizenship. Additionally, a number of our courses in linguistics, professional writing, and rhetoric and composition courses have a service learning/public service component.

Film

Five of the eight faculty and two adjunct instructors in the department have established reputations in the field of social issue-based media production. The issues of aging, youth and violence, healthcare, housing, race relations, education, working conditions, and the environment are among those that have been addressed in media projects produced by department staff. In our classrooms, as students propose their projects, we encourage them to understand “service to the community” as a creative responsibility, not as an option.

In particular, documentary production demands that one has strong ties with one’s community. The film and video works made further identities, define challenges, recognize inspiring ideas, and aid solution-making. The Film Department has strengthened its commitment to documentary production by hiring adjunct instructor, Brad Lichtenstein, to teach documentary on a regular basis. Brad’s films have been shown on national PBS, including Frontline, and he is a recent recipient of a DuPont Award for his 2001 film, “Ghosts of Attica.” Brad’s current production, “Almost Heaven,” is about adult daycare in Milwaukee and is sponsored by a major grant from the Helen Bader Foundation. Four students worked with guidance from faculty member Dick Blau to produce “A Good Day Begins,” four short portraits about adult day care in Wisconsin, in collaboration with the UWM Center for Age and Community and with sponsorship from the Helen Bader Foundation. Another student/faculty collaboration was “Alzheimer Pain Protocols,” that was produced in collaboration with Nursing faculty member Christine Kovach, as part of an NIH project. Graduate student Jason Morgan recently traveled to Chiapas, Mexico, to begin a documentary about Alterra Coffee Roasters’ program to enhance cultural and economic connections between the coffee farmers and coffee consumers.

French, Italian and Comparative Literature

As indicated in our mission statements, the programs prepare students for responsible citizenship/social responsibility in part through the values we endeavor to embody and practice, and also through the analysis of issues related to this broad concern, as represented in the arts, literature, film, history, and everyday life. With respect to service to the community and society, a high percentage of our students volunteer to staff special events, such as the UWM Open House, activities at Festa Italiana and Bastille Days, and the Italian Community Center Youth night. Moreover, more advanced students generously give their time in tutoring activities designed to assist students entering the major. Some faculty members incorporate a service learning component in their courses.

Human Movement Science

Students are encouraged to take responsibility for their careers and social development. However, the Department faculty members recognize the role they play in developing “good” citizens and incorporate within the classroom the students’ personal responsibility for learning. The undergraduate curriculum also requires all students to complete an ethics course, a sociological aspect of health and human movement course focusing on social inequalities and promoting cultural diversity, and a course entitled Professional

Preparation Seminar which present issues related to professionalism, citizenship, social and career responsibility.

Students enrolled in the ATEP are expected to follow the “Code of Ethics” that is in place for the 29,000 members of the National Athletic Trainers’ Association. Each August at the annual workshop for athletic training students, the “Code of Ethics” is reviewed in detail. Students are expected to make decisions and choices in such a way that the University, Department and the ATEP are looked upon favorably.

Industrial and Manufacturing Engineering

Students learn about ethical, social, environmental, and economical issues by courses offered by the College (CEA200) and numerous courses in the department including the Senior Design course (IND ENG 485).

Journalism and Mass Communication

Our student organizations/classes have been involved in many activities. Our upper level class in the advertising/public relations sub-major, JMC 524 (Advertising and Public Relations Campaigns) often takes on projects for non-profit organizations, designing promotional campaigns for them. Other examples include our recently formed Broadcast Club will provide television coverage of student government election debates, while our Society of Professional Journalists is sponsoring a discussion on political campaign coverage during the Wisconsin presidential election.

Music

Preparation for responsible citizenship/social responsibility. UWM faculty and students are active leaders in organizations such as the American Choral Directors Association and the Collegiate Music Educators National Convention. In these organizations, students learn that arts advocacy is continuous. Student service activities include: music career’s day for high school students, music contest solo/ensemble coaching in public schools, instrument demonstrations for elementary general music classrooms, accompanying for school music organizations and chamber music and large ensemble “run out” concerts.

Nursing

Examples of items in the graduation and one year post graduation student assessment surveys related to these areas include:

Advocacy for health care that is sensitive to the needs of patients with particular emphasis on the needs of vulnerable populations.

Physics

Knowledge learnt in the UWM physics undergraduate program allows for informed decisions to be made about important societal issues, such as the desirability of a nuclear energy program, the evidence for global warming and its likely impact on the country and the world, the future capabilities of microelectronics and nanotechnology, the impact of novel imaging techniques in medicine etc.

Political Science

The mastery of knowledge and skills are obviously relevant for responsible citizenship and social responsibility. In addition, our department offers a number of courses in political philosophy (normative theory) that focus on issues such as the proper role of government, moral guidelines governing the use of political power, issues of equality and inequality in society, and other “perennial questions.”

School of Information Studies (SOIS)

Vision Statement for the School of Information Studies states that graduates will be prepared for lifelong learning and inquiry and for ethical engagement and positive participation in the global information society.

Theatre

The Theatre Department's stated goals are to work within a collegial, creative, and professional community environment and to support the development of caring, original, active theatre artists within this context. We think of theatre as a collaborative process, one that engages participants in learning, reevaluation of ideas and concepts, and the creation of new and innovative solutions/work. We feel that success in these endeavors is measured by the quality of production as well as the methodologies we employ.

Our intent is to produce a wide variety of drama and theatre projects, which allow our students to explore a range of social issues. The department makes a concerted effort to produce material that matters. For example, this year we produced G.B Shaw's *Arms and the Man*, which gave audiences an opportunity to reflect on issues of war, family identity, and personal beliefs. The department is currently producing *Getting Out*, which tackles the effects of prejudice and social-bias.

The delineation of separate theatre tracks for B.A. majors is also an indication of our dedication to social responsibility. Much of our energy is focused on the Theatre in Society and Theatre Education Programs (which exist within the B.A. framework) both of which are based in Applied Theatre pedagogy, working for social justice and parity on our campus, in the wider community, and in schools.

1. Applied Theatre: Students participate in service-learning in conjunction with the Center on Applied Theatre, working to bring conflict resolution and social awareness to schools.
2. Human Experience Theatre: Students explore issues of diversity, ethics, social behavior, and social responsibility. Hired by outside organizations, HET presents dramatic sketches on issues such as diversity, discrimination, social awareness, and harassment. This course models behaviors, provokes discussion and evaluation of standards, and helps to break through many boundaries set up by society. This application for theatre is on the cutting edge of theatre training.

K-12 Theatre in Education Program: TEP is based within an advocacy model and is dedicated to bringing quality arts programming to the schools as a core subject vital to all human endeavors. It assumes that the arts are essential in building socially responsible and democratic citizens. It places these values at the core of its curricula by requiring that students participate in service-learning work, tie their activities and research to diversity and social justice advocacy, learn to be leaders and promoters of arts instruction in schools, and work collaboratively within urban institutions to bring about positive change in the lives of children.

Theatre-In-Society

The newly developed Empathy in Performance course examines the relationship between theatrical performance and empathy. The course explores productions that aim specifically to enhance empathy with marginalized peoples, such as Moises Kaufman's *Laramie Project* and Ping Chong's *Children of War*. Coursework also includes looking at the cultural performance of display in cultural history museum exhibits and whether they encourage empathy and, based on Deborah Warner's *Angel Project* (2003), how an audience might be invited to empathize with an entire community.

K-12 Theatre Education Program

Pedagogically, TEP views arts-based instruction as a primary way of teaching and learning, one that assumes an integrated ecological system based on the principals of tolerance and celebration of diversity. This includes the following concepts:

1. Providing educational and cultural programs in theatre that serve a diverse student population.
2. Grounding educative activities in the real world experiences of students in the Greater Milwaukee urban community, including formal and informal educational environments.
3. Focusing on the disciplinary content of theatre as a cultural, education, and humanitarian art form so that students are constructors of their own knowledge and immersed in the creative, collaborative process inherent in theatrical study and exploration.
4. Connecting to current research and best practice, which stresses commitment to urban social contexts, initiatives such as the Milwaukee Idea, developing expertise across the helping professions, and grounded in a standards-based frameworks and outcomes.

Urban Planning

Ethics in planning practice is a required component of the curriculum of an accredited planning program. Ethics in planning includes responsibilities for civic engagement and social responsibility.

Visual Art

Visual Art studio practice has inherent in it self-evaluative and self-training, strategies that must be pursued in order to succeed. These strategies involve important social responsibility factors. Learning basic, safe handling of tools, equipment, and materials and safe disposal allows artists to be knowledgeable about and responsible to the environment. In the conceptual and philosophical sides of art making, careful investigation into social realities and the relationships between individuals and groups are at the core of an artist's research. While the insights may develop privately and be expressed personally, they engage the public with strong intentions to challenge accepted cultural norms or present private insights that challenge society. Learning to be skillful, insightful, dexterous and professional in Visual Art involves the artist as a citizen and social being.