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School of Education and Social Policy Partnerships with Schools

Northwestern University's School of Education and Social Policy is involved in many partnerships with schools that have significant impact on students and teachers. Following is a summary of current projects.

PROJECTS INVOLVING CHICAGO PUBLIC SCHOOLS:

Boys to Men

Participating Schools: Young Men's Educational Network and various public and private schools in the North Lawndale area of Chicago

Description and Goals: Young Men's Educational Network received a grant from United Way to provide financial support for mentoring programs in the North Lawndale community of Chicago. The programs mentor African American boys aged 10 to 16. Assistant professor Jelani Mandara assists in evaluating the effectiveness of the program. He collaborates in conducting surveys and interviews with the boys and their mentors.

Number of Students Involved: Approximately 300

Contact: Dr. Jelani Mandara, j-mandara@northwestern.edu

Casting a Wide Net: Embedded Computational Thinking

Partner Schools (5):

Evanston Township High School
Niles North High School
Niles West High School
Maine East High School
Muchin College Prep (CPS)

Project Description:

Computational thinking is a powerful new way of solving problems, designing systems and understanding human behavior and is a vital skillset that pervades modern STEM

(science, technology, engineering and math) courses and fields. Most fields in the natural and social sciences rely on computational tools for research and discovery.

The Office of STEM Education Partnerships (OSEP) at Northwestern University is developing a library of new computational thinking activities that will be embedded in regular high school STEM courses, exposing the broadest cross-section of students to this important skillset. Toward the end of the three-year project, OSEP will also introduce a yearlong computational thinking elective course for students who wish to further pursue their interest in this area. This project builds on OSEP's National Science Foundation GK-12 program, *Reach for the Stars*. See <http://osep.northwestern.edu/projects/ct-stem>

Teachers and Students Involved: 34 teachers and more than 1,000 students

Contact: Dr. Kemi Jona, kjona@northwestern.edu

Center for Talent Development Summer Program Outreach

Partner Schools (5):

Galapagos Elementary Charter School (CPS)
Chicago Jesuit Academy
Legacy Charter Elementary School (CPS)
Kipp Ascend Charter School (CPS)
Oak Terrace School

Description and Goals:

The Summer Program at [Center for Talent Development](#) serves gifted students in PreK through grade 12 in residential and commuter programs. The goal of the Center for Talent Development is to engage, inspire and challenge gifted students through learning. The Center works with schools to bring high-ability students with financial need to the program. Over the past five years, approximately 25 students annually have received financial assistance for Center for Talent Development program tuition.

Contact: Dr. Paula Olszewski-Kubilius, p-olszewski-kubilius@northwestern.edu

Charter Schools

Partner Schools (3):

Betty Shabazz International Charter School, Chicago – three campuses:
Betty Shabazz Elementary Academy
Barbara A. Sizemore Academy
DuSable Leadership Academy

Description and Goals:

With three campuses located on Chicago's South Side, the Betty Shabazz International Charter School is dedicated to the academic, cultural, social and physical development of children through an African-centered curricular focus. The campuses balance instruction using African-centered themes, arts and humanities, technology, and linkages to local community resources as well as South Africa, Brazil and Ghana.

Students Involved:

Betty Shabazz Elementary Academy – 313 students, grades K-8
Barbara A. Sizemore Academy – 300 students, grades K-8
DuSable Leadership Academy – 400 students, grades 9-11

Contact: Dr. Carol D. Lee, cdlee@northwestern.edu

Chicago Transformation Teacher Institutes

Partner Schools:

Professional development with Chicago Public Schools will begin in 2011.

Description and Goals:

Northwestern University is part of the Chicago-area collaborative creating the Chicago Transformation Teacher Institutes (CTTI) program. In collaboration with the Illinois Institute of Technology, the Chicago Public Schools (CPS), and other university and curriculum development partners, this project focuses on increasing the content and pedagogical knowledge and skills of teachers who occupy leadership positions in mathematics and science in CPS. Teacher courses are closely integrated with the curriculum and professional development efforts of the High School Transformation program.

Teacher courses provide expertise regarding content and curriculum as well as integration within the larger context of environmental science studies and geoscience curriculum projects at Northwestern, and with the help of IIT faculty, in the life sciences program there. Northwestern is developing two of the four courses in the life and environmental sequence: (1) Environmental Issues: Focus on Water and (2) Energy, Transportation and the Environment. The first course was taught in summer 2011.

Teachers: 13 teachers

Contact: Dr. Steven McGee, s-mcgee@northwestern.edu

Cultural Epistemologies and Science Related Practices: Living and Learning in Relationships and

Culturally Based Citizen Science: Rebuilding Relationships to Place

Partner Schools (7):

Disney Magnet School, Chicago (CPS)
Hillcrest Primary School, Shawano, Wisconsin
Olga Brener Intermediate School, Shawano, Wisconsin
Shawano Community Middle School, Shawano, Wisconsin
Keshena Public School, Keshena, Wisconsin
Menominee Tribal School, Keshena, Wisconsin
Menominee Head Start, Keshena, Wisconsin, and Neopit, Wisconsin

These research projects are conducted through a collaboration among Northwestern University, the Menominee Indian tribe of Wisconsin and the American Indian Center of Chicago.

Description and Goals:

The goals of these research projects are to gain knowledge about cultural differences in understandings of the natural world and to develop community-based science programs in preschools and in the adult community. Community-based programs are developed through design teams, composed of preschool teachers and community members.

Task data are collected through parent-child interviews, group discussions and individual child interviews. One-on-one child interviews are collected during school, with teachers allowing their students to be away from the classroom for short periods.

Results of these research programs will provide information about how culture affects approaches to learning about the natural world and science, and will shed light on culture-specific science education. Because research is conducted in urban and rural communities as well as on the Menominee Indian Reservation in Wisconsin, results also will contribute to the general knowledge of how culture and experience shape beliefs about nature.

The research projects offer partner schools volunteer hours equivalent to the number of hours of research conducted. Researchers tutor students, help with art projects, read stories or assist in other ways in classrooms.

Teachers and Students Involved: 85 teachers, 590 students

Contact: Dr. Douglas Medin, medin@northwestern.edu

Developing Classroom Management and Authoritative Leadership

Participating School: North Lawndale College Prep Charter School

Description and Goals:

This project involves working with the teachers and administrators on effective classroom management and leadership. Dr. Jelani Mandara gives lectures and conducts regular workshops with the faculty. The goal of the project is to foster effective classroom management and leadership, based on research evidence.

Number of Teachers Involved: All faculty and administrators at the school. Approximately 40 teachers and six administrators attend the workshops regularly.

Contact: Dr. Jelani Mandara, j-mandara@northwestern.edu

Developing Responsible Men

Participating School: North Lawndale College Prep Charter School

Description and Goals:

Along with members of the school's faculty and other professional men from the community, Dr. Jelani Mandara works with a group of boys enrolled in an elective business course. He primarily teaches them about life skills important to success and college readiness skills such as time management. The goal of the project is to encourage academic success, reduce negative behaviors and promote responsibility and mental health.

Number of Students Involved: Approximately 20

Contact: Dr. Jelani Mandara, j-mandara@northwestern.edu

Digital Literacy and Transnationalism Among Immigrant Adolescents in the U.S.

Partner School: Curie Metropolitan High School, Chicago

Description and Goals:

The study explores how adolescents of immigrant backgrounds use the Internet to organize transnational social relationships, access/utilize/produce information and media content across countries, and develop cross-cultural orientation in their language and literacy learning.

Teachers and Students Involved: 311 student participants in survey; 32 students interviewed; 7 students participating in case studies

Contact Person: Dr. Eva Lam, evalam@northwestern.edu

Early Elementary Science Partnership

Partner Schools (7):

John Charles Haines Elementary School
Pilsen Elementary Community Academy
South Loop Elementary
John A. Walsh Elementary School
Marconi Elementary Community Academy
Victor Herbert Elementary School
Martin A. Ryerson Elementary School

Description and Goals:

Teachers from Chicago elementary schools complete a two-year sequence of course work as preparation for a Teacher Leader Endorsement in Elementary Science. The initiative is related to Illinois's new endorsement in teacher leadership, which allows teachers to qualify themselves for leadership positions within a school organization such as department chair or curriculum director. Northwestern is now offering leadership support to all of the seven partner schools.

The program supports the Chicago Public Schools' hands-on curriculum in science. Professional development not only increases content understanding but also shows the connections between the science content and exhibits at four Chicago science museums. SESP is a partner in this project with the Field Museum, Peggy Notebaert Nature Museum, Chicago Children's Museum, Lincoln Park Zoo and the Chicago Public Schools.

Teachers and Students: 91 teachers, approximately 2,000 students

Contact Person: Dr. Steven McGee, s-mcgee@northwestern.edu

EcoCasting

Partner schools: (16 additions in the 2010-11 school year)

Maine South High School
Wheeling High School
West Leyden High School
Wheaton Warrenville South
St. Charles East High School
Walter Payton College Prep (CPS)
Rockford Public Schools
Antioch Community High School

Lakes Community High School
Waukegan High School
Chicago Vocational Achievement Academy (CPS)
Young Women's Leadership Charter High School (CPS)
George B. Swift Elementary (CPS)
Evergreen Park Community High School
Elk Grove High School
The Potomac School (McLean, Virginia)

Description:

The EcoCasting Project provides a set of hands-on inquiry activities focused on ecosystems, food webs, bioaccumulation and invasive species designed for use in environmental science and biology classes in grades 9-12. The Office of STEM Education Partnerships (OSEP) at Northwestern University has created these materials to help students learn about the scientific observations, measurement techniques and computer models used in an ongoing National Ocean and Atmospheric Administration (NOAA) Ecological Forecasting project. This curriculum is based on research conducted in Calumet Harbor, Illinois, where a NOAA team is developing more precise food web models to better predict PCB toxin levels in Great Lakes fish. The curriculum is aligned to Illinois state standards, the College Readiness Standards and the National Science Education Standards.

EcoCasting is comprised of four major investigations for students, which may be done as stand-alone lessons or as parts of a larger unit. More information about the EcoCasting project is available at <http://ecocasting.northwestern.edu>.

Contact: Maggie Waldron, m-waldron@northwestern.edu

Freezing Time: Using Digital Video to Help Teachers Reason about Classroom Events

Partner Schools (8):

Carman-Buckner Elementary School, Waukegan
Evanston High School, Evanston
Highland Park High School, Highland Park
Lakeview High School, Chicago
Lincoln Park High School, Chicago
Payton High School, Chicago
Perspectives Charter School, Chicago
Northside College Preparatory High School, Chicago

Description and Goals:

This project examines the ways in which mathematics and science teachers attend to the complexity of classroom interactions. Researchers support teachers in learning to attend to consequential events that take place in the classroom through the use of video

reflection.

This research project is motivated by the belief that, in order to promote meaningful learning in the classroom, science and mathematics teachers need to substantively attend to their students' thinking. The project is thus concerned with examining what teachers pay attention to in the classroom and how they interpret what they notice. In particular, the investigators are implementing new digital video technologies and designing new research methodologies to gain better access to teachers' tacit thinking about what moments during instruction are pedagogically relevant. "Through our work with pre-service and in-service K-12 teachers, we hope to learn how to better help teachers tune their attention to their students' thinking," says SESP associate professor Miriam Sherin.

Teachers and Students Involved: Approximately 25 teachers and 750 students are involved in the project.

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How to Do Better on Job Interviews

Partner Schools (2):

Schurz High School
Steinmetz High School

Description and Goals:

The goal of this project is for urban high school students to learn skills for succeeding in job interviews. The innovative curriculum for teaching job interview skills grew out of an evaluation that Dr. Barton Hirsch conducted of Chicago's large-scale After School Matters apprenticeship program of for high school students. With the help of human resources professionals, the researchers designed a mock job interview to assess marketable job skills.

Before the teens were given interview training, human resources experts found that although many teens had experiences and skills that employers value, in interviews the youth often failed to convey those experiences or communicate their credentials. In several Chicago public school classrooms, the mock interview training nearly tripled the would-be hiring rate.

Teachers and Students Involved: Approximately 60 students and two teachers are involved in the project.

Contact: Dr. Barton Hirsch, bhirsch@northwestern.edu

The iLab Network

Partner Schools (20):

Wheeling High School
Fenton High School
Illinois Virtual High School
Monona Grove High School
Hinsdale High School
Evanston Township High School
Virtual High School
Christian Heritage Academy
Wheaton Warrenville South HS
Emma Willard School
Auburn High School
Walter Payton Preparatory High School (CPS)
Hopkinsville Community College
Young Women's Leadership Charter School (CPS)
Dwight D. Eisenhower High School
Plainfield North High School
Wells Community Academy (CPS)
Jones College Preparatory High School (CPS)
Batavia High School
Florida Virtual School

Description and Goals:

Teachers and students nationwide are discovering a new way to do science. Faculty at the Office of STEM Education Partnerships have created experimental facilities via remote online laboratories (called “iLabs”) that enable students and educators to use real instruments, rather than simulations, to carry out experiments from anywhere at any time. Unlike conventional facilities, iLabs can be shared and accessed by audiences across the world that might not otherwise have the resources to purchase and operate costly, high-end or delicate lab equipment. More than 1,000 students are using iLabs to analyze real experimental data through curricula that follow authentic scientific investigation processes. Nine labs and four new curricula for radioactivity are now available to all schools at <http://ilabcentral.org>.

Teachers and Students Involved: There are 23 teachers involved in using iLabs. More helped to design iLabs as part of a teacher design team, and there are iLabs Teacher Fellows as well. More than 1,000 students are involved.

Contact: Dr. Kemi Jona, kjona@northwestern.edu

Making Discoveries on BEAGLE

Partner School: Wildwood World Magnet School

This project implements some of the BEAGLE (Biological Experiments in Adaptation, Genetics, Learning and Evolution) models in the eighth-grade science class at Wildwood. BEAGLE is a multi-agent based modeling environment that has been carefully designed to help students learn about evolutionary processes in an engaging and accessible way. BEAGLE provides students the opportunity to explore a collection of NetLogo-based models, collect data, make and test predictions, and engage in group discussions about evolution and evolutionary mechanisms.

Teachers and students involved: 25 eighth-grade students and 1 teacher

Contact: Dr. Uri Wilensky, uri@northwestern.edu

Meaningful Science Consortium

Partner Schools (8):

Amundsen High School
Bowen High School
Farragut Career Academy
Gage Park High School
Hancock High School
Kenwood Academy
Richards Career Academy
Westinghouse High School

Description and Goals:

The Meaningful Science Consortium (MSC), which was established to provide an instructional development system to Chicago Public Schools, is supporting the Chicago Public Schools' High School Transformation in secondary science. MSC seeks to prepare Chicago high school students for college-level academic work and provide the science understanding they will need to make important personal and civic decisions.

MSC's science curriculum emphasizes meaningful science, sequence and structure, case-based inquiry, integrated technology, and support for literacy. Its three-year curriculum, encompassing content and process goals in all the science disciplines in the Illinois Learning Standards in a sequence that builds understanding systematically within and across years, begins with an interdisciplinary year of environmental and earth science, is followed by a year of fundamental chemistry and physics, and concludes with a capstone year of contemporary biology. Students who successfully complete high-quality MSC projects are invited to present their results at the annual MSC Project Showcase in conjunction with the Northwestern University Undergraduate Research Symposium.

Teachers and Students Involved:

32 teachers, approximately 3,000 students

Contact: Dr. Steven McGee, s-mcgee@northwestern.edu

NASA Summer Research Program

Partner School:

Hancock High School

Description and Goals:

School of Education and Social Policy educators developed a five-week summer research experience for Chicago Public Schools students. Students develop a research question related to global climate change, identify and acquire NASA data to address the question, analyze and interpret their data, and develop a poster to present the results of their research. Sixteen investigation starter worksheets support students in developing research questions. Each investigation starter states a claim about climate change, provides links to background information, and offers links to data sets that can be used to investigate the claim. Students select an investigation of interest, refine the claim and specify how the datasets could test the claim. In a pilot program, educators from the School Education and Social Policy as well as scientists and graduate students in the Earth and Planetary Science department supported students during the implementation of their research. After presenting posters of their research at the end of the summer experience, students refined their research during the school year and presented at the city science fair competition.

Teachers and Students Involved:

2 teachers, 6 students

Contact: Dr. Steven McGee, s-mcgee@northwestern.edu

NetLogo Investigations in Electromagnetism

Partner School: Wildwood Elementary School, Chicago

Over the last two years, this project has been conducting classroom implementations of NetLogo Investigations in Electromagnetism (NIELS), a computer model-based curricular unit, in fifth- and seventh-grade classes at Wildwood Elementary School. Multi-agent computational models depict phenomena such as electric current and resistance as they arise out of simple interactions among thousands of *individual level agents* such as electrons and ions within the wire. Researchers find that such representations enable students as young as fifth grade to learn and reason about the relevant concepts in electricity that are typically taught in advanced undergraduate or graduate school physics courses.

Students interact with NIELS models through a set of carefully designed, innovative, open-ended activities and develop a deep understanding of the relevant phenomena. NIELS has been implemented in fifth- through seventh-grade classrooms at Wildwood and is also being implemented in two eighth-grade classes in Singapore schools.

Teachers and Students Involved: Fifth- and seventh-grade students and teachers

Contact: Dr. Uri Wilensky, uri@northwestern.edu

The New Civic Journalism Project

Partner Schools (2):

John C. Haines Elementary School
Lakeview High School

Description and Goals:

The goal of the project is to teach immigrant students to use cultural resources and journalism to help communities solve public problems.

The most serious problems facing society — involving health, education, jobs and inequality — are public problems that collide with the political system and cannot be solved without an active, well-informed citizenry. The political process is particularly inaccessible to marginalized groups such as immigrants and the poor. The new civic journalism project teaches students to use journalism to engage those communities in solving public problems.

The project consists of three programs: (a) a youth journalism class taught at multi-ethnic, underserved schools like Chicago's Lakeview High School, (b) the Immigrant Connect class at Northwestern's Medill School of Journalism and (c) the Digital Design for Social Change class at Northwestern's School of Education and Social Policy.

In the youth journalism class, Lakeview students produce video profiles that describe immigrants' experience with social problems, such as health care. Northwestern undergraduates mentor Lakeview students, helping them develop journalism skills and encompass relevant policy issues in their presentations. At the end of each reporting cycle, the community profiles, in-depth print reports and interactive policy presentations appear together on the Immigrant Connect website and through local media outlets.

In this project, students engage in the political process by working as novice community journalists, so they are actually doing civics, not just learning about civics.

Teachers and Students Involved: Two teachers and 16 students

Contacts: Dr. Eva Lam, evalam@northwestern.edu, Dr. Matthew Easterday, easterday@northwestern.edu

NU-TEACH Alternative Certification Program

Partner Schools (46):

(Potentially all CPS schools and Chicago parochial schools could be partner schools. Those listed below employ NU-TEACH interns for 2011-12.)

Chicago Public Schools:

Austin High School	Austin Business Prep
Hope College Prep	Simpson Girls Academy High School
Harlan High School	Infinity Math & Science High School
Prosser High School	Fenger High School
Steinmetz High School	Simpson Academy
Walter Payton Prep	Westinghouse College Prep
Juarez High School	Marine Military Academy
Steinmetz High School	Chicago Tech Academy High School
South Shore Leadership High School	South Shore International High School
Lincoln Park High School	Michele Clark Prep
Marshall High School	Chicago Vocational High School
Whitney Young High School	West Ridge Elementary
	Hancock High School

Chicago Parochial and Charter Schools

St. Thomas the Apostle	LEARN 5th Campus
Ray Elementary	St. John de LaSalle
St. Procopious	Bronzeville Lighthouse
Rowe Elementary	El Cuarto Ano Association
Catalyst-Howland	St. Benedict the African
St. Bruno Catholic School	Disney Magnet Elementary
St. Malachy	Budlong Elementary
St. Michael	Plato Center
Donoghue Elementary	Circle Rock Charter
Shoemith Elementary	Howland Elementary
Academy for Global Citizenship	

Description and Goals:

NU-TEACH, Northwestern University's Alternative Teacher Certification Program, is a 13-month, three-phase accelerated course of study that prepares career changers and recent baccalaureates to teach in Chicago public and parochial schools. The program is currently being implemented in partnership with the Inner-City Teaching Corps and Chicago Teaching Fellows. The intention is to encourage individuals with non-education degrees who have a desire to teach and possess strong content knowledge, as well as the ability to impart that knowledge, to become teachers.

Teachers and Students Involved: 52 teachers at 25 Chicago Public Schools and 21 parochial and charter schools; approximately 2,000 students

Contact: Dr. Sylvia Smith-Demuth, s-smith1@northwestern.edu

Principal Policy and Practice Study

Partner Schools:

With support from the Spencer Foundation and the Consortium for Chicago School Research, the Principal Policy and Practice (P³) Study focuses on school principals who are new to their posts. In order to maintain confidentiality, school names cannot be provided, but study participants are all new hires in the Chicago Public School system. In addition to surveys and interviews with principals, the research team has also interviewed CPS officials, recently retired principals, Local School Council (LSC) members, and LSC support providers.

Description and Goals:

The primary goal of the Principal Policy and Practice Study is to examine the preparation, recruitment, retention and career paths of school principals through an in-depth look within Chicago Public Schools. Supported by funding from the Spencer Foundation, this work is undertaken in collaboration with the Consortium for Chicago School Research. This study considers principal recruitment and retention from the perspective of both supply and demand.

On the supply side, the researchers are concerned with the preparation and career paths taken en route to principalships, as well as the preferences and constraints facing prospective principals, the characteristics of those who become principals, and the factors that impact retention. Given the professional and personal aspects of these supply-side concerns, the researchers also explore how new principals become socialized into the role of principal over their first few years on the job and how they respond to struggles they face in their new positions. On the demand side, the research project focuses on hiring policies and practices, decisions made by school district and Local School Council (LSC) hiring officials, and factors that impact whether principals are hired and later retained. The aim is to generate knowledge that will inform school leadership policies and processes in Chicago Public Schools and other districts across the country.

Teachers and Students: Approximately 60 principals

Contact: Dr. James Spillane, jspillane@northwestern.edu

Strengthening Student Engagement in the Chicago Public Schools

Partner Schools (24):

The following 24 Chicago Public Schools (CPS) elementary/middle schools are participating in the project as treatment schools:

Bouchet	Lafayette	Pasteur
Cameron	Lawndale	Ruggles
Casals	Lewis	Sawyer
Davis Magnet	Marquette	Sexton
Emmet	May	Shields
Goodlow Magnet	Nightingale	Stagg
Hale	O’Keeffe	Stowe
Holden	Parker	Woodson

Description and Goals:

A research team led by principal investigator Jonathan Guryan, along with Philip Cook, Jens Ludwig, qualitative researchers Amy Claessens and Mimi Engel, and educational psychologist Sandy Christenson, is studying the effects on school engagement from efforts to strengthen the social capital and supports to nearly 500 elementary and middle school students within the Chicago Public Schools (CPS).

In partnership with the Chicago Public Schools, the goal is to test the effects on school attendance and subsequent learning outcomes of Check & Connect, a manualized mentoring and case management intervention, by implementing the program like a randomized clinical trial, in which some eligible students but not others are provided with the intervention. This structure allows for a “gold standard” evaluation of the impacts of the program on school engagement, academic achievement, and other key non-academic outcome measures such as contact with the juvenile courts and behavior while in school. Most of the current policy and research attention on dropout has focused on the dropout decision itself, even though dropout is more likely to be simply the end point of a longer-term developmental process. This project seeks to learn more about the relative effectiveness of preventing dropout by intervening early vs. later.

Numbers of Students and Teachers Involved

The study will include more than 3,000 treatment and control students within the 24 treatment schools (close to 500 students will receive the intervention) and more than 6,000 control students at control schools.

Contact: Dr. Jonathan Guryan, j-guryan@northwestern.edu

Study of the High School to College Transition

Participating Schools (58):

All 58 high schools in Chicago Public Schools

Description and Goals:

This project analyzes programs to improve college attendance. This investigation includes evaluating the impact of a new college counseling model on college enrollment.

Numbers of Students and Teachers Involved: All high school seniors in Chicago Public Schools – 44,627 students

Contact: Dr. James Rosenbaum, jim11111@gmail.com

Urban Suburban Northwestern Consortium

Partner Schools (10):

Chicago Public Schools:

- Burnham/Anthony Inclusive Academy (CPS)
- Hendricks Academy
- Hope College Preparatory School
- Kenwood Academy
- Whitney Young High School

Non-Chicago Public Schools:

- Evanston Township High School
- Greeley School (Winnetka)
- Hubbard Woods School
- New Trier High School
- Francis W. Parker School
- Skokie-Washburne Middle School

Description and Goals:

The Urban Suburban Northwestern Consortium was formed in 1997 when several schools joined with the School of Education and Social Policy at Northwestern University to create a cross-institutional community of educators committed to facilitating collaborative relationships across urban and suburban boundaries. Schools that participated in the Consortium include Burnham/Anthony Inclusive Academy, Evanston Township High School, Francis W. Parker School, Hendricks Academy, Hope College Preparatory School, Hubbard Woods School, Kenwood Academy, New Trier High School, Whitney Young High School and Carleton Washburne School. These schools represent public and private, urban and suburban sites at elementary, middle and secondary levels. They are diverse in the demographics of their student bodies and in their access to resources.

The goals of this partnership were to foster equity across and within diverse school populations and settings; encourage collaboration across and within Consortium sites; and develop models for cultivating skills, practices and understandings in educational leaders. To meet these goals, the Consortium sponsored professional development for teachers and administrators through dinner meetings, workshops and two-day retreats. In an effort to encourage collaboration and research across and within Consortium sites, teachers received grant money to design cross-site projects and activities for students.

From 2000–04, the Consortium was funded by the Joyce Foundation. While the Consortium is no longer active as an organization, the Northwestern Master of Science in Education Program continues to work with many of the member schools and adheres to the philosophy of the urban/suburban experience that undergirded the Consortium’s formation.

Contact: Mary Gajewski, m-gajewski1@northwestern.edu

NON-CHICAGO PUBLIC SCHOOLS PROJECTS:

Center for Talent Development

Description and Goals: The [Center for Talent Development](#) (CTD) at the School of Education and Social Policy is a learning center and research facility that has been serving gifted students, their families and educators for 30 years. The Center identifies, educates and supports gifted students and serves as a leader in gifted education. CTD has been accredited as a nonpublic supplementary school by the [North Central Association Commission on Accreditation and School Improvement](#) (NCA CASI) since April 1, 1994. NCA CASI is recognized by the U.S. Department of Education and has more than 100 years of experience in improving educational quality.

Programs of the Center include the Saturday Enrichment Program for students in preK through grade 9, an Accelerated Weekend Experience providing two-day courses for students in grades 5 through 9, a Summer Program offering enrichment and for-credit courses for students in preK through high school, Northwestern University’s Midwest Academic Talent Search offering assessment through above-grade-level testing for grades 3 through 9, Gifted LearningLinks for online enrichment and honors courses for students in kindergarten through high school, and Civic Education Project offering programs that promote civic engagement and responsibility for students in grades 7 through 12.

In addition to these programs, the Center offers seminars and conferences educating parents about the needs of gifted learners, as well as resources, professional development opportunities and graduate courses for educators. CTD also offers a variety of outreach and scholarship programs that serve underrepresented students, including Project EXCITE and the Jack Kent Cooke Young Scholars Program.

Through outreach and advocacy efforts, CTD informs parents, teachers and school personnel about the characteristics and needs of gifted learners and empowers them with the knowledge and confidence necessary for meeting those needs successfully.

In serving more than 500,000 families throughout the last three decades, Center for Talent Development has evolved from a single focus on talent identification to a multi-faceted operation with four central foci: talent identification, talent development, research

and advocacy.

Students Involved: 25,000 students take part in Northwestern University's Midwest Academic Talent Search annually. 10,173 students from preK through high school enroll in CTD courses and offerings annually (3,500 in Saturday Enrichment Program, 250 in Accelerated Weekend Experience, 4,225 in the Summer Program, 1,700 in Gifted LearningLinks, 550 in the Civic Education Project).

More than 100 families attend the CTD summer conference each year, and 70-75 educators register for the professional development seminar.

Contact: Dr. Paula Olszewski-Kubilius, p-olszewski-kubilius@northwestern.edu

Creating Leaders for STEM Student Research

Partner Schools (4):

Stevenson High School
Illinois Math and Science Academy
Niles North High School
College of Lake County

Program Description:

Creating Leaders for STEM Student Research is comprised of two professional development programs. The first program focuses on developing the capacity of STEM (science, technology, engineering, mathematics) teachers to design and implement independent student research programs in their schools. This program includes the Student Research Facilitation Course. Through this course teachers gain the following:

- Learn about models and tools for implementing student research in their school or district
- Advance their local planning efforts to facilitate student research opportunities
- Share best practices for in-school, after-school and summer program models from experienced area teachers and STEM leaders

Teachers and Student Involved: 21 teachers have completed this course and are reaching approximately 1,680 students.

The second professional development program seeks to develop teacher strengths in incorporating principles of sustainability into their existing STEM curricula. OSEP is working with teachers at Adlai E. Stevenson High School, College of Lake County and expert coaches in curriculum development.

Sustainability was chosen for the focus of the second professional development course due to its primary importance in many of today's research fields, national focus on schools as the center of sustainable practices and students' excitement for sustainability

topics. Demonstrating to students how developing technologies are possible solutions for these multiple problems empowers students to be part of the solution through their own research projects. To bring this about, informed teaching professionals need to convey how the existing technologies work and offer ideas for new investigations and experiments.

Teachers and Students Involved: This professional development program will support 20-30 teachers in the greater Chicago region and will indirectly serve more than 1,600 students.

Contact: Dr. Amy Pratt, amy.pratt@northwestern.edu

Educare Post-Secondary Education Project

Partner Schools:

Educare early education centers in Chicago, Denver and Miami, operated through the Ounce of Prevention Fund

Description and Goals:

The researchers are identifying and analyzing the supports and barriers to postsecondary educational attainment among young, low-income parents.

In addition, the project is designing a pilot program that uses high-quality early childhood education centers as a context for promoting and supporting parents' continuing education. The goal is to design an innovative program that can build upon mothers' commitment to their children's successful educational advances so that mothers themselves are also able to advance their own education.

The Educare project is part of the Gates Foundation's new initiative to double the number of low-income students in the United States who earn post-secondary degrees by age 26.

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Examining Discourse Interactions in Clinical Interviews about Students' Intuitive Science Knowledge

Participating School: Highland Park High School

Description and Goals: The purpose of this research is to examine how students understand and make sense of science concepts when talking to other people. The project involves two parts. First, the researchers are interested in documenting the patterns in conversation between students and researchers in interview settings. The research examines how students talk about their knowledge in these interviews in comparison with more familiar interactions such as tutoring and peer-work sessions. Second, the project

seeks to understand the relationship between the talk in these interviews – both by the student and the researcher – and the conceptual science knowledge students display. Interviews are commonly used in the field of education to assess student knowledge; however, we know little about them as two-way conversations or the impact of those conversations on student knowledge.

Numbers of Students and Teachers Involved: 18 students, recruited from the classes of seven teachers

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IQWST Earth Science

Partner Schools (19):

18 schools in Illinois, Michigan, Texas and Florida

Description and Goals:

IQWST: Investigating and Questioning our World through Science and Technology investigates how to design middle school science curriculum materials that support students in learning ambitious science content and scientific practices through meaningful investigations. The project is building a three-year curriculum of project-based investigations in chemistry, physics, earth science and biology. Eighteen schools in several states have implemented an IQWST curriculum, and national field trials are being held to assess the impact on student achievement. Teachers involved receive professional development before beginning to teach the unit.

Teachers and Students Involved: 74 teachers, 7,411 students

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NebraskaMATH

Partner Schools:

Together with colleagues at the University of Lincoln, Nebraska, the NebraskaMATH study will partner with schools in four districts in Nebraska: Omaha, Lincoln, Grand Island and Papillion. The project will administer a survey to 2,500 teachers across these districts and at different grade levels. Data collection is currently in the early stages.

Description and Goals:

Based upon the successful model of Math in the Middle, the NebraskaMATH project will extend the successful methods of teaching enrichment and address problem areas identified beyond the middle school experience. NebraskaMATH focuses on three different transition points in mathematics education: the mathematics education of children from kindergarten to grade 3, algebra at the transition from middle to high

school and the transition of new secondary mathematics teachers from certification to the classroom.

The Northwestern subcontract focuses on the Primarily Math Intervention, the goal of which is to cultivate teachers' ability to understand how children learn and use mathematics – with attention to students requiring special considerations, increase mathematics content knowledge in teachers and eventually certify teacher participants as math specialists. We will administer the NebraskaMath Survey (NMS) to 2,500 teachers across four districts in Nebraska. This survey will be used at three times and will provide information on the efficacy of the intervention, as well as illuminate the changes specific to mathematics teaching and school leadership.

Teachers involved: 2,500 teachers

Contact: Dr. James Spillane, j-spillane@northwestern.edu

NetLogo Investigations in Middle-School Science and Mathematics

Partner School: Parkview School - Morton Grove, Illinois

Description and Goals:

Over the past four years, the middle school science and mathematics teachers in this school of 900 students have piloted the use of NetLogo in a variety of contexts. Mathematics teachers have used it to teach students how to apply mathematical representations in algebra and geometry to a structured programming environment. In this context, students have created their own models for a three-week computer science project. Interest in this project carries over year after year, as many graduating students continue to use NetLogo and develop science-related models for high school classes.

Science teachers have used NetLogo in their classes to enhance various curriculum pilot projects including piloting the Center for Connected Learning's model-based curricula, Connected Chemistry and BEAGLE evolution. Students and teachers developed and used models for selective breeding and natural selection as part of a problem-based seventh-grade science unit on genetics. They used models for molecules and chemical reactions in the sixth- to eighth-grade chemistry units. And they have used ecosystem and cellular models in sixth- and seventh-grade units. The models have provided a dynamic and vibrant learning environment for students to help support inquiry-oriented teaching and learning of vital learning goals in the science curriculum.

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Northwestern Oncofertility High School Biology Curriculum Project

Partner Schools (4): (curriculum development)

Lakes Community High School

Highland Park High School

New Trier High School

Glenbrook North High School

Pilot Schools (4):

Lakes Community High School

Illinois Math and Science Academy

Westinghouse College Prep (CPS)

Lindblom Math and Science Academy (CPS)

Project Description:

Northwestern University is partnering with Chicago-area high schools to develop a new high school biology curriculum that embeds contemporary biomedical research content and skills relevant to the emerging field of oncofertility. Oncofertility research is focused on novel approaches to preserve the fertility of cancer patients (see www.oncofertility.northwestern.edu for details).

The ultimate goal of the Northwestern University Oncofertility High School Biology Curriculum Project is to produce high school biology curriculum modules that are designed by teachers, incorporating cutting-edge biotechnology skills and experiences through a partnership with biomedical researchers that will motivate and challenge high school juniors. This curriculum not only exposes students to advanced biology skills and concepts but also teaches real science through advanced labs and experiments, all in the real-world context of oncofertility.

The purposes of this program are twofold. The first purpose is to design an engaging and up-to-date high school core biology curriculum in the context of oncofertility. This curriculum will utilize modern biotechnology laboratory techniques in order for students to learn biology content through active, hands-on investigation and experimentation. The second purpose is to create a model for strategically forging relationships between schools and research institutions to create curriculum that is based on real-world biotechnology techniques and careers.

Teachers and Students Involved: For pilot program, 12 teachers and 800 students.

Contact: Dr. Kemi Jona, kjona@northwestern.edu

Parenting and Adolescent Behavior

Participating School: Evanston Township High School

Description and Goals:

Dr. Jelani Mandara and his research staff and are conducting a survey with approximately 300 students and one parent for each student. The goal of the survey is to assess the relationship between various parenting strategies and adolescent academic achievement and high-risk behavior.

Number of Students: Approximately 300

Contact: Dr. Jelani Mandara, j-mandara@northwestern.edu

Perceptions of Higher Education and the Pursuit of Current Academic Goals

Participating Schools:

District 65: Evanston Middle Schools, primarily Haven, Nichols and Chute

Description and Goals:

This set of field experiments distributes different types of information to middle school students about financial pathways to college and the future benefits of college to assess the effects on school goals and motivation.

Numbers of Students and Teachers Involved: Approximately 200 students and 10 teachers

Contact Person: Dr. Mesmin Destin, m-destin@northwestern.edu

Project EXCITE

Partner Schools (9):

Evanston Township High School
Chute Middle School
King Lab School
Haven Middle School
Kingsley School
Nichols Middle School
Lincoln School
Rhodes Magnet School
Lincolnwood School

Description and Goals:

Project Excite is a collaborative research endeavor involving the Center for Talent Development, Evanston Township High School District 202 and Evanston/Skokie School

District 65. The goal of the project is to increase the number of underrepresented minority students taking upper-level mathematics and science courses when they are in high school. Project Excite identifies gifted minority students from Evanston third-grade classrooms and provides enrichment mathematics and science education and support to prepare the students for advanced classes in middle school and at Evanston Township High School. More information is available at <http://www.ctd.northwestern.edu/excite>.

Teachers and Students Involved: Approximately 150 third- to eighth-grade students, 11 teachers and 10 to 15 Evanston High School students acting as after-school volunteers.

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Reducing the Achievement Gap

Participating Schools: Oak Park Elementary District K–8 Schools

Description and Goals: Assistant professor Jelani Mandara conducts parenting workshops with small groups of parents of African American children. He teaches parenting strategies that the empirical literature shows relate to academic achievement.

Students Involved: Parents of approximately 150 students have been to at least one workshop.

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Watershed Dynamics

Partner Schools: (10 additions in 2010-2011 school year)

Lemont High School

St. Charles East High School

Plainfield North High School

Minooka Community High School South Campus

Hoffman Estates High School

Lakes Community High School

Antioch Community High School

Maine East High School

Waynesboro Area Senior High School (Waynesboro, Pennsylvania)

Westville High School (Westville, Illinois)

Program Description: The Watershed Dynamics project is a partnership among the Office of STEM Education Partnerships ([OSEP](#)) at Northwestern University, the Global Learning and Observations to Benefit the Environment ([GLOBE](#)) program and the Consortium of Universities for the Advancement of Hydrologic Science, Inc. ([CUAHSI](#)). Each organization represents a group of people interested in hydrology and science

education. Working together, curriculum developers at OSEP, the worldwide network of science educators in GLOBE, and scientists and engineers from CUAHSI have created tools and curricula to support student investigations of the watershed.

This curriculum is designed to teach students about water availability and the impacts of human activity on the watersheds we live in. Watershed Dynamics promotes the use of authentic scientific data and technology in the high school classroom. Students and teachers learn to use geographic information system (GIS) tools and various data sets to answer questions about the environment.

Students Involved: This project has been used in more than 80 classrooms across the country by more than 1,600 students. More information on the Watershed Dynamics project is available at <http://wd.northwestern.edu>.

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YouSTEM

Partner Institutions (4):

Wheeling High School
Evanston Township High School
Glenbrook South High School
Chicago Public Library

Program Description:

The Office of STEM Education Partnerships (OSEP) at Northwestern University is creating a new type of interest-driven STEM (science, technology, engineering and math) exploration space that will engage greater Chicago-area teens in STEM fields through hands-on exploratory challenges.

Many universities, museums, research centers and similar organizations around the country have been working to connect teens to the excitement of cutting-edge STEM resources and programs. However, most of these programs are targeted at teens who have already developed a strong interest. The YouSTEM project is an effort to better engage in STEM fields teens who may not yet have developed interests, and it seeks to do so in more youth-accessible locations — like libraries and schools.

YouSTEM spaces will be at the Evanston Public Library in the teen loft, Evanston Township High School, Wheeling High School, Glenbrook South High School, Chicago Public Schools and branches of the Chicago Public Library. Teens will be able to drop in and “hang out, mess around and geek out” after school and on weekends with the YouSTEM set of challenges. Each challenge uses a “leveling up” model from gaming and is carefully designed to engage teens in different STEM topics and skills sets. YouSTEM will have challenges in the areas of robotics, electronics, Android app development and architectural design, for example. Challenges can be tackled

individually or in groups. Professional scientists, engineers, advanced undergraduates and graduate students will be available as mentors. In addition, teens who have leveled up to more advanced challenges in the progression will be available as peer mentors. All challenges will result in digital media artifacts that are shared online for peer review, remixing, expert judging and collaboration.

The goal of YouSTEM is to engage a diverse body of students across the city and suburbs in local and online collaborative communities.

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