

SPECIAL REPORT

RETOOLING THE CLASSROOM

for 21st Century Teaching



TEACHERS COLLEGE COLUMBIA UNIVERSITY
2010 ANNUAL REPORT

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TEACHERS COLLEGE 2010 ANNUAL REPORT

The Teachers College 2010 Annual Report was produced by the Department of Development and External Affairs, Teachers College, Columbia University.

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ON THE COVER



Our cover photo evokes a teaching toolbox composed of items from the stories in our special report beginning on page 13. Pedometers are given out to public school students who visit TC's EarthFRIENDslab so that they can monitor their energy output versus their nutritional intake. The flyswatter is used to identify vocabulary words by elementary school students of a TC student who teaches Chinese, while the Chinese bus schedule is employed in an exercise given to adult students. The colored tokens are used for positive reinforcement with children diagnosed with autism. The checkbook, money and calculator represent a TC course on fiscal responsibility. The rods are part of a brush-up course on science for elementary school teachers. And the iPad and smartphone can display new TC-inspired software used for teaching math to young children.

Photograph by Samantha Ison

Most of the stories in our special report are supplemented by online videos of classroom teaching or interviews with TC faculty members or students. Be sure to check the end of each story for more information.

A LETTER FROM THE PRESIDENT

Dear Friends:

One might regard “Teachers College” as a misnomer when 40 percent of our students are preparing for careers in health and psychology.

But as this Annual Report vividly illustrates, our name has never suited us better. True, we are an eminent professional school that prepares great teachers and school principals—as well as health educators, nutritionists, school psychologists, speech pathologists, community organizers and economists. But our impact on society derives from our scholarly prowess and inventiveness. More than any other research institution of its kind, TC has led the way in increasing understanding of how people of all ages learn in all disciplines, how best to teach them what they need to know, and how to transform our findings in to actual curricula in classrooms and other settings.

The eight stories featured in the Special Report (beginning on page 13) demonstrate the extraordinary range of high-impact research at Teachers College on learning. You’ll discover how TC faculty (and our students!) are:

- Designing advanced mathematics education for very young children;
- Providing diabetes education for health care professionals who help patients manage their disease;
- Educating high school and college students about the national debt, the federal budget deficit and other issues related to fiscal responsibility;
- Training top executives at corporations and non-profits to lead their organizations through major and often volatile change;
- Bringing elementary school teachers—including those who have had no formal science preparation—up to speed in both science content and pedagogy;
- Educating elementary and middle school students—an age group among whom obesity has been growing at an alarming rate—to change their behaviors around nutrition and fitness;
- Creating new paradigms in the teaching of Chinese to speakers of other languages;
- Using science-based teaching to enable thousands of children diagnosed with autism and other language deficits to speak and function in mainstream schools.

Our work could not be more timely. Low graduation rates in inner-city schools and the mediocre performance of American students on international tests underscore the need to transform K–12 education. Community colleges, which are the major route to advancement for half of all low-income and minority students in this country, including many students who have come to the United States from other countries, demand greater attention. Upheaval in the global economy has forced adults of all backgrounds to consider returning to school and compelled the nation’s civic and business leaders to re-think education itself.

Each effort featured in our report addresses a specific critical need in society:

- Of all the areas in which U.S. schoolchildren trail their counterparts in other leading industrialized nations, gaps in math and science are especially glaring.
- Seventy percent of organization change efforts fail, not to mention a full 75 percent of mergers and acquisitions.



- Diabetes is a burgeoning epidemic that is on pace to afflict 30 million Americans by the year 2030—and obesity and poor fitness among current school-aged children are major contributing factors.
- Diagnosis of autism spectrum disorders has risen dramatically during the past two decades, particularly in children under the age of three.
- America's \$14 trillion debt arguably poses the greatest fiscal threat to our country's future, yet standard economics textbooks for high school and first- and second-year college students barely touch on the issue.
- Chinese is the world's most frequently spoken language, and China is the world's emerging economic super-power.

The scope of TC's efforts to create better teaching in each of these areas varies widely. While the curriculum we are creating on fiscal responsibility (thanks to a grant from the Peter G. Peterson Foundation) will be distributed free of charge to every high school in the country, our work on science education for elementary school teachers is in the early stages, currently serving a group of neighborhood schools. In every instance, we are establishing the highest-quality base of research from which to invent new teaching methods and content that will serve as national models for powerful and enduring solutions.

That standard applies not only to the work spotlighted in the Special Report, but also many other areas of endeavor at the College during the past 12 months. These include:

OUR WORK IN CITY SCHOOLS

We continue to refine our engagement with urban public schools—the heart and soul of TC's mission—to meet the evolving needs of a rapidly changing student population.

Leadership is perhaps the single most critical factor in school success. Indeed, a recent study—"School Principals and School Performance," jointly authored by Damon

Clark, an economics professor at the University of Florida; Paço Martorell, an economist at the RAND Corp.; and Jonah Rockoff, an economist at the Columbia Business School—finds that schools perform better when they are run by experienced principals.

TC is at the cutting edge of helping the best principals get even better. Our 15-month Cahn Fellows Program has served more than 15 percent of New York City principals, who work with more than 200,000 schoolchildren. Launched in 2003, the program recognizes the success of effective principals and provides them with opportunities for professional, intellectual and personal growth. The same study found that principals who participated in the program have improved student performance and the learning environment at their schools. Cahn Fellow-led schools out-performed their peers in terms of student ELA and math scores, attendance, graduation rates, school environment surveys and Department of Education Quality Review. The study's authors concluded that the positive impact of a Cahn Fellowship on student math scores is "roughly the same as the effect of a first-year principal acquiring five years of experience." The report found no statistically significant differences in the student demographics of the schools examined.

Excellent teaching is critical to all schools, especially those serving high-needs populations. This past summer TC welcomed the first cohort of students in Teaching Residents @ Teachers College (TR@TC), a 14-month master's degree program creating intensive urban residencies in which participants apprentice with experienced teachers at high-needs schools. Residents of the program emerge with New York State initial certification to teach in one of three specialized programs: Teaching English to Speakers of Other Languages (TESOL), Intellectual Disabilities-Autism, or Teaching Students with Disabilities (Secondary Inclusive Education). After completing the program, each resident will be required to teach for at least

"We are establishing the highest-quality base of research from which to invent new teaching methods and content that will serve as national models."

“Our faculty are looking for ways to help teachers connect with a student population increasingly composed of young people from other nations and cultures.”

three more years in a high-needs New York City urban school. TR@TC, which is being funded by a \$9.75 million grant from the U.S. Department of Education, focuses on the secondary grades, where the need for qualified teachers is greatest.

Yet even the best teachers cannot succeed without tools to address persistent problems that hamper their students. Of these, illiteracy looms especially large, with 75 percent of all high school graduates nationwide deficient in literacy skills. With funding by the Carnegie Corporation of New York, a group of TC faculty led by Dolores Perin, coordinator of our Reading Specialist program, has developed literacy coursework for middle and high school pre-service teachers predicated on a core belief: While young children learn to read, older students read to learn. This past summer, Professor Perin chaired a major conference at TC (also sponsored by the Carnegie Corporation) on content-area literacy, which holds that struggling older readers can be successful if they tackle more difficult, age-appropriate material rather than texts aimed at younger students—particularly if the assigned materials are directly related to their everyday lives or career aspirations. As Professor Perin said, this approach is “an extension of John Dewey’s idea that learning is best acquired through active engagement in solving real-life problems.”

Making schoolwork exciting and relevant is essential in all disciplines. TC faculty are blazing new trails on this front by using hip-hop both as a bridge to understand the concerns and needs of urban youth and as a medium for engaging young people in the classroom. In March, our Vice President’s Office for Diversity and Community Affairs hosted the panel “Education and the Hip-Hop Generation,” which explored the intersection of education, hip-hop and the learning processes. As one speaker, Christopher Emdin, TC Assistant Professor of Science Education, has written in his recently published book, *Urban Summer Education for the Hip-Hop Generation*, hip-hop,

“because it is mostly created by urban youth...provides insight into the inner workings of their thoughts about the world and, consequently, is a tool for unlocking their academic potential.”

Our faculty also are looking for ways to help teachers connect with a student population increasingly composed of young people from other nations and cultures. This past spring, TC’s Student Press Initiative concluded a massive project in which students at five New York City schools for recent immigrants anthropologized their stories in a five-volume series titled *Speaking Worlds*. The pieces in the anthology were drafted from interviews conducted in Mandarin, Spanish, French, Haitian, Creole, Urdu, Bangla, Gujarati and Arabic. In May many of the authors converged in TC’s Cowin Center to read from their work.

ENSURING HEALTHY COMMUNITIES

If education has become today’s global currency, the health of individuals, communities and organizations is the *sin qua non* for the advancement of teaching and learning.

Advancing health through research and professional training is embedded in TC’s DNA. The College was the birthplace of nursing and nutrition education, and one of its earliest leading lights, E.L. Thorndike, introduced the scientific method to research in educational psychology. The field of conflict resolution, a discipline that in turn helped to give rise to social-organizational psychology, also had its beginnings at TC.

Today, our faculty are charting new directions that speak to the most pressing needs of our era. On the most basic level, this work continues to focus on physical well-being. In one striking example, a team led by Charles Kinzer, Professor of Education, has received a \$1,500,000 grant from the Robert Wood Johnson Foundation, through the foundation’s Health Games Research national program, to develop a smart phone app that emulates the physiological responses smokers get from smoking. The first apps, now

in testing, are likely to be for Apple Inc.'s iPhone or iPod Touch. The user would control the game by blowing into the device's microphone in response to different color and sound stimuli coming from the handset. Professor Kinzer and his team hope that playing the game elicits the same brain patterns, heart rate levels and relaxation responses that smokers get from smoking. The game, "Lit: A Game Intervention for Nicotine Smokers," is expected to be released this year.

Other research endeavors target psychological and emotional issues. More than ever before, the world today is marked by intractable conflicts that are highly destructive and perpetuated by conditions of misery and hate. In work recently published in *American Psychologist*, Peter Coleman, director of TC's International Center for Cooperation and Conflict Resolution and holder of a joint appointment at Columbia University's Earth Institute, proposes a dynamical systems approach to such conflicts that outlines strategies for changing systems of thought, belief and memory.

In interpersonal relations, intractable prejudices and stereotypes can be equally damaging, even or perhaps especially when those who perpetrate them do so on an unconscious level. This past spring, Teachers College psychologist Derald Wing Sue, one of the world's most frequently cited multiculturalism scholars and an expert on issues of discrimination, received the first-ever UnityFirst.com National Diversity and Inclusion Prize for his book, *Microaggressions in Everyday Life: Race, Gender and Sexual Orientation*. Professor Sue creates a taxonomy of microaggressions—the unintended slights or social cues inflicted by members of a dominant group on minorities—and documents the toll they take on the emotional and even physical health of recipients. In a second book published this past year, *Microaggressions and Marginality: Manifestations, Dynamics, and Impact*, he brings together essays by experts in psychology and discrimination—many of them his current and former graduate students at TC.

Entrenched attitudes can directly limit economic advancement, as well. As families in poverty seek to transcend their circumstances, the ability of women to rise in the work force is essential. Yet they have often been hampered by the question: Do newborns in the first year of life fare worse when their mothers work? The answer, according to a major study co-authored by Jeanne Brooks-Gunn, TC's Virginia & Leonard Marx Professor of Child and Parent Development Education, is essentially "no." In a report that generated international headlines, Professor Brooks-Gunn and her co-authors, Wen-Jui Han and Jane Waldfogel, both professors at the Columbia School of Social Work, looked beyond the scope of parental employment to include extensive data on parent-child interactions, family income, child care and other factors that affect child development. They discovered that while early maternal employment carries some downsides, it also offers some advantages, such as increasing mothers' family income along with the likelihood that children receive high-quality day care. In the tally of advantages and disadvantages that accrue from new mothers working, the net impact on infants is neutral.

STRENGTHENING TC FOR THE FUTURE

Our prominence in education research, policy and practice at the cutting edge has helped to attract talented, ambitious students to TC in ever-increasing numbers. In fall 2009, we welcomed our largest entering class since the mid-1970s—only to better that performance this past September with our largest, most diverse and most selective incoming class in the post-World War II era. In all, applications have risen by 17 percent since 2006.

By staying at the cutting edge, we also bring our alumni back. In April 2009, more than 500 alumni attended TC's second annual Academic Festival—a day of stimulating panels, presentations and performances by our faculty, alumni, staff and students. Topics included

The College's research targets social and emotional issues, from intractable conflict to attitudes toward women in the workforce.

“We are redoubling our commitment to bolster research at all stages of development, across all disciplines.”

the requirements for founding or leading an innovative school in New York City; advances in technology to support teaching and learning; executive coaching for leadership effectiveness; helping adults refine longstanding skills and learn new ones; promoting nutrition and fitness in schools; and—for parents—tips for helping kids get in to college. The event was highlighted by the first-ever presentation of the TC President’s Medal of Excellence to two alumni: His Excellency Nahas Angula, the Prime Minister of Namibia and the architect of that nation’s education system following its independence from colonial rule; and Ulysses Byas, a former principal and superintendent who led the fight for better resources for black schools in the American South during the segregation era. We also celebrated the contributions of longtime TC Trustee Joyce Cowin with the dedication of the Cowin Conference Center and honored five distinguished alumni: Raphael Montañez Ortiz, the noted sculptor and founder of Harlem’s El Museo del Barrio; Vivian Ota Wang, Program Director of the National Human Genome Research Institute; Viola Vaughn, founder of 10,000 Girls, which provides education and business training to girls throughout Africa; the Reverend Lesley George Anderson, President of the United Theological College of the West Indies; and Luis Rios, Education Consultant at the California Department of Education, who provides assistance to family literacy programs.

The theme for this year’s Academic Festival, which will be held here at TC in April 2011, is “Learn and Live Well: Bringing Education to the Table.”

Finally, we have launched several broad initiatives to ensure a continuing tradition of groundbreaking work that will keep TC faculty, students and alumni at the cutting edge well into the future.

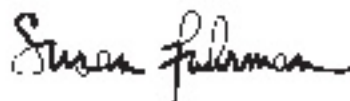
In 2007 Provost Thomas James created a seed fund to back innovative cross-disciplinary work by our faculty. Over the past three years, the Provost’s Investment

Fund has awarded more than 40 grants of \$20,000 each to support work ranging from a faculty working group on Latina/o education to a symposium that will convene some of the nation’s leading experts on creativity. The success of the Fund powerfully confirms Provost James’ belief that “innovation cannot be legislated from the top down,” and that successful administrations empower faculty to pursue promising research and provide the political will to help bring their great ideas and discoveries to scale.

But other conditions are essential to creating a climate conducive for the highest-quality work. That is why, in September, I declared the 2010–11 school year TC’s “Year of Research”—a time when the College will take major leaps toward rethinking and reinventing education across the human lifespan.

We are redoubling our commitment to bolster research at all stages of development, across all disciplines, and have already adopted measures that will make it easier for faculty to identify and develop funding proposals for research while involving students more closely in the process.

Research will also be a major focus of Teachers College’s soon-to-be launched capital campaign—an effort that will coincide with our celebration, beginning in late 2012, of the 125th anniversary of the College’s founding. The latter, while certainly a moment for taking stock of all we have accomplished in the past, will be, above all, an occasion for envisioning our future. As I told our faculty, students and staff this past fall, when the College celebrates its 250th birthday in 2137, I want eminent historians to describe how Teachers College rethought and reinvented education across the lifespan in ways that our founders never could have imagined.



Susan H. Fuhrman

2010: THE YEAR IN REVIEW

The College hosts the U.S. Secretary of Education, provides humanitarian aid to Haiti, analyzes the impact of federal stimulus dollars, honors the Prime Minister of Namibia, welcomes four new trustees and focuses on literacy issues in older children.

Covering the period of September 1, 2009 through August 31, 2010

September 2009

Buoyed by a six percent increase in applications and its lowest percentage increase in tuition in decades, TC welcomes an entering class of more than 1,800—its largest since the mid-1970s.



The College names John Allegrante, Professor of Health Education, to the newly created position of Deputy Provost, focusing on academic initiatives.

October

Inaugurating the College's Phyllis L. Kossoff Lecture, U.S. Secretary of Education Arne Duncan praises TC but calls for an overhaul of most teacher preparation programs to help close the achievement gap between minority and white students, improve graduation rates and prepare more students for college and the workplace.



November

Speaking in Milbank Chapel, Merryl Tisch, Chancellor of the New York State Board of Regents, and David Steiner, the state's Commissioner of Education, outline their ideas for changing teacher certification and evaluation.

OFFICE OF SPONSORED PROGRAMS

Despite a challenging economic climate, TC maintains its overall volume of grants for innovative projects, totaling \$37,196,859 in awards from private foundation and government sources. The total includes:

Renewal Awards: \$22,860,339

New Awards: \$13,160,672

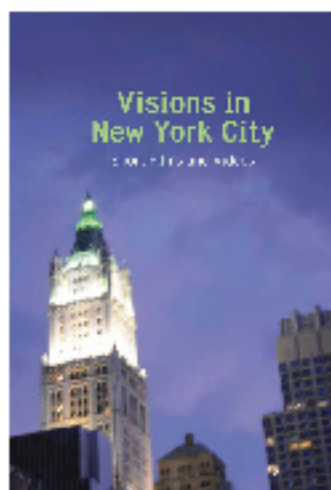
Supplemental Awards: \$1,175,848

TC's Macy Gallery hosts "Conversations Across Cultures," a symposium on new ways to approach art. Faculty members Judith Burton and Olga Hubbard and two TC students curate an accompanying exhibit, "Cross-Cultural Conversations in the Arts—Bridging Discourses."

December



John Fischer, who served as President of the College from 1962–1974 passes away at age 99. He came to national attention through his enforcement of desegregation as the superintendent of Baltimore city schools, and was subsequently appointed Dean of Teachers College in 1990.



"Visions in New York City, an exhibition of short films and videos at Macy Gallery, is selected for inclusion at the eighth annual Art Basel-Miami Venice Fair. Curated by world renowned artist Maurizio Pellegrin, "Visions" features several pieces by TC students, alumni and faculty.

RESEARCH HIGHLIGHTS



A new report co-authored by Elisabeth Barnett, a senior research associate at TC's Community College Research Center, and commissioned by the Blackboard Institute, finds that dual enrollment—the practice of enabling high school students to take college-level courses—

can be effective for all students, not just high achievers.

In a paper in *American Psychologist*, Peter Coleman, Professor of Psychology and Education, and colleagues argue for a paradigm shift in addressing intractable conflicts. Their paper outlines a dynamical systems approach that considers three strategies for changing systems of thoughts, beliefs and memories in enduring conflicts.

Charles Kirzer, Professor of Communication and Education, and colleagues receive funding from the Robert Wood Johnson Foundation to develop "LIT: A Game Intervention for Nicotine Smokers," an innovative smart phone app that produces the same physiological responses smokers get from smoking.



Microaggressions in Everyday Life: Race, Gender and Sexual Orientation, a book by Derald Wing Sue, Professor of Psychology and Education, provides a first-ever taxonomy of unintended slights towards people of color; women; gay, lesbian and transgendered; and other populations. *Microaggressions* is the result of five years of research in TC's "Microaggressions Laboratory."

George Bonanno, Professor of Psychology and Education, publishes *The Other Side of Sadness: What the New Science of Bereavement Tells Us About Life After Loss*. Culled from hundreds of interviews

with people who have lost loved ones, the book argues both that there is no "right way" to grieve, and that most people have an innate resilience that allows them to mourn and move on.

A study co-authored by Jeanne Brooks-Gunn, Virginia & Leonard Marx Professor of Child and Parent Development Education, finds virtually no ill effects of maternal employment during a child's first year of life.

Isobel Genenio, Mary Swartz Rose Professor in Nutrition and Education, and Pamela Koch, Executive Director of TC's Center for Food & Environment, receive a three-year \$1.497 million grant from the U.S. Department of Agriculture to develop a science education and nutrition curriculum and evaluate its effectiveness in preventing obesity in some 2,000 low-income, predominantly minority fifth graders at 20 New York City public school.



Nearly 175 TC faculty and students present research or speak at the annual meeting of the American Educational Research Association (AERA), themed "Understanding Complex Ecologies in a Changing World." Jeffrey Henig, Professor of Political Science and Education,

receives AERA's Outstanding Book Award for *Spin Cycle: How Research Is Used in Policy Debates: The Case of Charter Schools*. Anna Neumann, Professor of Higher Education, receives AERA's Exemplary Research Award in Higher and Postsecondary Education for her career-long research accomplishments. Edmund W. Gordon, Jr., TC's Richard March Hoe Professor Emeritus of Psychology and Education, is honored for a distinguished career spanning seven decades. Faculty members Jeanne Brooks-Gunn, Celia Genishi, Herbert Ginsburg, Sharon Lynn Kagan, Janet Miller, Gary Mariello and Stephen Silverman are named AERA Fellows.

January 2010

The TC community responds to the earthquake in Haiti by pitching in to a drive mounted by the Vice President's Office for Diversity and Community Affairs to collect supplies. Several alumni participate in on-the-ground rescue efforts. The TC Student Senate raises money for relief efforts for Haiti by selling tee-shirts.

February

Teachers College signs a memorandum of understanding with Turkey's Bahoesehir University to foster a wide-ranging collaboration that includes assisting the Istanbul-based institution in establishing a school of education. TC's Francisco Rivera-Batiz, Professor of Economics and Education, will develop a jointly administered center on education and economic development.



Teachers College receives a three-year, \$2.45 million grant from the Peter G. Peterson Foundation to develop a comprehensive curriculum about the fiscal challenges that face the nation. The curriculum, developed by a team led by faculty member

Anand Marri, will be distributed free of charge to every high school in the country (see story, page 26).

TC's Campaign for Educational Equity convenes the first major national symposium to analyze the impact of the American Reinvestment and Recovery Act (ARRA), through which the U.S. Department of Education is distributing \$100 billion to states to promote innovation and equity in public schools. The bottom-line finding: the money is being used primarily to plug budget gaps.

DIVERSITY AND COMMUNITY AFFAIRS

Among its many programs, TC's Vice President's Office for Diversity and Community Affairs hosts numerous community-building initiatives and events in FY10 around its theme of "A Critical Conversation about Privilege." These include:

- Four informational facilitated dialogues with employees to discuss the impact of privilege within the College community and to identify relevant themes to community-building work;
- A leadership seminar for faculty and administrators of the Dine Tribal College (the oldest tribal college in the U.S.) on TC's implementation of its Diversity and Community Mission.
- A Constitution Day Program, "Marriage Equity in New York State," which presents an update on the status of same-sex marriage in New York State and engages in the national debate addressing the disparity of rights when juxtaposed to those enjoyed by heterosexual married couples. Speakers include Daniel O'Donnell of the New York State Assembly, Christine Quinn, Speaker of the New York City Council, Jeffrey Lax of Columbia University and Susan Sommer of Lambda Legal Defense and Education Fund.
- Academic programs that address a range of salient issues, including "Education and the Hip-Hop Generation," featuring three TC faculty members; "Women in Higher Education," co-sponsored with TC's Higher and Post-Secondary Education Program; and Booktalks that introduce new works by four tenured TC faculty and one faculty member from John Jay College (also a TC alumnus);
- Development of a new Professional Staff Evaluation Review Process (effective June 2011), with the goals to implement a



consistent college-wide appraisal process regarding individual and unit performance and apply it with full compliance by all full-time professional staff supervisors and employees;

- Awarding \$14,300 in grants to fund 14 student-, faculty- and staff-sponsored initiatives as part of the Vice President's Diversity and Community Initiatives (DCI Grant Fund); and \$7,500 in grants toward the Vice President's Grant for Student Research in Diversity to enhance students' research efforts. The DCI Awards include the "Peace Education Conference," "The Women's Movement and NGOs in Latin America," "Faculty Reflections on the AP/IA Experience in U.S. Higher Education," "Training Workshop for Working with LGBT Students," "People of Color Caucus—No Longer Minorities: Experience of Students of Color at Teachers College," and "Racial Literacy Roundtables: Peer-to-Peer Conversations on Teaching in Urban Schools;"
- The second annual Community Cook-Off and Tasting Celebration in the TC Dining Hall, which engages a wide cross-section of the College in celebrating the year's extensive community-building efforts.



March

Peter Groff, Director of the U.S. Department of Education's Center for Faith-Based and Neighborhood Partnerships, keynotes "Write the Vision: Make it Clear," a day-long conference on the role of the faith-based community in closing the education achievement gap, hosted by TC's Vice President's Office for Diversity and Community Affairs and the College's Black Student Network.

Charles Basch, Richard March Hoe Professor of Health Education, presents the findings of "Healthier Students are Better Learners," his new meta-study focusing on seven health risks that disproportionately impair the academic performance of urban minority youth.

The Vice President's Office for Diversity and Community Affairs presents "Education and the Hip-Hop Generation," a panel on the intersection of the hip-hop cultural movement and urban education. Three African-American male faculty members speak: Christopher Emdin, Assistant Professor of Science Education; Marc Lamont Hill, Associate Professor of English Education; and Thurman Bridges, Post-Doctoral Research Fellow in Curriculum and Teaching.

The College hosts the National Conference of State Legislatures' annual National Education Seminar. The event is co-sponsored by the National Center for Postsecondary Research at Teachers College and includes presentations by several TC faculty members.

April

TC holds its second annual Academic Festival, themed "Leadership: Defining the Next Decade." The event is

POLICY HIGHLIGHTS



U.S. Secretary of Education Arne Duncan appoints Thomas Bailey, the George and Abby O'Neill Professor of Economics and Education at Teachers College, to serve as chair of a new national Committee on Measures of Student Success. The committee will develop recommendations for two-year degree-granting institutions of higher education to comply with the law's graduation and completion-rate disclosure requirements.

Hosted by TC's Campaign for Educational Equity, four legal and education specialists assess the impact of the Abbott districts, the specially funded school districts created by the courts in New Jersey's long-running school finance litigation, which have recently been demobilized. The verdict: some gains were made for poorer students, but the state's achievement gap remains deeply entrenched.



Amy Swan Wells, Professor of Sociology and Education, presents the findings of her study, "Boundary Crossing for Diversity, Equity and Achievement: Inter-district School Desegregation and Educational Opportunity," at a conference in Washington, D.C. The study documents the accomplishments of the nation's eight remaining inter-districts, which enable students to move across district lines with the specific aim of attending integrated schools. The study finds that students who attended suburban schools through inter-district programs significantly outperformed peers who stayed in city schools.

Another study by Wells documents alarming resource disparities in five different Long Island school districts. A key finding: wealthier districts are able to generate higher levels of public funding and supplement it through private resources from parents, community members and other donors who are connected to the district.



Charles Basch, Richard March Hoe Professor of Health Education, participates in a meeting at the White House, as part of First Lady Michelle Obama's "Let's Move" campaign to prevent childhood obesity.

Basch and his colleagues speak to the President's Task Force on Childhood Obesity, about the extent and causes of childhood obesity.

John Allegrante, Professor of Health Education and TC Deputy Provost, takes students in his Social Policy and Prevention course to Washington, D.C., as part of the 11th Annual National Health Education Advocacy Summit, a two-and-a-half day annual conference to teach advocacy skills to students, faculty and health education professionals.

highlighted by the first-ever presentation of the College's President's Medal for Excellence, to Prime Minister Nǎhas Angula of Namibia (Ed.M., '79), architect of that nation's education system, and Ulysses Byas (M.A., '52), who fought for better resources for black public schools in the pre-integration American South. TC also honors Trustee Joyce Cowin with the dedication of the Cowin Conference Center and presents its Distinguished Alumni Award to the Reverend Lesley George Anderson (Ed.D., '87),



President of the United Theological Seminary of the West Indies; Raphael M. Ortiz (Ed.D., '82), Founder of El Museo del Barrio; Viola Vaughn (Ed.D., '84), Founder of 10,000 Girls in Senegal, West Africa; and Vivian Ota Wang (Ph.D., '93), National Institutes of Health Agency Representative of the National Science and Technology Council. Luis Rios, Jr. (M.Phil., '01), Consultant at the California Department of Education working on family literacy programs, receives TC's Early Career Award.

Tim Page, renowned music critic and author, keynotes TC's annual "Mind and Body in Autism" conference, sponsored by the Center for Opportunities and Outcomes for People with Disabilities in collaboration with the College's Leonard and Frances Blackman Lecture Series. Temple Grandin, whose journey with autism inspired a recent HBO movie, participates via conference call.

May



Teachers College Trustee Cory Booker is elected to a second term as Mayor of Newark, New Jersey.

An independent study of New York City public school records finds that principals who participate in the TC Cahn Fellows Program improve student performance and the learning environment at their schools. Schools led by Cahn Fellows out-perform peer institutions in student ELA and math scores, attendance, graduation rates, school environment surveys and DOE Quality Review.

Immigrant students in New York City public schools gather in the Cowin Center to read from their oral histories, recently published by TC's Student Press Initiative in the five-volume anthology *Speaking Worlds*.

TC welcomes its first cohort of Teaching Residents@Teachers College (TR@TC). Funded by a \$25 million grant from the

NEW FACULTY

TC welcomed an impressive group of new faculty hires, increasing the diversity of its make-up:

Faculty



Hsu-Min Chiang
Assistant Professor in Autism Spectrum Disorders, Health and Behavior Studies



Daniel Friedrich
Assistant Professor of Curriculum, Curriculum and Teaching



Maria Ghiso
Assistant Professor of Literacy Education, Curriculum and Teaching



Georgia Malandraki
Assistant Professor of Speech and Language Pathology, Biobehavioral Sciences



Hansun Waring
Assistant Professor of Applied Linguistics and TESOL, Arts and Humanities



Michael Wilson
Assistant Professor of Inclusive Education, Curriculum and Teaching

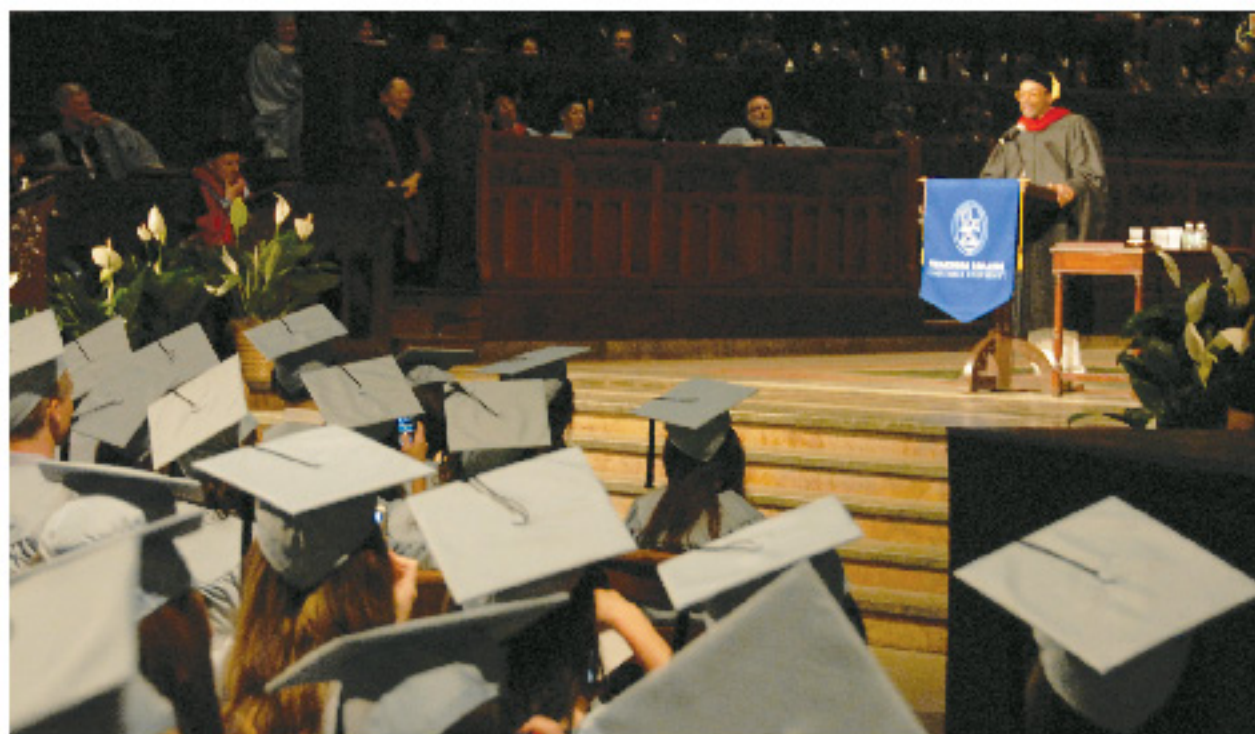
Postdoctoral Fellows

Ars had Ali
International and Transcultural Studies

Fanon John Howell
Department of Organization and Leadership

Faculty Demographics

Male: 44 percent	Female: 56 percent
Minority: 25 percent	Tenured: 73 percent



U.S. Department of Education, the program enables residents to apprentice with experienced teachers at high-needs schools and earn a master's degree. Graduates commit to teach for three additional years in a New York City public school.

At its 2010 Convocation ceremonies, the College presents its Medal for Distinguished Service to Gail Collins, *New York Times* columnist; film director Spike Lee; and alumnus Richard Mills, former Commissioner of Education for the State of New York. Jill Biden, community college educator and wife of U.S. Vice President Joseph Biden, speaks at the doctoral ceremony.

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Four new Trustees join TC's Board: psychologist Nancy Rauch Douzinas, President of the Rauch Foundation; Martha Berman Lipp, former owner and operator of Merchants Travel Inc.; Leslie Morse Nelson, President of Nelson-Giroux, Inc., an interior design and consulting firm, and daughter of Trustee Emeritus Enid ("Dinny") Morse; and Milbrey "Missie" Rennie Taylor, a strategic and media consultant who has spent more than 30 years in the television news business. Departing from the Board are Marjorie Hart (named Trustee Emeritus) and Jan Krutowski.

ENROLLMENT

In Fall 2009, TC welcomed its largest entering class since the mid-1970s—only to better that performance this past September with our largest, most diverse and most selective incoming class in the post-World War II era. In all, applications have risen by 17 percent since 2006.

Among our 2010 highlights:

- A four percent increase in applications at the College over FY09. TC received nearly 6,090 applications, the largest and most diverse applicant pool in its history;
- More than 1,800 new students enrolled in the Summer/Fall, a slight percent increase from FY09;
- A two percent increase among master's degree candidates over FY09;
- A one percent decline in applications at the doctoral level;
- A one percent increase in yield (percentage of admitted students who enroll from 50 percent yield percentage in 2009 to 51 percent yield percentage in 2010. Masters yield increased from 49 percent (2009) to 50 percent (2010), and doctoral yield decreased from 59 percent to 45 percent;
- Fifteen percent of enrolled students are from outside the United States. In terms of self-reported ethnicity/race of enrolled students, 8.9 percent are African American, 10.9 percent are Asian American and 8.9 percent are Hispanic.

Teachers College receives two AmeriCorps grants from the Corporation for National and Community Service. The National Educational Award supports a total of 93 Professional Corps members to teach full-time in high-need public schools in New York City and around the country. The National Direct Recovery Grant funds a volunteer program to place 28 TC graduate students in volunteer positions with education initiatives in northern Manhattan.

July

Trustee Eduardo Martí is appointed to the newly created post of Vice Chancellor for Community Colleges by the Board of Trustees of The City University of New York.

Some 150 science and social studies teachers attend a conference at TC focusing on "content area literacy," a teaching strategy in which adolescents struggling with literacy acquire reading and writing skills by working with more difficult texts that relate to their interests.

August

A group of 150 Upper Manhattan school principals meet at TC with Anthony W. Miller, Deputy Secretary and Chief Operating Officer of the U.S. Department of Education. The meeting is co-sponsored by Congressman Charles Rangel.

DEVELOPMENT

Despite the prevailing economic uncertainties of this past fiscal year, TC had another solid year of fundraising, with dramatic improvements in our various outreach efforts, across all constituencies and in diverse media. Strategic programmatic enhancements in Government Relations, Planned Giving, Alumni Relations and Public Relations have effectively set the stage for the important campaign-planning work that will be the focus of our efforts in Fiscal Year 2011.

Fundraising from individuals, through major and planned gifts, surpassed the goal of \$8.1 million by more than \$1.2 million (15 percent). The TC Fund achieved its goal of \$1.775 million, a five percent increase over the previous year and the largest annual fund campaign in the College's history. The Fund was able to reach this level of achievement through an eight percent growth in Dewey Circle membership, and unrestricted, designated realized bequests.



ENVIRONMENTAL INITIATIVES


The TC Student Senate's Go Green Committee launches highly visible sustainability efforts on campus, including the Rockin' Earth Day Festival, while the College's executive steering committee establishes a range of long-term initiatives.

Accomplishments in FY10 include:

- Installing water-saving washing machines in all residence halls, saving 1,762,000 gallons of water in residence hall laundry rooms.
- Replacing 100-watt incandescent light bulbs with compact 27-watt fluorescent light bulbs, which last 13 times longer.
- Installing a rain garden in Russell Courtyard, funded from a Brita grant written by members of Go Green.
- Placing 16 planters with native perennials, for use by children, and two compost bins in Russell Courtyard.
- The College also announces plans to boost its rate of recycling from 35 percent of all waste recycled to 50 percent over the next two years, and from 50 percent to 75 percent over the next five years.

More broadly, TC commits to three guiding principles of sustainability:

- Demonstrating institutional practices that promote sustainability, including measures to increase efficiency and use of renewable resources, and to decrease production of waste and hazardous materials.
- Encouraging environmental inquiry and institutional learning throughout the College community.
- Establishing indicators for sustainability that will enable monitoring, reporting and continuous improvement.



More than any other research institution of its kind, TC has led the way in increasing understanding of how people of all ages learn in all disciplines. In the following eight stories, spanning fields from diabetes to the national debt, discover how we're

Retooling the Classroom

for 21st Century Teaching

In the Patient's Corner

A new program will seed a corps of certified diabetes educators

Martha da Silva is an intelligent, educated woman who has spent plenty of time talking to doctors. Yet because of a childhood illness that required her to undergo multiple daily injections, da Silva has a fear of needles so intense that, on occasions when she has been hospitalized, she's had to be bound to the bed to receive shots.

For a diabetic whose doctor wants her to self-inject insulin every day, that's a serious problem. And even if da Silva, who lives alone, could overcome her fears, she still would have to contend with a case of carpal tunnel syndrome that makes it all but impossible for her to give herself insulin shots.

Diabetes afflicts nearly 24 million people in the United States, and with a steep rise in pediatric cases in recent years, that number could double by 2050. Yet as da Silva's story demonstrates, the numbers are only part of the problem. A group

of diseases stemming from the body's inability to produce or use insulin (a hormone that processes the glucose in foods), diabetes can pose serious health risks, such as amputation and vision impairment. Managing the disease requires addressing a combination of medical and lifestyle factors that can include depression, anxiety, socialization issues, sleep and sexual dysfunction, insulin resistance and problems with adherence to medication.

Busy primary care physicians typically have neither the time to keep current on all of the rapidly changing information about diabetes nor the behavioral expertise to help patients fight the disease day to day.

"You need a diabetes educator—a clinician with a strong knowledge base in health behavior studies who can look at things from the perspective of a patient," says TC alumna Melissa Scollan-Koliopoulos, Assistant Professor of Medicine at New Jersey Medical



School and Assistant Professor of Nursing at Rutgers, who works with Martha da Silva. "Every patient needs an individualized plan that covers the cognitive, psychosocial and physical aspects of managing the disease."

With Certified Diabetes Educators (CDEs) in short supply, Teachers College—at Scollan-Koliopoulos' suggestion—will launch a new master's Diabetes Education and Management program in the fall of 2011. The program—the first to confer a degree—will be open to a range of professionals, including nurses, pharmacists and dietitians.

"The American Association of Diabetes Educators, which helped us put this together, is a multidisciplinary organization," says Kathleen O'Connell, TC's Isabel Maitland Stewart Professor of Nursing Education, who will direct the new program. "They were particularly interested in a program that did not just train nurses or dietitians or one clinical group. Teachers College is perfect for that because we have multiple disciplines working together, ranging from health and nutrition to adult education."

TC's program, which grew out of a seed grant from the College's Provest Investment Fund and recently received a generous pledge from TC trustee and alumna Maria Schaefer (M.A., '03) through the Rowland and Sylvia Schaefer Family Foundation, will provide a formal career path in a field where, until now, many practitioners have had to forge their own.

"I had to find a mentor, and say, 'Hey, I want to do what you do,'" recalls Scollan-Koliopoulos, who at one point even



started her own self-study program. "I learned all I could and then started my own practice counseling people with diabetes." She marketed

her services to physicians until, eventually, she was hired by the Joslin Center at St. Barnabas Medical Center in Livingston, New Jersey. Others in the field have operated out of stand-alone facilities, run education groups in doctor's offices or even worked from churches or laundromats.

Certification is a particularly tough challenge for diabetes educators, who cannot be reimbursed by Medicare or third-party insurers without it. The National Certification Board of Diabetes Educators (NCBDE) certifies clinicians who have logged 1,000 hours working as a diabetes educator and who have passed an exam. The AADE offers certification in advanced diabetes management. Yet piecing together the required courses—and finding the time to take them—can be especially difficult.

PATIENT PERSPECTIVE Above: Da Silva and Scollan-Koliopoulos at UMDNJ-New Jersey Medical School in Newark. Left: TC's Kathleen O'Connell.

Diabetes afflicts nearly 24 million people in the United States, and with a steep rise in pediatric cases in recent years, that number could double by 2050. Yet the numbers are only part of the problem.



TC's program responds to both those challenges. Offered entirely online, the program will be accessible to clinicians all over the country.

"People who will be interested are very busy professionals," says consultant and TC Visiting Scholar Joyce Vergili, another former student of O'Connell's who helped to develop the program. "If they don't have to carve out time for commuting it will be more attractive to them." The program doesn't guarantee certification, but O'Connell has proposed to the NCBDDE that it count hours precepted under TC's aegis towards the organization's 1,000-hour requirement.

Above all, though, students will graduate from the program with a wealth of knowledge and the skills necessary to handle a very complicated job.

Scollan-Koliopoulos herself will teach a course on Behavior Change Strategies for Diabetes Prevention and Control, which will cover lifestyle factors that predict how a person will manage his or her own illness. Other courses include:

- Pathophysiology of Diabetes and its Complications, which will provide in-depth knowledge of why diabetes affects the body as it does. This is essential ground for diabetes educators, who must not only be able to advise their patients, but also interface with medical

THINKING IT THROUGH Da Silva (left) airs her concerns with Scollan-Koliopoulos and Gregory.

professionals. ("If your patient has vision problems, you'll end up in a conversation with an ophthalmologist," Vergili says. "So you have to know the whole structure and function of the eyeball.");

- Preventive and Therapeutic Interventions in Diabetes Management, which focuses on nutrition, exercise and other strategies for preventing pre-diabetes from becoming diabetes, and for preventing both acute and chronic complications in those who already have diabetes; and;
- Diabetes Self Management Education, which covers Medicare requirements necessary for reimbursement—essential, Vergili says, "so that you can actually make a living doing diabetes education."

As the TC program gears up for launch, Scollan-Koliopoulos is mentoring Carrie Gregory, a nurse at the New Jersey Medical School. Together they are helping Martha da Silva find a way to get her daily insulin.

"I know I need the injections, but for me, it's still a needle sticking in my body," da Silva says.

She hasn't solved the problem yet, but she's got some very good people in her corner. ■

Certification is a particularly tough challenge for diabetes educators, who cannot be reimbursed by Medicare or third-party insurers without it.

Motivation Scientists

A behavioral approach to helping children learn, from the gifted to those with language disorders



As the mother of a child diagnosed with autism, Maureen Marsigliano has shouldered her share of false hopes. There was the time a teacher who was watching her son, John, on the slide reported that he had said, "I go down."

"I took him to the playground every day for the next three weeks," Marsigliano recalls ruefully. "I never heard a word."

Last spring when John, a sweet-faced boy of five with wheat-colored hair, was placed in a special education class at the LINK Elementary School in Clarkstown, New York, he still wasn't making eye contact or responding to voices. He often flapped his hands or made repetitive sounds—a kind of white-noise behavior called stereotypy.

Soon, though, things began to change. John's teacher, Jackie Lewis, and assistant teacher, Helena Han, successfully engaged his attention with colorful pictures of animals and fairy-tale scenes, while offering a constant stream of praise ("Good job, buddy! Awesome! I'm so proud of you!") Then they began alternating the pictures every 10 seconds with images of letters and numbers. One morning this past December, John scanned different letters and numbers for five minutes, matched them with out-cuts and pointed to them when asked. No hand-flapping, no noises. Afterward, Han gave him a high-five and a bunch of colored tokens, which he could redeem for time with a picture book. Then she graphed his



MOTIVATION Students redeem chips for reading time. Top: Lewis and John Marsigliano.

progress on a chart and also her own performance in working with him.

Americans tend to think of teaching as an art, and of teachers as either born inspirers—Robin Williams in *Dead Poets Society*, coaxing a reticent student—or clueless drones, like Cheech and Chong's Sister Mary Elephant ("Class... class... Shut up, class!").

But there is a different view, rooted in the American pragmatism of Charles Peirce and William James.

"When teaching is treated as an art, good teaching is an accident," writes R. Douglas Greer in *Designing Teaching Strategies: An Applied Behavior Analysis Systems Approach* (Elsevier, 2002). "When teaching is treated as a science, good teaching can be replicated across many professionals in a reliable fashion."

Greer, Professor of Psychology and Education at TC and director of the program that has produced Jackie Lewis, Helena Han and legions of other special education teachers, has created a teaching system based on the ideas of his own late mentor, the behavioral psychologist B.F. Skinner. The guiding precept is that human beings learn to do things (or not do them) in response to "reinforcers"—food, encouragement and other stimuli.

Language, which Greer believes is "how humans do the world," is no exception. As he describes it, a baby comes out of the womb already familiar with the sound of her mother's voice. While she nurses, she looks up at her mother's face, and her mother coos at her. Face and voice become reinforced by food, laying the ground for the child to respond to other faces and voices. She imitates sounds her mother makes and discovers that doing so wins her more attention. Making sounds is reinforced by attention. She discovers that certain sounds elicit particular responses. And on it goes—a massive game of bait and switch, in which increasingly sophisticated language behaviors develop because they are reinforced by other events.

"Approval itself is a learned reinforcer," Greer said in December, tilting back in a chair in his office in TC's



PROGRESS REPORT Maureen Marsigliano meets with teachers Lewis and Han.

Thomdike Hall. Tall and lean at 68, with a trace of Tennessee drawl, he still runs marathons. "If I say, 'Nice work'—unless you've had a history of conditioning for that to be a reinforcer—it's not going to make you try to do a better job. So we start kids with edibles or tickles. Then we move to, say, tokens that can be exchanged for edibles, and we pair those tokens with approval and praise, so that kids will pay attention and you can actually instruct them."

Greer did not invent this approach—which is called applied behavior analysis—but he has pioneered its application for educating children. His theories come from practice, rather than the other way around. Through more than 40 years of observing children in classrooms and residential facilities, he has identified key "cusps," or stages of pre-verbal development that children progress through on the way to becoming fully verbal, interactive human beings. The ability to imitate actions ("see-do") is a cusp; the ability to actually learn by observing others is another.

"When teaching is treated as a science, good teaching can be replicated across many professionals in a reliable fashion."

Attainment of each cusp opens up new possibilities for learning.

Working at schools he founded in Yonkers, Westchester, England and Ireland, as well as at public schools in Rockland County and Morristown, New Jersey, Greer and his students have created scores of reinforcement-based interventions, or "protocols," to induce children with language deficits to reach

cusps. One example is rapid motor imitation, a Simon Says-like series of gestures, ending in the echoing of a sound or word, with which Greer has induced autistic children to speak their first words. Another is the "yoked contingency" game board, in which two students can move their pieces forward only when they learn to perform a task or solve a problem by watching each other.

All of these strategies are part of Greer's method, which he calls CABAS (for Comprehensive Application of Behavior Analysis to Schooling). CABAS—which is trademarked, not for profit-making purposes, but to ensure that those working under its banner are fully proficient in its use—is constantly being revised and expanded by Greer's students.

"Other centers that work with kids with autism don't have exposure to the research base that we have," says Alison Corwin, who is completing her Ph.D. this spring. "Our ideas are always evolving because the practitioners are the students." Corwin calls it "an environment of constant learning" about what motivates children of all kinds to learn under all kinds of conditions.

From the get-go, master's degree candidates in Greer's program work in classrooms full-time under the supervision of his current or former Ph.D. students, adapting existing protocols or developing new ones to meet children's needs. For example, Jackie Lewis, who is working on



SEE, DO, DOCUMENT Greer boasts that his schools generate 3.2 million datapoints per month.

her Ph.D., and Helena Han, a second year master's student, intend to publish a paper on how children develop the ability to match two-dimensional stimuli to printed targets. The paper confirms that the protocol they used with John Marsigliano will help students to attend to table-top stimuli and thus meet learning objectives at a faster rate—and also

that two-dimensional print stimuli can be used as conditioned reinforcement for the much broader behavior of observing responses.

Above all, Greer's students learn to read and apply research literature and use graphs and research findings to understand children's progress and determine the differentiated instruction that works for each kid. (Greer likes to boast that the CABAS schools generate 3.2 million data points per month, and that children taught through the system learn at four to seven times the rate of their peers.) These skills also serve administrators who have graduated from the program. For example, the decision to put John in Jackie Lewis's classroom was overseen by Yásmín Helou-Carré, a TC alumna who is in charge of special education placements for the district-based programs in the Rockland County BOCES school system. She, Lewis and Han all worked off the CABAS pyramid chart that showed the cusps John had attained, beginning with conditioning for faces and voices.

To Maureen Marsigliano, the idea of employing a behavioral approach with children was, at first, confusing. "It's not how children are usually taught, at least judging by our experience with John's older brother, who is typically developing," she says. "I had people saying, be wary of that, the child might only do the instruction with the teacher. I was concerned about that."



Her reaction is a common one.

"When I first started, almost everyone would come into my classrooms with an anti-behavioral stance—'this is bad, this is aversive punishment,'" says Greer, a former musician whose early studies demonstrated that children were more likely to prefer listening to classical music if they were praised for doing so. "Of course, they changed their tune when we made them count the number of approvals and disapprovals they expressed during their teaching with the goal of eliminating the disapprovals."

But the more important point, Greer and his acolytes argue, is that their methods are all about personalized teaching.

"Everyone likes to talk about 'child-centered,' but the only way to do that is to measure every response of the kid and how well the teacher is doing every day," Greer says. "We do moment-to-moment, curriculum-based instruction, based on scientific measurement, and that lets us provide differentiated instruction, for kids of all abilities."

THE POWER OF PRAISE Lewis and Han constantly encourage their students.

The ultimate goal of Greer's methods is to enable kids to make choices, adapt to situations, improvise and think creatively. In special education classrooms, that can mean something as basic as learning to play without prompting from an adult. For kids in mainstream classrooms in Montistown, New Jersey, it includes working at their own pace and tracking their own progress. Regardless, the essence of the approach is to make what is learned "generalizable." Thus a CABAS teacher working on letter recognition will show students A's in different colors, sizes and type-faces so that they come to understand "A" as something broader than any single representation.

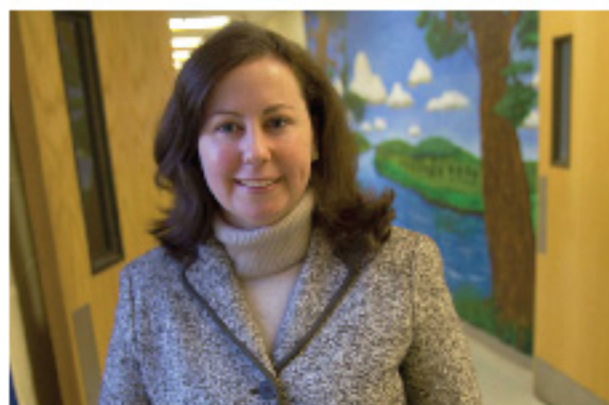
Greer believes that the ability to acquire language comes to full flower when children attain the most important cusp of all: Naming—the ability to acquire new vocabulary without being directly instructed on the meaning

"Everyone likes to talk about 'child-centered,' but the only way to do that is to measure every response of the kid and how well the teacher is doing every day."

of each word, but instead simply by hearing others use language. In typically developing children, Naming occurs somewhere around age three, and it results in an explosion of language acquisition that takes a child from just a few words to many, many thousands in a very short space of time—and ultimately, to the more than 86,000 words deemed necessary for success in school. Before Naming, Greer says, children are in the state described in Marquez's *One Hundred Years of Solitude*, when "the world was so new that there were no names for many things, so all the people could do was point." After Naming, the possibilities for growth and understanding are limitless.

For her part, Maureen Marsigliano will settle for more incremental progress for her son, John—at least for now.

"It's slow, but he's following verbal direction more from me, his dad and his brother—we don't have to say things ten times anymore," she says. "There's a spark there that wasn't there before. Jackie and Helena and Yásmín have a



MATCHMAKER TC alumna Yasmin Helou-Carè directs special education placement for Rockland County BOCES.

window in to John's mind that I don't have. And they love him like their own kids—he comes home smelling of perfume every day, and when he gets on the bus in the morning, he's smiling and not looking back. As a mother, that's what you want." 📱

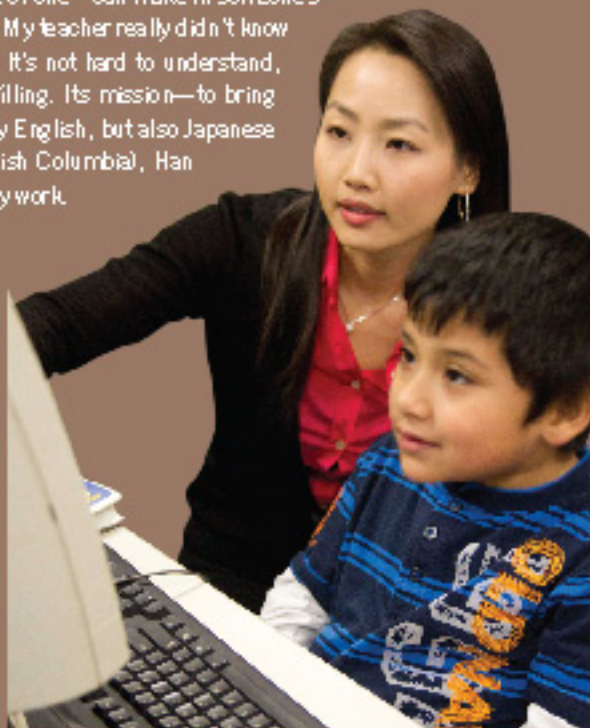
To see the CABAS method in action, visit www.tc.edu/news/7881

STRATEGIC SCIENCE, WITH A PASSION

Growing up in Korea, Helena Han had teachers whom she admired. But it wasn't until she moved to Vancouver as teenager that she understood the difference that a good teacher—or, in her case, the absence of one—can make in someone's life. "I was learning a foreign language, and struggling with my social skills. My teacher really didn't know what to do with me. I ended up requesting a transfer out of the district." It's not hard to understand, then, why Han has found the CABAS program at Teachers College so fulfilling. Its mission—to bring language to those lacking it—is one that even now, having mastered not only English, but also Japanese (part of her double major, along with psychology, at the University of British Columbia), Han feels passionately about. But even more important is that its methods really work.

"We have the tools that are research-based and shown to be effective for many children through numerous replicated studies, and we have the skills and the hours of training to apply those tools that children will learn," she says. "And as they have grown, I have grown to be able to help them more. I am stronger, more confident, more data-driven—and most importantly, I'm not just a technician, but, as Dr. Greer says, a strategic scientist."

The program has left her little time for social life, and as she enters the CABAS Ph.D. program at TC, the challenge will only get steeper. But the payoff has been enormous. "Seeing students, who did not say a word when they walked into the classroom in the beginning of the school year, talk now as if they have always been talking touches my heart moment to moment."



Teaching to the Task

Everyday relevance is the key to making non-native speakers fluent in Chinese

You're learning Mandarin Chinese as a second language. Your assignment: read a schedule in order to figure out the correct departure and arrival times for the train from Beijing North to Xiaoshuiyu.

If you were dropped onto a rail platform in China with these marching orders, you might feel overwhelmed. But within the safe confines of a classroom, this approach, known as task-based language teaching (TBLT), will help you learn and retain Chinese, because it compels you to solve a specific problem in a real-world context.

Obvious though it might seem, that logic stands in sharp contrast to the rote memorization that has been used to teach many languages—including Chinese, with its daunting array of tones and characters that have no counterpart in English or other tongues.

At Teachers College, however, TBLT is just one of many learner-centric strategies employed by the College's unique, year-long certificate program in TCSOL—the Teaching of Chinese to Speakers of Other Languages.

"Learners naturally focus on content words, or words that are meaning-driven, when processing input in the target language," says the program's co-director, Zhao Hong Han, Associate Professor of Language and Education. "So

when we talk about pedagogy, we mean providing conditions that will facilitate learners' own cognitive tendency as well as counter it so that they are able to develop a balanced linguistic competence."

Backed by a grant from TC's Provost's Investment Fund, Han, whose expertise is in second language acquisition (SLA), founded the program three years ago in response to both a



EXPERIENCE IS THE BEST TEACHER Solving a Chinese train schedule and other real-life challenges makes language stick.

major opportunity and a pervasive problem. The opportunity: the rise of China as a global economic power, coupled with the fact that Mandarin was already the world's most commonly spoken language. Today 30 million people worldwide speak Chinese as a second language, and in the United States more than 1,200 elementary and secondary schools are incorporating Chinese language learning into their curricula. In New York City alone, 80 schools and counting now offer Chinese, with some programs beginning in kindergarten. In the United States as a whole, Chinese is catching up as a major foreign language second only to Spanish.

The problem TC's program seeks to address is one that extends far beyond Chinese: of all post-pubescent second language learners, only five percent ever attain full fluency in the language they are seeking to acquire. The rest experience a kind of plateau effect, called fossilization, which leaves them with an approximated version of the target language that often includes grammatical errors.

To get at this issue, the curriculum in TC's TCSOL program includes a core course called Acquisition, Pedagogy and Assessment (APA), which stresses the interrelation between what students are learning, how they are being taught and how their progress is being gauged.

For example, students learn to teach using TBLT and, at the same time, to evaluate *their* students' response to that particular method. The key is that assessment must be conducted in real time, in the classroom, while instruction is being administered.

"Traditional, post-hoc assessment often only tells you that a student got a right or wrong answer—not why they got that answer," Han says. "That's especially true with language acquisition, where you need to see learning in action. So the APA course focuses on what happens in class, and on increasing teachers' sensitivity to students and to what is happening in the learning process."

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OUT OF CHARACTER More than 1,200 U.S. elementary and secondary schools now offer Chinese language learning. An 8th grader at the Hackley School in Tarrytown, New York, grapples with Chinese.

One particularly important indicator of understanding is a student's output production driven by a knowledge system known as "interlanguage"—a term proposed by one of Han's mentors, Larry Selinker, one of the founders and original contributors to the research field of second language acquisition. Interlanguage describes a learner's emerging linguistic system, or approximation of target language. During a TCSOL class session this past fall, Han explained the context-dependent nature of interlanguage to her students by relating an anecdote about a native speaker of Thai learning English. In certain contexts, such as talking to friends, he used a made-up word, "quiblogui," in



place of the word “philosophy.” Such variations in behavior, she said, provide a window on to students’ “internally created discourse domain.”

“But ‘quilogou’ isn’t a word,” said one young woman.

No, Han replied, but it is a placeholder for one—both a valid step toward acquiring language and an indicator of where the learner’s knowledge system is breaking down. As such, it presents the sensitive teacher with a teachable moment, but also a choice to make about whether to provide explicit or implicit corrective feedback.

“You have to decide what the underlying level of understanding is,” Han says. “If there is a true misunderstanding about meaning or form, then you would probably make an overt correction. But if your sense is that you’re merely witnessing a kind of internal shorthand, you might simply repeat back the incorrect usage until the student recognizes the error.”

Beyond the TCSOL program itself, Teachers College is becoming a focal point for advancing learner-centered Chinese language acquisition. This past fall, the College hosted the first major international conference to bring together TCSOL practitioners, SLA researchers, educa-

IMPACT TEACHING TC student Junhua Jiang teaches Chinese to fourth graders who are heritage speakers, meaning one or both of their parents are native Chinese speakers. “They like to move around a lot,” Jiang says of her students—so she posts vocabulary words on the board and encourages kids to tap them with a flyswatter when they hear her call the words out in class.

tion publishers and other stakeholders for the specific purpose of exploring Chinese language acquisition from the learner’s point of view. The event, organized under Han’s direction by four doctoral students, attracted nearly 200 attendees from locales as diverse as South Africa, Hong Kong, Singapore, Kenya, New Zealand, the United Kingdom, Saudi Arabia and, of course, China.

Meanwhile, for those working with Han at TC—particularly students who have seen Chinese taught elsewhere—focusing on the learner can be a revelation.

“In my experience, Chinese is typically taught with a lecture class to introduce the grammatical structures, and drill classes to further practice those structures,” says Pen-Pen Chen, a recent alumna of the program who previously taught English and Chinese at Beijing

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Sport University in China. "That's very different from teaching English. But at TC we've learned that the more neuro-networks and connections you have around a certain activity and the more proceduralized the learning process is, the stronger the memory in the brain becomes—and the more likely learners are to be able to access and use it."

Chen, who now teaches Chinese both at TC and to staff at the *New York Times*, says that one of the most rewarding aspects of her work is hearing about students' "language victories." One student told her that recently, while riding the Chinatown bus, he discovered he could understand the driver as he counted all the riders. "I knew there were 25 adults and two children," the student reported.



CELEBRATING THEIR LANGUAGE VICTORIES Above: TCSOL program alumna Chen (third from right) and her students enjoy Dim Sum in New York City. Left: Han champions learner-centric methodology.

"The language has become a part of their lives," says Chen. "So when a light bulb turns on for them, they get so excited and feel an enormous sense of accomplishment—as they should." 📖

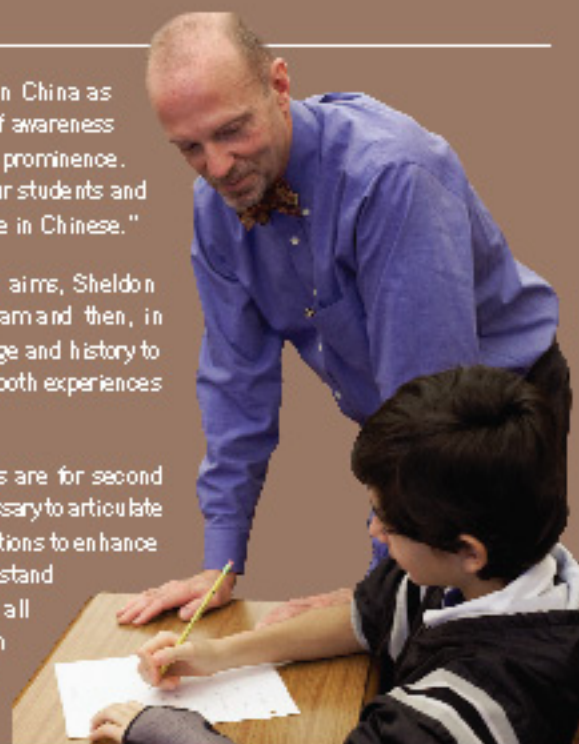
To see an interview with Professor Han and others, visit www.tc.edu/news/7882.

NON-NATIVE SPEAKER

When Roy Sheldon returned to the United States after an 11-year stint in China as an executive for a multinational company, he was surprised by the lack of awareness of Asian culture, history and influence—especially China's growing prominence. "China will be the leading economy well before 2050," Sheldon says. "Our students and businesspeople need to understand its history and be able to communicate in Chinese."

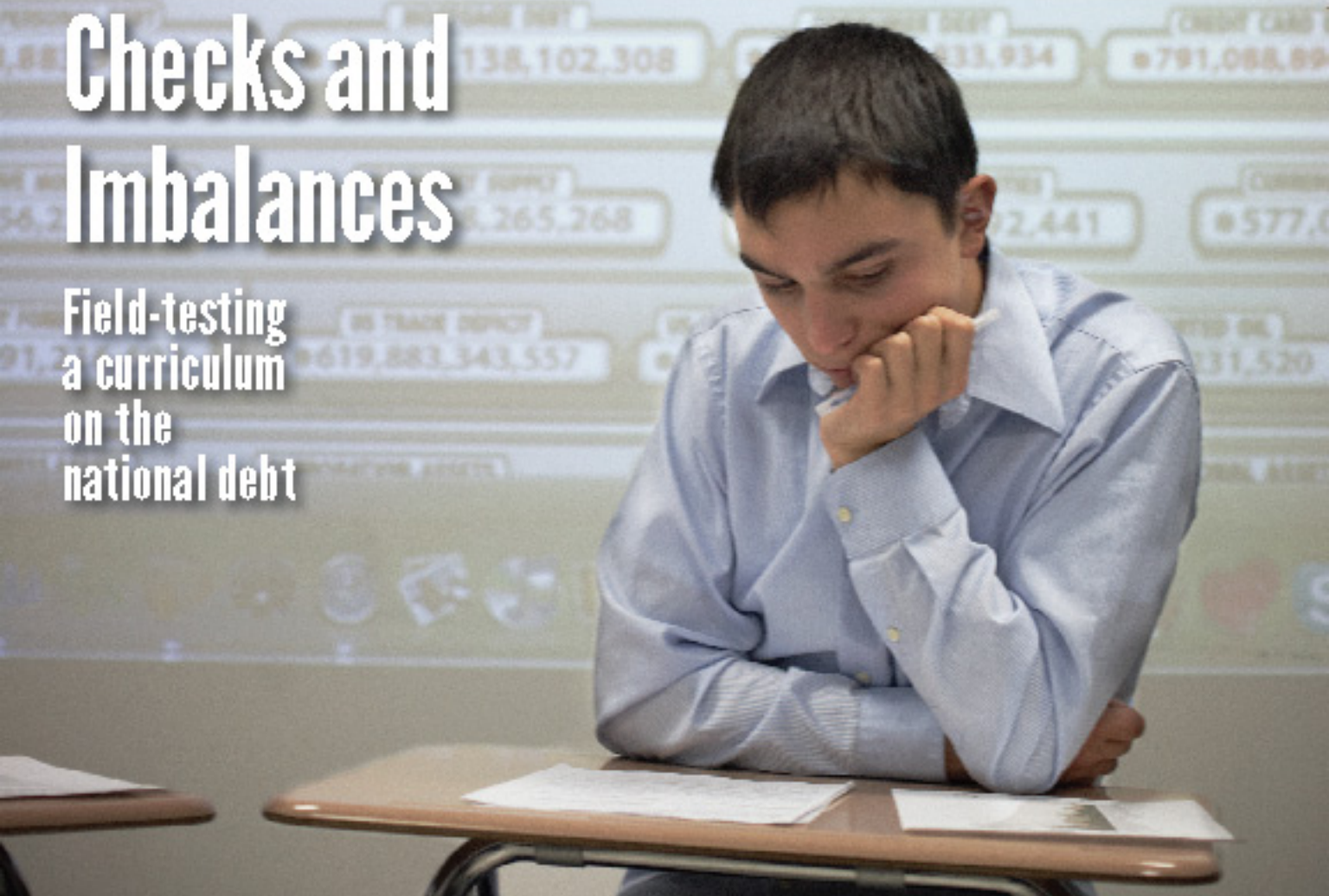
After working with business leaders and local schools to advance those aims, Sheldon enrolled first in Columbia's Master of Regional Studies (East Asia) program and then, in 2008, in TC's TCSOL certificate program. Today, teaching Chinese language and history to middle-schoolers at MacKie School in Tarrytown, New York, Sheldon says both experiences served him well.

"As a non-native speaker, I know what the opportunities and challenges are for second language students. The TCSOL curriculum provided me with the tools necessary to articulate these to the students and to implement tasks and authentic language situations to enhance their learning experience," he says. The ultimate payoff: "If you understand the language, you can get a deeper understanding of what the culture is all about and have the ability work more effectively and collaboratively with your counterparts outside of the United States, no matter what career is chosen by the student."



Checks and Imbalances

Field-testing a curriculum on the national debt



Thirty-eight minutes into Brad Siegel's economics class in December at Scotch Plains-Fanwood High School in central New Jersey, the U.S. national debt had grown by \$37 million.

The online federal debt clock (www.usdebtclock.org) was ticking away on the suburban New Jersey classroom wall as the students, clustered in small groups, tried to make sense of the \$14 trillion in red ink that's helping keep the U.S. economy afloat, financing two wars and saddling their generation with a bill that it will pay down for decades.

"There's a lot behind these numbers," Siegel, who is social studies supervisor at Scotch Plains-Fanwood and also a doctoral student at Teachers College, warned the class. "You need to question and challenge it all."

Over the next hour, Siegel prodded the students to consider whom the United States owes, whether its Debt-to-Gross Domestic Product ratio is in line with that of other nations and, above all, what might be done to improve things in the future.

"I'm interested in learning more about how it happened," said student Jake Merlow. "It doesn't look too good."

The lesson, which Siegel himself developed, is among 25 that a Teachers College team created for "Understanding

Fiscal Responsibility: A Curriculum for Teaching about the Federal Budget, National Debt, and Budget Deficit," a three-year, \$2.45 million project funded in 2009 by the Peter G. Peterson Foundation. High schools in Ohio, Minnesota, Texas, New Jersey and New York City are





CONTEMPLATING THE COSTS Siegel (above, standing) puts an economics class (left and opposite page) through its paces at Scotch Plains-Fanwood High School in New Jersey.

pilot-testing the lessons, even as the TC team develops 25 additional ones. Beginning next year, 100,000 copies of the complete curriculum will be given away to all 40,000 public and private high schools across the nation. Similar course material will be adapted for use at the college level and with adults.

"There's one question the whole curriculum is tied around: How should we address our nation's fiscal challenges today, and in the future, in a manner that is consistent with our values and traditions?" says Anand R. Mami, Assistant Professor of Social Studies and Education at TC, and principal investigator for the "Understanding Fiscal Responsibility" project. "Because questions of debt and deficit are not new for us. Several of the lessons talk about our nation's debt in the eighteenth, nineteenth and twentieth centuries."

Mami, a former high school teacher in northern California who has taught at TC since 2003, had initially sought funding to create curricula about financial literacy. At the urging of the Peterson Foundation, which had funded a film about debt called *LOUSA*, he expanded his vision to include a multi-disciplinary curriculum that incorporates mathematics and world and American history, as well as economics.

In creating "Understanding Fiscal Responsibility," Mami has assembled a multidisciplinary team that includes Margaret Crocco, Professor and Coordinator of the College's Social Studies and Education program; William Gaudelli, an associate professor in the program; Erica Walker, Associate Professor of Mathematics and Education; and Thomas Hatch, Associate Professor of Education and Co-Director of TC's National Center for Restructuring Education, Schools and Teaching (NCREST). Fifteen doctoral students, including Siegel, are contributing to the in-depth lessons. EdLab, a creative services unit within The Gottesman Libraries at Teachers College, is handling distribution of the curriculum, as well as the project's Web site (www.understandingfiscalresponsibility.org) where the curriculum can be downloaded free of charge, and where contributors blog about the latest federal budget and national debt-related news. Hatch and Meesuk Ahn, a staff member at NCREST, are leading an evaluation of the project's impact.

Mami collaborated with Crocco on "Teaching *The Lovers*: A Curriculum for Democratic Dialogue and Civic Engagement," a landmark project keyed to the Spike Lee documentary *When the Lovers Broke*, which explored issues

"There's one question the whole curriculum is tied around: How should we address our nation's fiscal challenges today, and in the future, in a manner that is consistent with our values and traditions?"



WHILE THE CLOCK TICKS "Understanding Fiscal Responsibility" asks students to grapple with real-world scenarios, such as raising the eligibility age for Social Security to 70.

raised by Hurricane Katrina and its aftermath. Lessons in "Understanding Financial Responsibility" build on models Crocco developed for exploring controversial issues, including the use of "democratic dialogues" designed to help students better understand opposing viewpoints and, ultimately, to articulate their own positions more clearly.

"Just like the *Zinn* project, there's so much room for debate," says Crocco, who also chairs TC's Department of Arts and Humanities. "In both cases, responses to the questions will ultimately be rooted in each individual's values and philosophy about government responsibility and who we want to be as a nation."

"Understanding Fiscal Responsibility," which is aligned with national standards in the disciplines it touches upon, takes no position on the federal budget, national debt and budget deficit. Instead, the inquiry-based lessons aim both to draw students in to the complexities of these issues and

to encourage them to care about and take a stand on public policy issues.

In Siegel's economics lessons at Scotch Plains-Fanwood, for example, exercises that develop analytical skills help students apply concepts they have mastered toward addressing real-world scenarios.

In the curriculum for civics classes, one exercise focuses on Social Security, one of the federal budget's mandatory big-ticket items. The program will face scrutiny as the Baby Boomers retire and the tax base diminishes as fewer younger people replace them in the workforce.

Proposed solutions to the problem have tended to provoke strong feelings—particularly a blue-ribbon panel's recent call to raise the eligibility age for Social Security to 70. The curriculum features a series of questions, in what's called scaffolding, that take students from concrete facts to higher levels of analysis and creativity.

"Understanding Fiscal Responsibility" asks students to read an article on the proposal and then answer some basic questions about the consequences of raising the eligibility age; to compare the views of two economists who have differing opinions; to describe how a family led by a 65-year-old might be affected if the eligibility age were raised to 70; and, ultimately, to describe how they would strengthen Social Security if they were elected president.

"In many respects, these are exercises in values clarification," said Crocco. "We put the issues into a national context, and provide students and teachers with an understanding of the ramifications of choices we might want to make."

Marti has also tapped educators from local school districts for their ideas. TC doctoral student Chris Zublionis, Director of Social Studies for the North Shore Schools in the Long Island hamlet of Sea Cliff and a contributor to the *Zinn* project, has worked on several lessons for "Understanding Fiscal Responsibility," including one fo-

"Responses to the questions will ultimately be rooted in each individual's values and philosophy about government responsibility and who we want to be as a nation."

cused on the tradeoffs the government makes in setting its budget priorities. The lesson incorporates a simulation that allows students to apportion a finite set of resources among the military, education and health care. Students are also prompted to look at the tradeoffs they make in budgeting their own savings and time.

Because a study of 30 high school classrooms and a review of high-school textbooks by the TC team found few lessons on the federal budget, national debt and the deficit, "Understanding Fiscal Responsibility" includes lessons that have specific application in mathematics, civics, economics, U.S. history and world history.

One lesson, for use in Algebra II or pre-calculus classes, employs demographic shifts, Social Security and the federal budget to illustrate concepts such as exponential change, logistical change, functions, trend lines and graphical analysis.



CURRICULAR CAPTAIN Mari is leading the UFR project.

U.S. History teachers can use the lesson on Medicare and LBJ's Great Society to give students experience analyzing primary sources. And via the lesson "Foreign Debt and International Power Relations," students in world history courses can develop a greater understanding of the complex power relationships between lender nations and the countries that borrow from them.

"We do not tell the kids what to think about the federal deficit, national debt or the federal budget process," Mari says. "We present multiple approaches and show how the issues may affect them. Ultimately, civic engagement is the basis of the whole project. Because it's not like natural law is making the federal budget happen. Human actors make policy. So we hope they become actively involved." ■

To see the curriculum in action, visit www.tc.edu/news/7884.

BETTER THAN POWER POINT

Louise Kuklis, an instructor in TC's Program in Social Studies and Education who retired in 2009 from Edgemont High in Scarsdale, New York, considers engaging students her life's work. At Edgemont, Kuklis found that students' eyes glazed over when they read economics textbooks, so she developed her own lessons, creating simulations and piecing together information from the Council for Economic Education and the Foundation for Teaching Economics.

When Kuklis learned about the "Understanding Fiscal Responsibility" project from her son, Timothy, a social studies teacher at New Rochelle High School and TC alumnus whose advisor was Mari, she decided to get involved. Kuklis collaborated with the TC team on a simulation of the federal budget appropriation process. Over the course of two 45-minute periods, the teacher, acting as the President, submits a national budget. The simulation involves lobbying by various interest groups and reveals what happens when the members of Congress cut deals to assure passage. There are roles for legislators serving on agriculture and defense subcommittees, lobbyists, journalists and even private citizens.

"Kids learn by doing," says Kuklis, now teaching an online course in economics instruction at TC. "It's much better than having the teacher drone on and show endless Power Point presentations."



Numbers Games

New software harnesses cognitive research to boost the everyday math abilities of very young children



One day this past fall in the basement cafeteria of P.S. 76 in Harlem, Steven, a preschooler, was testing out a software program called MathemAntics.

The screen displayed a farm scene, with goats scattered across a barnyard.

"How many goats are there?" the program's computerized voice asked.

"One, two, three, four, five," Steven counted, pointing his finger. To verify his answer, he clicked the number five on the number line at the top of the screen. The voice told him he was correct.

Now nine yellow chicks appeared on the screen. This time Steven's answer—11—was wrong. "Nice try, but that's too many," the computer told him.



TAKING STOCK MathemAntics asks users to count farm animals. Top: Yoon and Steven at work.

Esther Yoon, a first-year TC doctoral student in Cognitive Studies, pointed to another button. "Try the ten box," she said.

Steven moved the cursor and clicked on the "10 box" button, and the scattered chicks lined up in a row, each in a box, with one empty box left over. The visual prompt seemed to help; this time, Steven gave the right answer.

"How do you know?" Yoon asked. "How did you get that number?"

"I counted," Steven said.

MathemAntics, which is being developed by Educational Network Services (ENS), an educational software developer in Massachusetts, is based on the research of Herbert Ginsburg, TC's Jacob H. Schiff Foundation

Professor of Psychology and Education. Backed by a \$1.4 million grant from the Institute of Educational Studies, Ginsburg and seven of his doctoral students (including Yoon) are evaluating the program at P.S. 76 and two other Harlem schools. Based on their feedback, EINS, over the next two years, will develop software for children ages three through third grade.

Building on the work of Jean Piaget and other cognitive psychologists, Ginsburg has devoted his career to debunking the common American misconception that—*notwithstanding 25 years of research and the demonstrated capability of children in Singapore, Finland and elsewhere*—very young children are unable to think mathematically. He has spent hundreds of hours interviewing and videotaping toddlers and preschoolers in the classroom, capturing examples of their “everyday mathematical thinking”—awareness of shape, number and other concepts employed in play, eating and other informal situations.

“What baby would not know the difference between a lot of food and a little food?” Ginsburg asked an audience at TC’s Academic Festival in April 2010. “Or a lot of attention versus a little attention?”

Technology holds enormous potential to harness such abilities, though Ginsburg says that many flashy educational games fail to make use of what’s known about how children of different ages think. In contrast, MathemAntics, whose programmers received the first grant to develop the precursor to the current software, “gives us an opportunity to see what’s in kids’ minds as they work on both informal and formal mathematical problems,” says Ginsburg. That’s something that a score on an annual achievement test—which is based almost entirely on whether an answer is right or wrong—can’t hope to touch. And by gathering information on what young children know and how they know it, MathemAntics could become the foundation for an ever-expanding library of knowledge that could help generations of future learners learn math.



THE MAC-NIFICENT SEVEN Ginsburg’s doctoral student research team at TC.

Once the grant is completed, MathemAntics will feature six different “environments,” all incorporating educational goals and standards for early math learning established by the National Governors Association Center for Best Practices. The six cover the concepts of “how many”—the one Steven was working with—which includes counting, cardinality and subitizing (the ability to instantly recognize a small number of items, without counting); addition and subtraction; equivalence; symbolism; using a base-10 system to understand column addition; multiplication; and negative numbers. Each area is loosely geared to a different age level, yet allows for a wide range in comprehension and proficiency.

Each area also is the specific province of one of Ginsburg’s seven doctoral students—Yoon, for example, is in charge of the negative number environment—but the

**“What baby would not know the difference between a lot of food and a little food?”
Or a lot of attention versus a little attention?”**



COACHING THAT COUNTS Above: Yoon guides Steven on the MathemAntics software. Left: The software developers from Educational Network Services meet with Ginsburg's class at TC.

team's work on MathemAntics is ultimately highly collaborative. The group—the “Mas-nificent Seven,” as Ginsburg called them at a recent team meeting—meets once a week to exchange notes and discuss what they’ve witnessed during data collection. Their work is receiving generous support from the Cleveland H. Dodge Foundation. The process of revising the software is continuous, with video and audio recordings of the sessions sent weekly to the developers at ENS.

“It’s a fantastic back-and-forth,” says Ginsburg of the partnership. “If we send something to be fixed, it’s often done by the following Monday.”

The process differs from the way most education software is designed, he says, because the software and guiding theory are under constant revision as a result of observed practice. “This program is built on children’s needs and abilities as we have observed them in real world settings,” he says. “The designers have an extraordinary understanding of their end users.”

Ginsburg and his students constantly exchange ideas online with ENS. This past December, the developers made the trip down from Massachusetts for a meeting at TC in which all issues about the project were put on the table.

TC doctoral student Kara Carpenter reported that after pressing the 10 box, two of her second graders debated whether or not the animals would fit in the boxes. She thought that the slow speed of the application allowed them the necessary time to think and discuss.

After another doctoral student, Samantha Creighan, suggested revising the program to display up to 100 animals, a software developer enthused that, because this would mean changing the scale of the animals, children would learn that the size of an item has no relevance when it comes to counting quantity.

The exchange typified the discussion. Even the most mundane logistical concerns were parsed and refracted through the prism of the larger question: Are students learning? And if so, why?

By gathering information on what young children know and how they know it, MathemAntics could become the foundation for an ever-expanding library of knowledge that could help generations of future learners learn math.

"We could make a kid learn that seven plus three equals ten by having them repeat it a million times, but that wouldn't necessarily mean that they understood the underlying concept," says Ken Schroder, EINS' computer science programmer.

In addition to recording a child's strategies for problem-solving, MathemAntics is designed to create reports that give teachers and parents a fuller understanding of the child's thought process. It can "speak" to users in multiple languages. And by also requiring children to read questions, it lays the ground for reading skills, as well.

The program also has the touch of magic that computer activities and games bring to any subject, performing functions that could never be replicated in real life. "When you're placing six large elephants into six small boxes, the elephants have to shrink," Ginsburg says. "That's a lot of fun."

The preliminary results—which should please teachers—show that MathemAntics can help younger children learn a lot more math. Back in the cafeteria of P.S. 76, after a handful of trials with the 10 box, Steven was no longer counting to determine the number of animals on the screen. Instead, he simply pressed the 10 box and declared his answers based on how many boxes weren't filled.

"After understanding and comprehending the meaning of the 10 box, within five or six minutes, he started using a completely different strategy," Yoon said afterwards.



DEBUNKING MATH MYTHS Ginsburg has shown kids can do the math.

In fact, by the end of his session, Steven was working easily with the base-10 concept, using the 10 box to evaluate numbers in the teens. He was comfortable substituting small numbers of animals on the screen and counting from 10.

"Why do you like using the boxes?" Yoon asked.

"Because it's more better," he said. 🐘

For more on MathemAntics, visit www.tc.edu/news/7886.

SEEING ONLY THE PLUSSES

After spending six years teaching third and fourth graders in the Bay area, Esther Yoon knew young children have mathematical ability. She also fervently wished someone could do more to develop it in the earlier grades. Yoon enrolled in a master's degree program in cognitive development at Stanford, and there she learned of the work of Herbert Ginsburg, who is now her doctoral advisor at TC. "It's a dream to work on curriculum development with Herb, who is so phenomenally respected in our field," says Yoon, whose participation on the MathemAntics team is funded by the Cleveland H. Dodge Foundation.

The team is taking some risks. MathemAntics is making negative numbers, which are usually introduced in the fourth grade, a focus for third graders—but Yoon (who is heading up creation of the learning environment for that topic) is uniformly positive about the effort. "Most software is built around a theme or story," she says. "It's great to be designing software that is based on what the child needs to learn math."



Getting in Their Kitchen

A new curriculum prompts kids to think about the consequences of diet and exercise



When fifth graders from P.S. 161 arrived at TC's Earth Friends Room for a hands-on nutrition class this past fall, they found all the expected accoutrements: vegetables to slice, recipes to follow, rice simmering in a pot. More perplexing on a table at the front of the room, was a plastic cup with a line drawn near the top and a hole poked in the bottom, flanked by a pitcher of purple water.

Kathleen Porter, a research and outreach coordinator, explained that the colored water represented "energy in" (food), while the cup with the hole represented "energy out"—the energy we use to keep our body functioning and for physical activity. She recruited two student volun-

teers to pour water into the cup while she plugged the hole with her finger.

"Sometimes I'm going to take my finger away, sometimes I'm going to keep my finger there," she explained.

Porter told the students to imagine they had just done a strenuous activity; she pulled away her finger and the water level sank below the line. The students had to restore balance

by pouring water to put "energy in." Then she told them to imagine they'd just eaten a big Thanksgiving dinner and were now sitting around, stuffed to the gills. As the students poured in the water—representing turkey with all the trimmings—she plugged the hole in the cup, and the water rose above the line, spilling out on the table.



The point of the exercise was clear: Too much energy in from food, without matching energy out from body functioning and exercise, and one's cup runneth over—and not in a healthy way. The students were learning the concept of energy balance.

Energy balance is central to *Choice, Control & Change (C3)*, a curriculum developed by Isobel Contento, TC's Mary Swartz Rose Professor of Nutrition Education, and Pamela Koch, Adjunct Associate Professor of Nutrition Education, together with Angela Calabrese Barton of Michigan State University. *C3* uses science inquiry investigations to empower students to make positive changes in their diet and physical activity. It includes 10 detailed lessons that deal with the fat and sugar content of popular snacks and beverages, food and activity environments, diabetes education and other fundamental nutrition concepts.

Like the Earth Friends Room itself—which a century ago served as the cafeteria for what was then TC's Horace Mann School—*C3* continues a proud tradition of nutrition education at the College. "One hundred years ago, Mary Swartz Rose was doing nutrition with children here and making sure they gained enough weight to thrive," Koch says.

Rose, who launched nutrition education as a discipline with TC colleague Henry Sherman, presided over the first of three major eras of TC leadership in the field. The second got underway during the mid-1970s, under Joan Dye Gussow, Contento's predecessor and now Mary Swartz Rose Professor Emeritus.

"Joan was one of the first people to talk about eating locally and growing your own food," Contento says. Her work inspired the creation of the Earth Friends Room, where children learn about "food choices that are good for them and good for the planet," says Koch.

More recently, nutrition education at TC has taken on a new focus that reflects Contento's core area of expertise: influencing the factors, both internal and external, that shape individual behaviors around food and fitness.



POSITIVE ENERGY Porter instructs students in TC's Earth Friends room on maintaining energy balance.

Seeking ways to disseminate, beyond the Earth Friends Room, the ideas that children were learning, Contento, Calabrese-Barton and Koch received funding in 1997 from the National Center for Research Resources to create Linking Food and the Environment (LiFE), a series of curriculum guides published by the National Gardening Association. *Growing Food* (2007) teaches children in grades four to six about food webs, agriculture and the ecological impact of food choices. The lessons are accompanied by a series of detailed botanical drawings, including one that demystifies the peanut plant. *From the Table & Beyond* (2008) encourages fifth and sixth graders to look critically at what happens to food during its journey to the consumer, including processing and packaging.

C3, developed with another five-year, \$1.5 million grant from the same funder and published this past year,

Too much energy in from food, without matching energy out from body functioning and exercise, and one's cup runneth over.



teaches students in grades six through eight about making lifestyle choices.

"Children at this age are starting to make their own decisions and their own food choices," says Contento. "The focus is on developing autonomous motivation, so they will make healthy choices and feel proud of doing that. It's not easy given the environment we live in. Stores in every neighborhood offer less healthy fare that is cheap, convenient and tasty. At the same time, children get three hours a week, on average, of ads for food. Of course, they don't get three hours a week of nutrition education."

C3 arms children with the motivation and skills needed to navigate this unhealthy environment. Kids calculate the amount of sugar in sweetened beverages and realize that the popular 20-ounce size has more sugar than is recommended for an entire day. Students use this kind of data to benchmark their own eating habits. They complete a "Bite and Write Food Log" to track their own energy balance. In subsequent lessons, they frame out plans for healthier eating and increased physical activity. Each lesson is paired with a "Calvin and Carol" reading in which the two characters of the title learn to improve their energy balance so

SOMEONE'S IN THE KITCHEN... Students cook their meal and then sit down to eat together.

they can do the activities they love. Calvin and Carol are a big hit with the students, Koch says, and teachers often find ways to dramatize their dialogues.

Koch, Contento and Calabrese-Barton piloted the program in select schools and then evaluated its impact in ten classes at a single school. In 2009, together with research associate Heewon Lee, they followed up with a randomized, controlled study of the effectiveness of C3, conducted at five schools where the curriculum was taught and five that did not offer it. Involving 40 classes in all, the study measured self-reported changes in students' knowledge, motivation and behavior.

"We looked at very targeted and specific behaviors that, taken together, would be enough to change kids' energy balance," Koch says. "Eating more fruits and vegetables, drinking fewer sweetened beverages and more water, eating packaged snacks less frequently and in smaller sizes, eating less frequently at fast food restaurants and choosing smaller sizes." The study also measured changes in students' "leisure screen time" and physical activity. "We particularly encouraged walking more and taking stairs

"Children get three hours a week, on average, of ads for food. Of course, they don't get three hours a week of nutrition education."



whenever they could, because those were the things we felt they could have the most control over."

The results of the study, published in the December 2010 issue of the *Journal of the American Dietetic Association*, were encouraging. Students in the schools where C3 was taught consumed significantly fewer sweetened beverages and packaged, processed snacks, cutting back on both frequency and portion sizes. They continued to dine at fast-food restaurants just as frequently, but ate substantially smaller sizes and ordered value or combo meals less often. Other reported behaviors proved more entrenched: for example, fruit, vegetable and water intake did not increase. But these students at the C3 schools said they chose the stairs more often and walked more frequently for exercise while spending less time watching TV and playing video games.

School districts across the country are now adapting C3 to meet their needs. In Jackson, Michigan, designating "a lead teacher" to champion C3 led to uptake of the curriculum for all 30 middle school classes. In Philadelphia, schools will incorporate C3 lessons throughout middle school.

Nevertheless, Contento warns that C3's ultimate goal—improved eating and fitness behavior among students—will only happen if schools themselves practice what the curriculum preaches. She and Koch are beginning a



KITCHEN CALCULATIONS Above: Contento and Koch collaborated on the C3 nutrition curriculum. Left: In addition to cooking, students count calories and calculate their Body Mass Index.

new study, funded by the United States Department of Agriculture, designed to compare the impact of nutrition curricula along with that of instituting better food offerings and more frequent supervised exercise. Students will be weighed at the beginning and end of the study, and Koch and Contento will also calculate changes in Body Mass Index (weight corrected for height, which is a measure of obesity).

"We'll really be able to see whether wellness policy can be an effective means of helping children eat better and maintain energy balance," says Contento.

To help Contento and Koch develop their methodology for that study, most of the fifth graders who visited the Earth Friends Room from P.S. 161 this past fall agreed to be weighed and measured. Kathleen Porter gave another group pedometers and showed them how to measure the number of steps they take each day. A third group stirred the rice and vegetables. Then everyone sat down to lunch. ■

Adding to Their Bench Strength

TC is taking elementary school science teachers back to the lab and bringing them up to speed

Jo Farrell teaches his fifth grade class at P.S. 161 in Manhattan five subjects, including science. In fact, he is the school's only science teacher, despite having dodged science and math in college and only dimly remembering some physics from high school.

"Science is a weakness of mine," Farrell said one evening this past December, clicking to the Web site for the New York City Scope and Sequence science requirements that all public school teachers must cover. There were 11 pages of requirements for grades one through six, including lessons on the scientific method, earth science, food and nutrition, ecosystems, simple and complex machines, weather, biological classification systems, and the interdependence of climate and ecosystems. "It's pretty terrifying. You get a textbook and a teachers guide, but it's a lot to juggle. Basically, the first year, you're still trying to figure out how to sharpen pencils and line kids up."

According to international standardized tests, American students are falling behind other countries in science knowledge. Schools are under pressure to improve their science instruction and begin it in the earlier grades, as opposed to middle or high school. But there's a major hurdle: many teachers like Farrell have not been formally prepared to carry out the charged task of hooking young people on science.

That's why, this past fall, Teachers College offered a new professional development course—"Content, Pedagogy, and Practice in Elementary Science Education"—to teachers at elementary schools that are part of the College's General Electric Foundation Harlem Schools Partnership grant.

The course is the brainchild of Felicia Moore Mensah, Associate Professor of Science Education. Initially, Mensah and Janell Catlin, the Partnership's director, set out



SCIENCE IN A BOX Kits from the New York City Board of Education, at P.S. 153.

to improve teachers' classroom skills. But they soon discovered that many of the teachers were just as determined to improve their knowledge of science. For Mensah, skills and commitment go hand-in-glove. "The more content you have, the more confidence you develop in the classroom for teaching science," she says.

Mensah recruited alumna Amanda Gunning, her current post-doctoral fellow, to teach the professional development class with her. Gunning, a former high school physics teacher, completed a dissertation study in May, and confirmed through research that elementary school teachers lack confidence both in their general knowledge of science and in their ability to develop and execute science lesson plans. Although elementary school teachers are increasingly tapped to teach science, most states do not require them to specialize in a science or liberal arts discipline.

"It's not standard that you would get science, or physical science, in elementary teacher preparation," said Mensah. "A lot of my students at TC have never had a physics class. Thus, the content emphasis for this professional development course was physics."

Mensah's class has many appealing features. It offers teachers lots of hands-on classroom activities that are both engaging and impart real knowledge and content. One evening in December, Gunning took the teachers on an online tour of science materials with "tons of inter-



THE SIX O'CLOCK CLUB Wynn-Boyd (left), Cayambe and Broderick at TC.

active simulations." She showed them a Web site on weight and measurement from the University of Colorado at Boulder that let children choose a sleeping dog, a crate of books, a refrigerator or a filing cabinet, and select the number of newtons (units of force) needed

to move each of them. A biology site illustrated natural selection by simulating forces (food, wolves) that affect the growth of a rabbit colony. Other sites offered simulations of static electricity, circuits, laws governing the behavior of gases, gravity, the solar system, nuclear fission and the greenhouse effect.

The simulations looked a lot like digital games, a selling point with kids. "Students enjoy it," Gunning said, "because they get to be online." She had chosen the Web sites to help the teachers complete their final assignment: designing physics lessons they could use in their classrooms.

Another major draw of Mensah's class: it gives teachers the chance to collaborate. Certainly that was true for Denise Wynn-Boyd, Michelle Broderick and Ines Cayambe, teachers at P.S. 153 who signed up together. The three began meeting after school on Fridays to review the physics material they had learned and design lessons for their own classrooms. They came to be known as the "Six O'Clock Club," because they could still be found working on Friday evenings, when their colleagues were long gone.

Schools are under pressure to improve their science instruction and begin it in the earlier grades, but many teachers have not been formally prepared to carry out the charged task of hooking young people on science.



"We stayed together because of the camaraderie and the desire to succeed," Wynn-Boyd says. Eventually, a vice principal at the school took notice and began sitting in. She decided to make the group's work available to other teachers at the school.

The payoff in the classroom has been striking. Broderick and Wynn-Boyd are now using material from a "Full Option Science System," or FOSS Kit. The kits are provided system-wide by the New York City Department of Education, but often remain unopened by teachers who don't have time to explore the material or who simply feel intimidated by science. Last year as part of the Harlem Schools Partnership, TC offered Saturday workshops and a Summer Science Institute to partnership schools and teachers on learning how to teach with the FOSS kits. Mensah and Catlin helped to organize and teach these professional development sessions, along with Mark and Helen Levy, science trainers who conduct professional development workshops for teachers on how to use the FOSS kits.

One day in December, with the year-end holiday break two days away, Broderick and Wynn-Boyd showed

GETTING ELEMENTAL Broderick and students examine the properties of rocks.

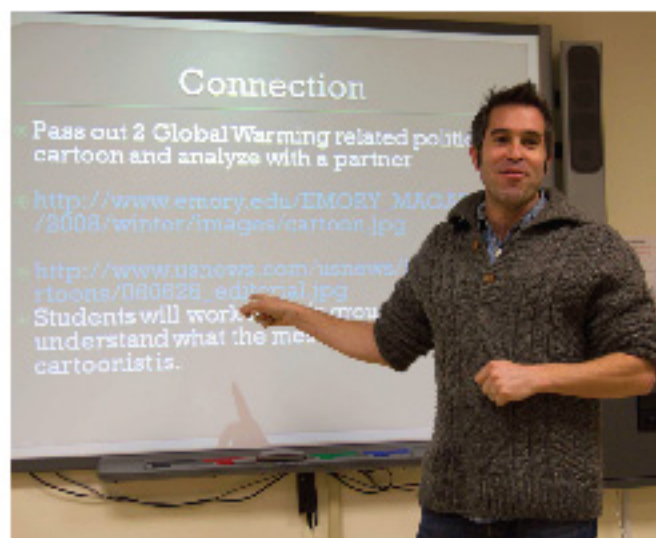
a short video about rocks and minerals to their second grade science class at P.S. 153. Afterward, Broderick moved to the front of the room. "What is a rock?" she asked.

Four hands went up. She gestured to one student, who answered, "Rocks are broken-off parts of the earth."

"That's right," Broderick smiled. "Rocks are part of the earth. They are part of nature."

Broderick, who is also a teacher in the school's science and technology cluster and teaches in gifted and talented as well as regular classrooms, helped the students—many of whom are recent immigrants to New York—list and define new words from the video: "geologist" (someone who studies rocks and minerals); "luster" (the way sunlight reflects off of rock); and "texture" (the way something feels to the touch). Then Wynn-Boyd recorded the words and definitions on newsprint taped to an easel. Together, she and the students listed the different properties of rocks: hard as diamonds or as soft as talc; rough or smooth; shiny or dull.

"The more content you have, the more confidence you develop in the classroom for teaching science."



"Rocks rock!" she concluded, as the children moved to a rug that had a map of the United States printed on it, with the Rocky Mountains making a jagged line down the West.

"Rocks are under me!" cried a girl named Natalia, as she plopped down on Montana.

After rug time, the children returned to their desks and wrote about what they learned in their science notebooks.

A few days earlier, at their last meeting of the professional development course in December, the teachers had demonstrated their final projects, in which they designed and presented a science lesson for their own classrooms. Carolyn Campis, a third-grade teacher at P.S. 180, and her colleague, Lauren Olerio, delivered a lesson on simple machines in which the students would build a two-wheel pulley. They partnered with Chris Faulkner of P.S. 36, the only science cluster teacher in the group. During a lighter moment, Faulkner hitched up his pants to dramatize the difference between "wedges" and "wedgies."

Jojo Farrell demonstrated two lessons on global warming. To incorporate a literacy component, he said he plans to have his students write letters to New York City's Mayor Bloomberg about what the city can do to stop climate change.

Broderick, Wynn-Boyd and Cayambe staged lessons about different types of forces and motion—push and pull, friction, gravity and magnetism—all precursors to studying simple machines.



TEACHING THE TEACHERS Above: Mensah (left), Gunning and Catlin joined forces to make the science course a reality. Left: Farrell outlines his lessons on global warming.

"This was amazing for me," Wynn-Boyd said afterward. "As an educator, I am always looking to stretch myself and stretch my kids. How do I get that gifted and talented student to become more interested in science, and how do I get that student who is struggling to participate?"

Both Mensah and Gunning proclaimed the inaugural run of the class a huge success. "I'm just so happy with their final projects," Gunning said. "My goal was to have them create something that they could really use in the classroom."

Mensah added, "My goal as a science educator is to have more science in elementary schools, and with these teachers, I am certain that in their schools, science will be happening." ■

For more on science education, visit www.t.columbia.edu/news/7888.

The Change Agents

A program to answer Corporate America's complaint: a good manager is hard to find



When Warner Burke spoke to TC employees this past fall to help introduce a new performance evaluation system, he didn't pull any punches.

"We have a lot of work to do," said Burke, the College's Edward Lee Thordike Professor of Psychology and Education and chair of its Department of Organization and Leadership.

Burke's words were aimed at managers, not their reports. Consider that:

- Companies are notoriously bad at choosing senior executives, routinely disregarding psychological data (including measures of cognitive ability and normal personality) in their decisions, despite the proven track record of such information in predicting leadership successes;
- Half of all executives fail or are fired, and estimates of incompetent leadership range from 30 to 67 percent;
- A full 70 percent of organization change efforts fail—including 75 percent of mergers and acquisitions.

"There is a growing body of evidence that suggests competent leadership is hard to find in organizations," Burke writes in a recent report he compiled with a team of TC students. The bottom line: Most managers negatively affect their people and their organizations.

Where are the Buffets and Gershters of yesterday? The raw talent is still out there, but finding it has become more crucial than ever. In a business world that now moves at a rapid-fire pace, with little margin for error, survival depends on the ability of leaders to adapt and think on their feet.

"Organizational change used to be planned for over time, but now it's part of what happens every day," says Debra Nounair, Associate Professor of Psychology & Education. "It requires leaders to be immediately responsive to emergent issues."

Equipping organizations with the capacity to handle change in all its incarnations is the challenge that has prompted TC to create a new 45-credit, year-long Executive Masters Program in Change Leadership (known as "XMA" for short) that is launching in summer 2011 under Nounair's leadership. The program, which received support from the Provost's Investment Fund, is situated within the larger social-organizational psychology component of the department. It is itself a response to an evolving marketplace, replacing a certificate program with the more staid title of Advanced Organization Development and Human Resource Management. Rather than appealing to human resources employees interested in a wide overview of their organizations, the XMA targets mid-level executives who could be tapped to manage change, planned or unplanned. The going-in premise is that these insiders have the potential to be more effective than expensive consultants who don't really understand what's happening inside the organization.

"Companies have a lot of experience bringing in the Deloittes and the McKinseys and the Booz Allens," Burke says. "And they have not been overly euphoric about what they get for the high degree of money they spend. A major objective of this program is to increase capacity so that a line manager doesn't have to hire McKinsey every time he's got a problem."

The inaugural class, which will likely total 18 students, will draw from a range of professions, including law, health care, marketing and the nonprofit world. Beth Johnson, director of recruiting at O'Melveny & Myers, a New York City-based law firm, is typical of the incom-



CHANGE EXPERT Above: Burke developed a widely used change model and consulted for major companies. Left: Johnson, director of recruiting at O'Melveny & Myers, is focused on the changing relationship between law firms and their clients.

ing group. A mid-career executive who was considering getting an MBA, Johnson was interested in organization development and wanted a master's degree—and the program's focus on change further piqued her interest.

"We're at a really interesting point here in the legal industry," she says. "With the economic downturn, the relationship between law firms and their clients has been changing. We have to think about how we're going to do business in the future."

Students in the XMA program will work primarily with three key TC faculty:

- Nounair, who has more than 15 years of experience in executive education. She has worked with senior managers in leadership development programs and consulted to a wide variety of public companies and not-for-profits.
- Burke, co-developer of the widely studied Burke-Litwin Model of Organizational Performance & Change, and a former consultant to British Airways and SmithKlineBeecham.

"Organizational change used to be planned for over time, but now it's part of what happens every day. It requires leaders to be immediately responsive to emergent issues."



DOCTORAL TEAM Members of the Psychology of Management and Leadership Competencies workgroup at TC

- William Pasmore, a new faculty member who is also affiliated with the Center for Creative Leadership and was a partner in the corporate learning and organizational development practice at the consulting firm Oliver Wyman Delta.

XMA students will dive in to the literature of organization development, absorbing eight books for the program's first week-long module, as well as a seminal article, "What We Know About Leadership: Effectiveness and Personality," by Robert Hogan, Gordon J. Murphy and Joyce Hogan. They will spend four such modules with their cohort and professors, two at the Tarrytown House Conference Center 45 minutes north of New York City and two at TC. In between, they will be expected to spend 10 hours a week on course-related assignments and attend monthly half-day virtual sessions for project supervision, teamwork, information sharing and any additional hot-topic lectures.

Most importantly, the XMA students will spend at least a quarter of their time on action projects—actual issues at each other's companies or organizations that they will cooperatively discuss, study and try to help solve. For example, one entering student who is a district sales trainer and manager at a pharmaceutical company will work on reshaping operations in preparation for the launch of anticipated revolutionary new products. Another, who is an assistant vice president at an overseas branch of an American bank, will focus on helping top leaders build an effective internal culture to support the bank's planned metamorphosis from being American-driven to a "dynamic global entity."

"There's a long tradition of applied learning in this field," says Pasmore, who previously taught at the Weatherhead School of Management at Case Western Reserve University and recently was named editor of the *Journal of Applied Behavioral Science*. "This is not something you read in a book and do without going out and trying. People really need the combination of adult experiential learning and the foundational work to understand what it means and how it works. Plus their organizations are paying and they want to see some benefit."

Like the executives they hope to prepare, the XMA founders know they will need to remain on the cutting edge of their field to stay competitive. One such innovation has been developed over the past three years by a Psychology of Management and Leadership Competencies workgroup composed of top Social-Organizational Psychology Ph.D. students, led by Burke. Students in the group, who will be available to help the executives in the program with their action projects, have been developing a potentially groundbreaking tool for reliably assessing leadership potential among employees. That tool is a questionnaire that will gauge employees' comfort and ease with learning new things—a skill the field has dubbed "learning agility," and that research has shown may well be a key predictor of an employee's ability to lead.

"A major objective of this program is to increase capacity so that a line manager doesn't have to hire McKinsey every time he's got a problem."

"We know what leaders do, but we don't know what they do that's really effective," Burke says. "I'd read some research that said that one's learning approach is important to growth and development, and that seemed to align with leadership effectiveness as well. That's what sparked me—well, maybe effective leaders are learning-agile. Maybe they are more adept at learning what they need to know than other people."

Dissatisfied with existing measures of learning agility, Burke set his students to creating a learning agility assessment scale. The team whittled some 128 questions down to a questionnaire of 19, currently in pilot testing. The incoming XMA program students will likely be given the test, helping the Ph.D. students to further refine it based on their results. The XMA-ers also represent potential consumers for the instrument once it's perfected, and other such synergies may well follow.

"When you're in an organization, you're so in that daily market, that daily industry, that you just can't stop seeing things a certain way," says Kate Rokoff, a fourth-year doctoral student in the workgroup who worked at the Harvard Business School doing research and helping to write teaching cases before coming to TC. "Our empirical research process can provide a fresh perspective. The flip side is, we need them, too. We can do only so much research in a Petri dish, separate from the real world. So the



RETHINKING THE FIELD TC's Nourair sees change as an everyday challenge.

feedback we will get from the XMA students about what does and what doesn't work in their organizations will be really useful."

Still, for her part, Beth Johnson says she's looking forward to applying research methodology to workplace behavior. "I'm really excited about those 'aha' moments that I'm going to have in class when we go through some sort of scientific theory or set of behaviors and I'll realize, *I know people who do that*. That's going to be really great." ■

To view an online interview with Beth Johnson, visit www.tc.edu/news/7889.

BRINGING IT ALL BACK HOME

The more things change with in TC's Social-Organizational Psychology program, the more, in some ways, they stay the same. In January 2011, William Pasmore became editor of *The Journal of Applied Behavioral Sciences (JABS)*, which was founded in 1965 under the editorship of TC psychology professor Goodwin Watson. The first issue included articles by several leading names in American psychology, including Carl Rogers and Chris Argyris.

TC also is planning the creation, possibly as soon as next fall, of a Center for Group Dynamics. The name harks back to the legendary Center for Group Dynamics Research founded at MIT during the middle of the last century by psychologist Kurt Lewin. That center, together with the National Training Laboratories, which was then part of the National Education Association, co-sponsored the creation of JABS.



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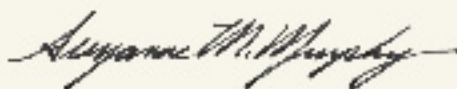
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Beginning in 2009-2010, through the creation of the Maxine Greene Society, we also are honoring the generosity of consistent, long-term donors who have supported Teachers College over the years. And we are delighted to feature here our new Lifetime Giving Society, which recognizes the exceptional philanthropy of those donors who have made an extraordinary commitment to TC. The Society honors those remarkable supporters who have made cumulative commitments to the College of \$1,000,000 or more.

Without such a devoted community of supporters, TC could not bring its expertise to bear across the fields of education, health and psychology, serving as a leader in curriculum development, evidence-based research and the melding of theory and practice. Thanks to you, we now are laying the groundwork to take those efforts to the next level, with a particular focus on advancing the art and science of learning; reimagining and revitalizing urban schools; and shaping research-based policies and formulas for success.

As we move forward with this important work, the support and partnership of so many of our alumni and friends is not only essential to our success, but makes a critical difference every single day.

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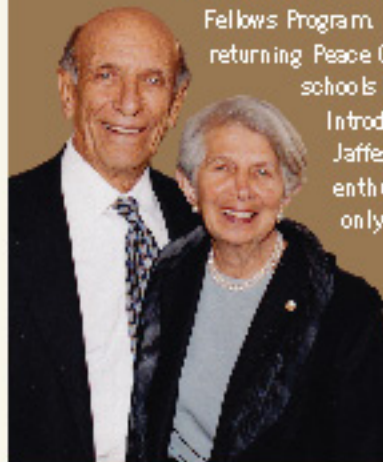
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Whether endowing a scholarship or contributing to the Annual Fund, Trustee Elliot Jaffe and his wife, Roslyn, have shown extraordinary long-term support for Teachers College. But perhaps their singular contribution to the College has been their investment—both financially and personally—in the Peace Corps Fellows Program. Since 1985, this landmark program has recruited returning Peace Corps Volunteers to teach in New York City public schools by providing funding toward their master's degrees.



Introduced to the program in the early 1990s, the Jaffes were impressed by the Peace Corps returnees' enthusiasm for teaching. As Elliot Jaffe states, "the only thing they are lacking is funding"—so he and

Roslyn have provided both endowment and annual support for these remarkable TC students so they can succeed in and out of the classroom. The Peace Corps Fellows are now in their 25th year, and the current cohort and the Jaffes continue to exhibit the same passion for the program.

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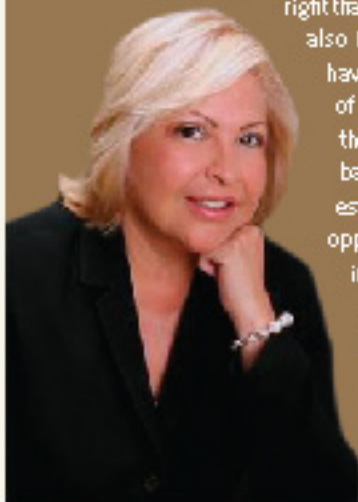
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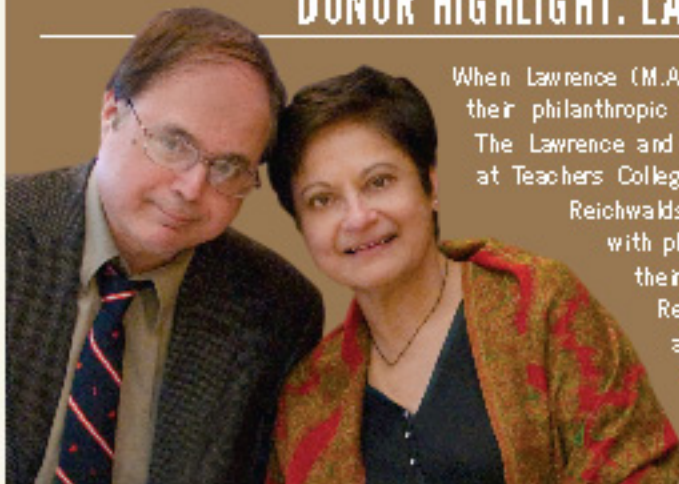
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Teachers College gratefully acknowledges the generous support received from the estates of our alumni, faculty, trustees and friends. These very important planned gifts provide significant funds for scholarship, professorships, program and general support.

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DONOR HIGHLIGHT: ELIZABETH HAGEN

Dr. Elizabeth Hagen, an authority on educational and psychological measurement and evaluation, was a member of the TC faculty for more than 30 years. An integral part of the community, she was not only the Edward Lee Thorndike Professor in Psychology and Education, but served as Dean of Academic Affairs from 1972 to 1976, was Director of the Division of Health Services, Sciences, and Education, and program coordinator for the College's Nurse Scientist Training Program. When she passed away in 2008, Dr. Hagen not only left a substantial outright bequest to the College but designated TC a beneficiary of her annual royalty income for an academic text she co-authored. In addition to bequests, royalties are a creative and simple way for our alumni and faculty to provide for TC.



CORPORATIONS AND FOUNDATIONS

Institutional givers—corporations, foundations and associations—play a vital role in supporting the overall mission of Teachers College. Their generosity makes it possible for the College to initiate and maintain some of its most innovative, forward-looking projects and programs in addition to providing critical support offered to our students through scholarships and fellowships. We are deeply grateful to these funders for the substantial benefits they bring to the entire TC community.

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DONOR HIGHLIGHT: JEWISH FOUNDATION FOR EDUCATION OF WOMEN

The Jewish Foundation for Education of Women (JFEW) has honored Teachers College and its students since 1999 with over \$1 million in support of scholarships for aspiring math and science teachers willing to make a commitment to teach in the New York City public schools. Through the years, JFEW has provided a total of 36 women scholars at TC with generous scholarships to pursue their teaching aspirations, and over 25 continue to teach within the New York City public school system after having completed their two-year service requirement. "JFEW is proud of our TC graduates," said Executive Director, Elizabeth Leiman Kraiem. "TC gave them the training and resources to do their best work on the front lines of education."

JFEW is a private, nonsectarian organization that enables women with financial need to meet their education and career goals through scholarships and other supportive services. For more than 130 years, JFEW has helped New York City-based women of all ages and backgrounds to become self-sufficient economically through education. Created as a school in 1880 to assist immigrant Jewish girls and women, the Foundation has responded to changing needs and opportunities for all women, and currently supports fifteen programs with colleges and universities.

JFEW scholarship recipient Denisa Ferrandez is studying mathematics education at TC.



FINANCIAL STATEMENT HIGHLIGHTS

The accompanying financial statements have been prepared on the accrual basis of accounting in accordance with standards established by the Financial Accounting Standards Board (FASB) for external financial reporting by not-for-profit organizations.

Balance Sheet: The balance sheet presents the College's financial position as of August 31, 2010. The College's largest financial asset is its investment portfolio, representing approximately 57% of the College's total assets, with a fair market value of \$210 million as of August 31, 2010. The investment portfolio includes \$185 million relating to the College's endowment, which represent contributions to the College subject to donor-imposed restrictions that such resources be maintained permanently by the College, but permit the College to expend part or all of the income derived therefrom. The endowment is managed to achieve a prudent long-term total return (dividend and interest income and investment gains). The Trustees of the College have adopted a policy designed to preserve the value of the endowment portfolio in real terms (after inflation) and provide a predictable flow of income to support operations. In accordance with the policy \$18 million of investment return on the endowment portfolio was used to support operations in fiscal year 2010.

The College's second largest and oldest asset is its physical plant, consisting of land, buildings, furniture and fixtures, and equipment. As of August 31, 2010, the net book value of plant assets was approximately \$119 million, representing approximately 29% of the College's total assets. The College's liabilities of \$198 million are substantially less than its assets. As of August 31, 2010, long-term debt represented the College's most significant liability, at \$86 million. In accordance with FASB standards, the net assets of the College are classified as either unrestricted, temporarily restricted, or permanently restricted. Unrestricted net assets are not subject to donor-imposed restrictions. At August 31, 2010, the College's unrestricted net assets totaled approximately \$86 million. Temporarily restricted net assets are subject to donor-imposed restrictions that will be met either by actions of the College or the passage of time. Permanently restricted net assets are subject to donor-imposed restrictions that stipulate that they be maintained permanently by the College, but permit the College to expend

part or all of the income derived therefrom. The College's permanently restricted net assets consist of endowment principal cash gifts and pledges.

Statement of Changes in Net Assets: The statement of changes in net assets presents the financial results of the College and distinguishes between operating and non-operating activities. Non-operating activities principally include investment return, net of amounts appropriated as determined by the College's endowment spending policy, changes in non-operating pension and postretirement liabilities, and interest rate swap charges. Unrestricted operating revenues totaled approximately \$170 million. The College's principal sources of unrestricted operating revenues were student tuition and fees, net of student aid, representing 56% of operating revenues, and grants and contracts for research and training programs, representing 21% of operating revenues. Investment return, auxiliary activities, government appropriations, and other sources comprise the remaining 23% of operating revenues. Operating expenses totaled \$164 million.

BALANCE SHEET August 31, 2010

ASSETS	
Cash	\$8,723,069
Student accounts and other receivables, net	4,073,337
Grants and contracts receivable	4,215,441
Inventories and other assets	3,880,595
Contributions receivable, net	5,493,408
Funds held by bond trustees and escrow agent	6,082,821
Investments	208,573,019
Student loans receivable, net	3,764,131
Plant assets, net	119,152,831
TOTAL ASSETS	\$364,963,652

LIABILITIES AND NET ASSETS

LIABILITIES	
Accounts payable and accrued expenses	\$16,371,481
Deferred revenues	16,442,169
Long-term debt	86,213,462
Accrued pension and other benefit obligations	61,802,364
Other liabilities	9,554,774
U.S. Government grants refundable	3,060,080
TOTAL LIABILITIES	193,404,280

NET ASSETS

Unrestricted net assets	
Endowment and Other	148,083,875
Pension and Postretirement Obligation	(61,802,364)
Total Unrestricted net assets	86,281,511
Temporarily restricted	9,127,070
Permanently restricted	76,127,931
TOTAL NET ASSETS	171,529,372
TOTAL LIABILITIES AND NET ASSETS	\$364,963,652

STATEMENT OF CHANGES IN NET ASSETS Fiscal Year ended August 31, 2010

	TEMPORARILY RESTRICTED			TOTAL
	UNRESTRICTED	RESTRICTED	RESTRICTED	
OPERATING REVENUES				
Student tuition and fees, net of student aid	\$95,079,521	—	—	95,079,521
Government appropriations	623,620	—	—	623,620
Grants and contracts	35,333,349	—	—	35,333,349
Contributions	2,980,923	—	—	2,980,923
Investment return used in operations	13,121,565	—	—	13,121,565
Sales and services of auxiliary enterprises	201,58,864	—	—	201,58,864
Other sources	2,042,000	—	—	2,042,000
Net assets released from restrictions	976,140	—	—	976,140
TOTAL OPERATING REVENUES	\$170,315,982	—	—	170,315,982
OPERATING EXPENSES				
Instruction	59,595,740	—	—	59,595,740
Research, training and public service	35,913,574	—	—	35,913,574
Academic support	12,948,019	—	—	12,948,019
Student services	9,651,938	—	—	9,651,938
Auxiliary enterprises	21,730,647	—	—	21,730,647
Institutional support	243,943,85	—	—	243,943,85
TOTAL OPERATING EXPENSES	164,234,303	—	—	164,234,303
DECREASE IN NET ASSETS FROM OPERATIONS	6,081,679	—	—	6,081,679
NON-OPERATING ACTIVITIES				
Contributions	—	1,191,260	561,679	1,752,939
Investment return, net of amounts appropriated	2,950,248	—	—	2,950,248
Net change in fair value of debt and instruments	(3,177,891)	—	—	(3,177,891)
Investment return on funds held by bond trustees	9,329	—	—	9,329
Change in value of split-interest agreements	28,879	62,540	11,999	103,418
Pension and postretirement charges other than net periodic benefit costs	(2,191,963)	—	—	(2,191,963)
Redesignation of net assets	—	—	—	—
Net assets released from restrictions	604,572	(1,580,712)	—	(976,140)
INCREASE IN NET ASSETS	\$4304,807	(481,366)	573,678	4,486,539
NET ASSETS AT BEGINNING OF YEAR	81,976,664	9,579,056	75,547,113	167,102,833
NET ASSETS AT END OF YEAR	\$86,281,511	9,127,070	76,127,931	171,529,372

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