

A young girl with dark skin and braided hair is smiling. She is wearing a light pink lab coat over a white t-shirt and a black apron. She has large, clear safety goggles on her face. In her right hand, she holds a white pipette tip. Her hair is styled in braids with pink hair ties. The background is a plain, light-colored wall.

**NORTHWESTERN UNIVERSITY**  
School of Education & Social Policy

**Improving Children's Lives**



# School of Education and Social Policy

## Reforming Education in All Contexts of the Education System

### SESP BY THE NUMBERS

Faculty members: **28**

Graduate students: **300**

Undergraduate students: **400**

### SESP IN THE SCHOOLS

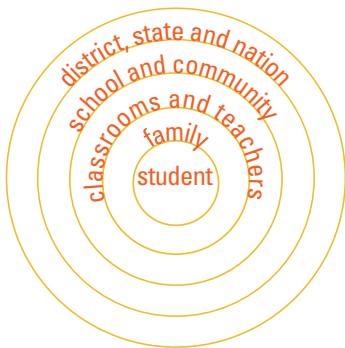
Research projects: **33**

Educators: **7,000**

Students: **37,000**

### VISIT

[www.sesp.northwestern.edu/schools](http://www.sesp.northwestern.edu/schools)  
for schools and updates.



Northwestern University's School of Education and Social Policy (SESP) works to reform education policies and practices in order to improve the lives of children and youth.

We believe that education reform is best achieved through a systemic approach, with attention to multiple contexts. With the student our central focus, we apply research-based efforts to affect education policies and practices in each context of the system, from the family to classrooms, schools and communities and even more widely to the district, state and nation.

In each context, the School of Education and Social Policy brings to bear innovative practices and policies based on significant research and development. With inventive designs and fresh approaches, we harness the power of new technologies and multidisciplinary methods to focus strategically where we might have the greatest impact. Thus, we have chosen to focus in the area of science, technology, engineering and mathematics (STEM) education, assisted by the Office of STEM Education Partnerships.

In addition, we work with schools having diverse demographic composition and different geographical locations in order to have a broad reach and cover many types of settings. Currently, our School's faculty members are leading more than 33 research and development projects in schools, involving more than 7,000 educators and 37,000 students.

Systemic education reform sounds like a big task for the smallest school of education in the top 10. Yet Northwestern is having tremendous success in impacting policies and practices in all contexts of the education system.



## Focusing on the Student

With special attention to disadvantaged youth in urban settings, the School of Education and Social Policy works directly with individual learners to maximize their potential and expand learning opportunities.

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### Supporting minority gifted students

SESP's Project Excite identifies gifted minority students from Evanston's third-grade classrooms and provides enrichment mathematics and science education and support until the students reach high school. The goal is to increase the number of underrepresented minority students taking upper-level courses in high school. Since the project began in 2000, 204 students have participated.

*"I have an analytical child. It's nice to have a program that steers her toward math and science because she has an outlet and is encouraged to be analytical and hone her skills."*

*Alan Lane-Murcia, Project Excite parent*

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### Encouraging urban girls to consider science careers

The Oncofertility Saturday Academy enrolls 30 high school girls annually in a two-year science program offered in partnership with Young Women's Leadership Charter School. The girls learn science concepts through hands-on lab investigations as they discover college and career choices in science. A related project involving eight teachers and 800 students will offer to high schools worldwide a biology curriculum that incorporates cutting-edge biotechnology skills through a partnership with biomedical researchers.

*"This program has given me so much motivation and inspiration to become a doctor."*

*Nicole Miles, student*



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### Exploring online language learning

The Digital Literacy and Transnationalism among Immigrant Adolescents Study at Curie Metropolitan High School explores how adolescents of immigrant backgrounds use the Internet to organize transnational social relationships, use information across countries and develop cross-cultural orientation in their language and literacy learning. Students participate in surveys, interviews and case studies.

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### Mentoring African American boys

The Boys to Men program mentors 300 African American boys ages 10 to 16 in the North Lawndale area of Chicago, and associate professor Jelani Mandara assists in evaluating the effectiveness of the program. Also in the Lawndale area, he works with the Developing Responsible Men program to teach students about life skills and college readiness skills.

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### Empowering urban minority students

Promote 360, a SESP undergraduate student organization that fosters minority empowerment and support, provides mentoring and tutoring to Chicago and Evanston students. The group develops activities to encourage younger students to attend college, including a pen pal program, an empowerment day on campus, advising on college admission and assistance with financial aid applications.

*“A lot of these kids would otherwise not have a chance to see a college campus.”  
Shari Labinger, sixth-grade teacher at Jane Addams School, which partners  
with Promote 360*



# Working with Families

By partnering with parents, the School seeks to improve children's education as well as promote lifelong learning.

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## Identifying effective parenting strategies

Jelani Mandara's Parenting and Adolescent Behavior project involves research with 300 Evanston Township High School students and their parents to assess the relationship between various parenting strategies and adolescent academic achievement and high-risk behavior.

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## Encouraging post-secondary education

In the Educare Post-Secondary Education Project professor Lindsay Chase-Lansdale is analyzing the supports and barriers to post-secondary educational attainment among young, low-income parents. In addition, the project is designing a pilot program that uses high-quality early childhood education centers in Chicago, Denver and Miami as a context for promoting and supporting parents' continuing education.

*"Study after study has shown that educational attainment is one of the most effective pathways to bettering life outcomes for poor families and their children."  
Professor Lindsay Chase-Lansdale, co-director of Educare Post-Secondary Education Project*

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## Preparing parents to meet the needs of gifted learners

The Center for Talent Development has been serving gifted children and their families for nearly 30 years. In addition to enrichment classes, summer programs and online courses for 7,900 students from preK through high school, the Center offers seminars and conferences to advise parents about the needs of gifted learners.



# Advancing Teachers

The School of Education and Social Policy is dedicated to training outstanding teachers, improving teacher quality and developing innovative leaders in education.

*“The program is incredibly well rounded in all areas that are critical to teacher preparation, and I have highly recommended it to everyone who has asked me about it.”*

*Kimberly Carson Person, graduate of Master of Science in Education program*

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## Developing science teacher leaders

Through the Early Elementary Science Partnership, teachers from 10 Chicago elementary schools take a two-year sequence of courses as preparation for teacher leader endorsement in elementary science. This museum partnership involving 91 teachers and 2,000 students increases science understanding and links specific science examples to local museum exhibits. Similarly, Chicago Transformation Teacher Institutes boost the knowledge and skills of teachers in mathematics and science leadership positions for Chicago Public Schools.

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## Preparing talented career changers for teaching

The NU-TEACH alternative teacher certification program is a 13-month accelerated course of study that prepares career changers and non-education graduates to teach in Chicago schools. The program develops promising teachers with strong subject matter knowledge for urban schools. In a typical year, 75 participants teach at 55 public, parochial and charter schools in Chicago.



*“I spent several years doing basic science research at Northwestern Medical School, and now I use that background to give students real-world examples of the concepts I am teaching.”*  
*NU-TEACH graduate Shannon Goodwin, a former molecular biologist*

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### **Collaborating with classroom teachers**

Each year the School of Education and Social Policy awards a yearlong sabbatical to a math or science teacher from the Chicago Public Schools to collaborate with SESP faculty in developing curriculum for schools. The Teacher in Residence returns to the school district with innovative ideas, equipped to lead reform activities related to integrating new technologies into the teaching of math and science.

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### **Guiding teachers to understand student thinking**

Working with eight partner schools, the Freezing Time project examines how mathematics and science teachers attend to the complexity of classroom interactions and student thinking. Using new digital video technology, associate professors Bruce Sherin and Miriam Sherin support teachers in understanding consequential classroom events through video reflection. Approximately 25 teachers and 750 students are involved.

*“Video analysis is an important tool in teaching because teachers have the opportunity to think more deeply about the interactions in their classrooms.”*  
*Martha Mulligan, Teacher in Residence*



# Changing Classrooms

At the classroom level, the School of Education and Social Policy breaks new ground by designing tools and curriculums that use new and different technologies for learning, with a special emphasis on science and mathematics education.

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## Preparing urban teenagers for college science

The Meaningful Science Consortium, which serves 82 teachers and 9,379 students at nine Chicago public high schools, prepares students for college-level academic work. The Consortium's science curriculum emphasizes meaningful science, sequence and structure, case-based inquiry, integrated technology, and support for literacy. Collaborative work with teachers and administrators builds new strengths.

*"I learned a lot, and I like being creative."*

*Ida Davis, Meaningful Science Consortium student*

*"The kids really love the curriculum; it's a good framework. ...*

*The coaches are really knowledgeable."*

*Alicia Howe, Farragut Career Academy science teacher*

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## Using computer models for science learning

Professor Uri Wilensky's NetLogo Investigations in Middle School Science and Mathematics provides a vibrant learning environment for science and mathematics at Parkview School, with 900 students. Another curriculum project uses engaging computer models to teach evolutionary science at Chicago's Wildwood Elementary School. Wildwood and two Singapore schools also benefit from NetLogo Investigations in Electromagnetism, a computer model-based curricular unit on electricity.



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### **Studying the best ways to investigate science**

**IQWST:** Investigating and Questioning our World through Science and Technology, serving 74 teachers and 7,411 students in 18 schools, studies how to design middle school science curriculum materials that support students in learning ambitious science content and scientific practices. Professor Brian Reiser’s project is building a three-year curriculum of meaningful project-based investigations in chemistry, physics, earth science and biology.

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### **Enabling remote science learning laboratories worldwide**

The iLab Network offers remote online laboratories enabling students and educators to use real instruments to carry out science experiments from anywhere at any time. iLab can be accessed by schools that might not own costly lab equipment. More than 1,000 students are using iLab to analyze real experimental data through curricula that follow authentic scientific processes.

*“My students appreciated the ability to perform an experiment that was previously unavailable to them, and the curriculum allowed them to make connections to their everyday world.”*

*David Chan, Evanston Township High School teacher*

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### **Basing science education in culture**

**A Cross-Cultural View of Biological Thought and The Cultural Context of Learning: Native American Science Education**, involving 91 teachers and 590 students at eight schools in Chicago and Wisconsin, examine how children learn about living things. These projects led by professor Douglas Medin study core biological concepts held by adults and children to inform science education, as well as to design culturally based science education programming.



# Advising Schools and Communities

The School of Education and Social Policy has an impact with school organizations — from individual schools to whole communities.

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## Examining leadership for mathematics education

Professor James Spillane’s leadership project investigates the leadership interactions for teachers and administrators related to mathematics education. Detailed data from 125 schools showed patterns of leadership and influence, and a survey of 4,000 teachers and administrators revealed sources of leadership influencing instruction.

*“Dr. Spillane’s leadership modules provided our district leaders and principals a fresh analytical lens and meaningful collaborative focus that ratcheted up our leadership capacity. Coupled with strong curricular and instructional supports, it really enabled us to increase student performance.”*

*Michael Lach, Officer of Teaching and Learning, Chicago Public Schools*

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## Establishing charter schools

With three campuses located on Chicago’s South Side, the innovative Betty Shabazz International Charter School, co-founded by professor Carol D. Lee, is dedicated to the academic, cultural, social and physical development of African American children. Betty Shabazz Elementary Academy has 300 K–8 students, Barbara A. Sizemore Academy has 200 K–8 students and DuSable Leadership Academy has 300 high school students.

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## Informing educational practices and technologies

Co-leading the Learning in Formal and Informal Environments (LIFE) Center, with major funding from the National Science Foundation, professor Reed Stevens aims to understand the complex processes of human learning over the life span. LIFE Center findings will inform educational theories, practices and technologies.

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## Evaluating after-school programs

After School Matters operates apprenticeship programs in 35 Chicago public high schools. Professor Barton Hirsch evaluated the effects of After School Matters on student academic performance, job skills and psychosocial development by studying 1,100 students from 42 schools. The photo at left shows students in the arts apprenticeship program.



# Guiding Districts, States and the Nation

Faculty at the School of Education and Social Policy conduct key research that guides education policy makers at the district, state and national levels. This research explores learning and development across the life span as well as social programs that affect schools, communities, children and families.

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## Analyzing the impact of accountability practices

Professor David Figlio analyzes the effects of school accountability design on student achievement and school behaviors. He is evaluating the largest school-voucher program in the United States and using a state census of public school principals to study school accountability in Florida. He is also studying how school accountability pressures affect teachers' career decisions and teacher quality.

*“We need to be very, very careful in terms of how we step up these measurements [standardized tests], in both what gets measured and how the results will translate in terms of incentives for teachers and schools, because that will make the difference.”*

*Professor David Figlio*

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## Overcoming obstacles to college

Professor James Rosenbaum is assessing the impact on college enrollment of a “coaching” program in the Chicago school district that aims to increase college access for disadvantaged students — by explaining college options, helping students assess colleges and assisting with scholarship applications. SESP researchers seek to understand the cultural barriers for disadvantaged students and how to overcome these obstacles.

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## Investigating effects of school policies

Associate professor Diane Schanzenbach investigates the outcomes for students of school accountability policies such as the No Child Left Behind Act, as well as the effects of class size and school reform including small schools and charter schools. Currently she is determining how policies for school lunches, recess and gym class affect child obesity.

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## Examining achievement gaps

To analyze the social distribution of academic achievement in the United States, professor Larry Hedges is examining achievement gaps for gender, race, ethnicity and social class. By combining different types of data, he aims to understand disparities in academic achievement among minorities. This research can inform new policies to make education more equitable at the district, state and national levels.



**NORTHWESTERN**  
UNIVERSITY

School of Education and Social Policy  
2120 Campus Drive  
Evanston, IL 60208-2610  
[www.sesp.northwestern.edu](http://www.sesp.northwestern.edu)



*“Northwestern University’s School  
of Education and Social Policy  
works to reform education policies  
and practices in order to improve  
the lives of children and youth.”  
Dean Penelope Peterson*

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