Welcome to Teachers as Scholars!

Teachers as Scholars (TAS) is a partnership between Princeton University and surrounding school districts with the objective of providing scholarly and intellectually engaging professional development opportunities for teachers. TAS is administered at the University by the Program in Teacher Preparation which is a registered Professional Development Provider for the State of New Jersey. This year's program will include participation by teachers of all grade levels and subject areas from Bordentown Regional School District, Flemington-Raritan School District, Hillsborough Township Public Schools, Hopewell Valley Regional Schools, Hunterdon Central Regional School, Lawrence Township Public Schools, Washington Township Public Schools, Princeton Regional Schools, Washington Township Public Schools, and West Windsor-Plainsboro Regional Schools.

TAS offers seminars for area teachers taught by leading faculty and staff from Princeton University. The seminars span a wide range of subjects in the humanities, sciences, and social sciences and are intended to promote life-long learning by teachers at both elementary and secondary levels. Open to interested teachers from any grade level or content area, seminars meet from one to as many as three days, and those with more than one session usually meet every other week. In preparation for each session, seminars typically require participants to complete readings or other work, which are provided at no cost to the participant and will be mailed a month in advance of the seminar. Local school districts generously provide release time and substitutes for teachers on seminar days. Specific dates and topic descriptions are provided in this brochure.

The Teachers as Scholars program began at Harvard University in 1996 and has extended to include colleges and universities across the country. The TAS program at Princeton University is in its ninth year and is supported by the Program in Teacher Preparation at Princeton University and area school districts.

#1. Why can't the United States get its act together with the international human rights system?

November 12, November 26 and December 10

Stanley N. Katz

Woodrow Wilson School of Public and International Affairs

9:00 a.m. - 3:00 p.m.

We will discuss one of the major dilemmas in modern U.S. history – why the world's first (and some would say best) democracy has been so limited and inconsistent in its support of the international human rights system. The U.S. was, after all, the leading proponent of the establishment of the United Nations, and Eleanor Roosevelt was the first Chair of the U.N. Human Rights Commission. Yet our country has not agreed to many of the major human rights treaties, nor have we yet signed the Covenant on Economic, Social and Cultural Rights. We are currently holding out on the International Criminal Court and CEDAW (the treaty opposing discrimination against women). The normal explanations for U.S. opposition to human rights are, on the one hand, that our own constitutional rights system is better than the international system, and on the others, that we are a mean-spirited, selfish and self-interested nation. I want you to think about the possibility of a third sort of explanation – that the fundamental nature of our historical constitutional tradition renders us dependent upon popular sovereignty (and thus democracy) as the source of basic rights and duties. And therefore that adoption of such rights and norms needs to be done through the amendment process, and not by signing on to international treaties. The recent debate over U.S. adherence to the Geneva Conventions on the rules of war is an urgent and poignant reminder of the practical importance of these questions in this country.

The discussion will be based on limited original source readings, including some of the basic constitutional and international law documents, a recent essay of my own: "A New American Dilemma?: U.S. Constitutionalism vs. International Human Rights," 58 *University of Miami Law Review*, no.1, Oct. 2003, pp. 323-345, and two books: Mary Ann Glendon, *A World Made New: Eleanor Roosevelt and the Universal Declaration of Human Rights* and Paul Gordon Lauren, *The Evolution of International Human Rights*.

Stan Katz is a lecturer with rank of professor at the Woodrow Wilson School. He is the faculty chair of both the undergraduate program and Center of Arts and Cultural Policy Studies. He is also President Emeritus of the American Council of Learned Societies.

#2. Ancient Egypt and its Hieroglyphs

November 12, November 26 and December 12

Joshua T. Katz

Department of Classics

9:00 a.m. - 3:00 p.m.

How do you—and how did the Egyptians—read hieroglyphs? If you have ever stood before brightly decorated sarcophagi from millennia-old pyramids, staring in respectful awe at the amazing symbols without ever imagining that you, too, could read and write like an Egyptian, this handson seminar will get you started. In our exploration of ancient Egyptian society and its orthographic system we will take both an internal and an external approach: on the one hand we will learn about the gods, mortals, pharaohs, and sphinxes about whom the Egyptians wrote; on the other we will think about the cognitive and artistic similarities and differences between the ways in which we and the Egyptians express ourselves in written form.

On the first day we will become acquainted with Egyptian history, discover the principles that underlie the hieroglyphic writing system, and take a look at the phenomenon of "Egyptomania" from ancient times to the present. The second session will be devoted to learning as much as possible about Egyptian language and writing. In the final meeting we will, among other things, take a field trip to the Princeton University Art Museum, where we will have the opportunity to examine Egyptian artifacts firsthand.

Joshua T. Katz is a linguist by training, a classicist by profession, and a comparative philologist at heart. He received a B.A. from Yale, an M.Phil. from Oxford, and a Ph.D. from Harvard. At Princeton he is an Associate Professor of Classics, the John Witherspoon Bicentennial Preceptor, and a member of the Program in Linguistics. Broadly interested and published in the languages, literatures, and cultures of the ancient world, he counts among his honors the President's Distinguished Teaching Award, which he received at Princeton's Commencement in 2003.

#3. The Nature and Use of Human Language

November 14, November 28 and December 12

Marguerite Browning

Program in Linguistics

9:00 a.m. - 3:00 p.m.

Modern linguistics seeks the answers to three questions: What is knowledge of language? How is this knowledge acquired? How is it put to use? In attempting to answer these questions, linguists study the properties of specific languages to discover the universal properties, which are the foundation of all human language. The first session will introduce the concepts and assumptions of this approach to human language. Central to this inquiry are the very peculiar properties of human language acquisition: in the absence of pathology, children become fluent native speakers of the language to which they are exposed to a surprisingly uniform degree, without explicit teaching, regardless of intelligence, in a relatively short time. The second session will focus on some of the recent research devoted to understanding the way children acquire their native language(s) and how this process differs from second, or non-native, language acquisition. Finally, we explore some of the social aspects of language use and attitudes towards language, focusing on issues related to bilingual education, including the Oakland Ebonics resolution.

Marguerite Browning is an Associate Professor of the Council of the Humanities and of the Program in Linguistics at Princeton University and an Associate Faculty member in the Department of Psychology at Princeton University. She received her Ph.D. from the MIT Department of Linguistics and Philosophy in 1987 and taught in the Linguistics Department at MIT and the University of Texas/Austin before joining the Princeton faculty in 1990. Her research interests are in the area of syntactic theory, which is broadly concerned with the nature of the knowledge possessed by native speakers of a language concerning how sentences are formed in that language.

#4. The Little Rock School Integration Crisis, 1957-59

November 15, November 29 and December 13

John M. Murrin

Department of History

9:00 a.m. - 3:00 p.m.

In 1957, rather than permit Little Rock's Central High School to proceed with its plans for peaceful integration, Governor Orville Faubus of Arkansas mobilized the national guard, prevented the black students from entering the school, and provoked a national crisis. President Dwight D. Eisenhower intervened to uphold what he clearly regarded as the rule of law as defined by the U.S. Supreme Court's insistence on integration "with all deliberate speed." He nationalized the Arkansas national guard and sent units of the elite 101st Airborne Division to Central High. The school was integrated, but the black students had to endure a year of tension and misery. Faubus replied by closing all of Little Rock's high schools for the academic year 1958-59, a move that finally provoked a sufficient community response to reopen the schools.

Our assigned readings will be a packet of xeroxed documents exploring the major aspects of the crisis in some detail. We also expect to show one or two films. Our aim is to demonstrate that history is not a clean narrative waiting to emerge from the sources. It's messy, and each historian has to decide what will make the most persuasive narrative. Even using identical sets of documents, no two historians will generate identical narratives.

John M. Murrin is a professor of history emeritus at Princeton. After teaching at Washington University, St. Louis, for ten years, he moved to Princeton in 1973. He taught early American history at both the undergraduate and graduate levels for thirty years, and, usually with James M. McPherson, he co-taught an undergraduate seminar on War and Society in the Modern World. In 1998-99 he served as President of the Society for Historians of the Early American Republic. He has published several essays on the Salem witch crisis.

#5. Engineering in the Modern World

January 2, January 16 and January 30

Michael G. Littman

Department of Mechanical and Aerospace Engineering

9:00 a.m. - 3:00 p.m.

Beginning with the industrial revolution in Great Britain, engineering objects and systems have shaped our modern world. Three sessions are offered that examine the most important engineering works in the past 300 years from scientific, social, and symbolic perspectives. Through visual lectures, classroom demonstrations, and simple experiments, participants will learn about important engineering innovations and key innovators in the areas of structures, machines, networks, and processes.

The first session, "Iron, Independence, and Industry," will focus on the period between 1779 and 1855. (1779 is the date of construction of Iron Bridge, the first metal bridge; 1855 is the date of James Francis's Lowell Hydraulics Studies concerning the efficiency of water turbines.) This session will explore structures and machines (metal bridges and steam engines) and the development of America's earliest industries, textile and steamboats.

The second session will be "Connecting Cities and Connecting the Continent," and will focus on the period between 1830 and 1869. (1830 is the opening date of the Manchester-Liverpool Railroad in England, the first passenger and freight line; 1869 is the date of completion of the US transcontinental railroad.) This session will be about railroads and telegraphs and will examine scientific developments (high-pressure steam, traction, and electromagnetism) and political and social influence of early transportation and information networks.

The third session will be "The Rise of the Great Industries," and will focus on the period between 1876 and 1939. (1876 is the date of the Philadelphia Exhibition celebrating America's centennial and 1939 is the date of the New York and San Francisco World's Fairs.) This session will concern the technical origins and economic and social effects of major industries including telephone, automobile, airplane, oil, steel, radio, and electric power.

Michael G. Littman is a Professor of Mechanical and Aerospace Engineering at Princeton University. He joined the Princeton faculty in 1979 after receiving a Ph.D. in Physics from MIT in 1977. Prof. Littman teaches in the areas of control systems and microprocessors and coteaches with Prof. David Billington about the history and science of engineering. His research interests include tunable lasers and telescope designs applicable to the search of earth-like planets about nearby stars.

#6. The Process of Scientific Discovery

January 23

Russell Hulse

Retired from the Plasma Physics Laboratory

9:00 a.m. - 3:00 p.m.

How do scientific discoveries occur? Students are often taught in school that the "scientific method" is a strict procedure involving the pass/fail testing of rigidly defined hypotheses, but this dictum does not fully illuminate the rich variety of ways in which knowledge is really developed. Similarly, while the role of serendipity is anecdotally popular, the old maxim "chance favors a prepared mind" indicates that pure luck is seldom the whole story either. I will begin the seminar with my personal narrative of the discovery of the first binary pulsar. Each participant will then be expected to give a short presentation which they have prepared for the seminar, discussing the scientific context, motivation, and approach that lead to some important scientific result. We will use these presentations as a springboard to a broad discussion of the various ways that scientific progress occurs. I am counting on strong contributions from the seminar participants to make this a lively and thoughtful discussion. Participants will receive more specific guidelines for preparing their presentations before the seminar. The seminar is limited to 10 participants.

Russell Hulse won the Nobel Prize in Physics in 1993 for his part in the discovery of the first binary pulsar, a twin star system that allowed scientists to test important aspects of Albert Einstein's theory of relativity. He is a Principal Research Physicist and Distinguished Research Fellow at Princeton's Plasma Physics Laboratory and a Visiting Professor of Physics and Science Education at The University of Texas at Dallas. At UTD, he is developing science education collaborations between the University and local science museums, science centers, schools, and libraries.

#7. The Big Bang and the Expanding Universe

January 25 and February 8

Michael Strauss

Department of Astrophysical Science

9:00 a.m. - 3:00 p.m.

One of the most exciting scientific breakthroughs of the 20th Century was the discovery of the fact that the universe is expanding. This discovery led to our understanding of the size and age of the universe and directly leads to the Big Bang model for the origin of the universe. In this seminar, we will discuss the observational evidence for these amazing conclusions, and critically examine the reasons that astronomers are confident that the Big Bang model is correct. Along the way, we will discuss the nature of galaxies and how their distance is measured, as well as learn about quasars, among the most energetic and distant known objects in the universe. We will also address the age-old question of the future fate of the universe: will it expand forever, or eventually recollapse? We will learn about both dark matter and dark energy, which are key for our modern understanding of cosmology. We will put emphasis on a quantitative understanding of these question, using mathematics no more difficult than high-school algebra.

Michael Strauss is a professor in the Department of Astrophysical Sciences at Princeton University, having joined the department in 1995. He studies the large-scale distribution of galaxies and quasars.

#8. The Origins of Modern Science, 1500-1700

February 14, February 28 and March 7

Michael S. Mahoney

Department of History and Program in History of Science

9:00 a.m. - 3:00 p.m.

During the 16th and 17th centuries, a small but growing number of European thinkers articulated a new understanding of the natural world, of what could be known about it, and of how that knowledge could be applied to human purposes. Through an examination of formative episodes in modern astronomy, mechanics, optics, and physiology, the seminar will trace the emergence of science as an independent, institutionalized cultural activity. The seminar will also serve as an introduction to history of science as a tool of historical investigation and as a resource for teaching science. For a sample of topics and sources, see the syllabus for the instructor's undergraduate lecture course at www.princeton.edu/~hos/h291.

Michael S. Mahoney has taught history and the history of science at Princeton since 1965. He divides his teaching and research between the history of the mathematical sciences from Antiquity to 1700 and the history of technology in the 19th and 20th centuries, with a focus on the development of modern computing. Professor Mahoney has served as chair of the Board of Trustees of the National Faculty, an organization dedicated to fostering working relationships between teachers and university faculty.

#9. Einstein

March 14 and April 2

J. Richard Gott

Department of Astrophysical Science

12 p.m. - 5:00 p.m.

Time Magazine picked Albert Einstein as the most influential person of the Twentieth Century. In this two day course Prof. Gott will explain Einstein's epoch-making theories of Special and General Relativity and their implications for today's research in a way that is easy to understand. He will present a number of demonstrations that you can use in your classes.

Day 1: March 14, 2008

Lunch: Einstein in Princeton.

The importance of Einstein. Einstein and Newton. The ideas of Special Relativity. Why moving clocks tick slowly. Why you can't build a rocket that goes faster than the speed of light. How $E = mc^2$ is derived. The ideas of General Relativity—Einstein's theory that gravity is du to a curvature of space and time. The black hole: a hotel where you check in but you don't check out.

Homework assignment: Either after class, or just before the next class, drive by Einstein's house in Princeton. A map will be provided.

Day 2: April 2, 2008

Lunch: Gott's famous Pizza Lecture on time travel in General Relativity. Prof. Gott will describe his solution to Einstein's Equations of General Relativity for two moving cosmic strings, which is sufficiently twisted to allow time travel to the past. Wormholes. Why you can't use a time machine to go back in time before the time machine was built. Extra dimensions. The Big Bang. How Einstein's "biggest blunder" turned out not to be a blunder after all. How the universe might have gotten started.

Reading: Prof. Gott's popular book Time Travel in Einstein's Universe. Picked by Booklist as one of the 4 best science books in 2001.

Prof. J. Richard Gott graduated summa cum laude in Physics from Harvard and obtained his PhD in astrophysics from Princeton. He did postdocs at CalTech and Cambridge University before returning to Princeton, where he is now a Professor of Astrophysics. Prof. Gott's work has been covered by Time, Newsweek, The New York Times, and The New Yorker. He was for many years the Chairman of the Judges for the Westinghouse-Intel Science Talent Search, the oldest and most prestigious science competition for high school students in the country. In 1998, Prof. Gott won Princeton University's President's Award for Distinguished Teaching.

#10. Picturing Paris in Impressionist and Post-Impressionist Painting

April 2, April 16 and May 7

Caroline Harris

Princeton University Art Museum

9:00 a.m. - 3:00 p.m.

In the late nineteenth century, the city of Paris went through a startling metamorphosis from a filthy, medieval city of small, twisting streets to a modern metropolis with wide boulevards, beautiful parks, and a state of the art sewage system. Baron Georges-Eugène Haussmann and Emperor Napoleon III were the two men most directly responsible for this transformation. Paris, the celebrated city of lights, was the product of their vision. In the same period, French avant-garde artists such as Claude Monet, Edgar Degas, and Henri de Toulouse-Lautrec were transforming traditional painting using brilliant colors, legible brushstrokes, and radical approaches to composition. Their subject matter was drawn from everyday life, particularly the life of the center of the art world, Paris. They captured its train stations, spectacular downtown vistas, entertainments, cafés, and cafés-concerts, as well as leisure activities along the Seine.

This course will examine Haussmann's work as prefect of the Seine under the Second Empire and explore the new Paris through photographs and relevant works of art by Édouard Manet, Claude Monet, Camille Pissarro, Auguste Renoir, Edgar Degas, Berthe Morisot, Mary Cassatt, Henri de Toulouse-Lautrec, and Vincent Van Gogh. Classes will include slide lectures and gallery sessions at the Princeton University Art Museum. One seminar day will be spent in New York City at the

Caroline Harris has been the Curator of Education and Academic Programs at the Princeton University Art Museum for the past five years. Prior to that, she served as the Staff Lecturer in Charge of Academic Affairs at the Philadelphia Museum of Art. She holds M.A. and Ph.D. degrees in the History of Art from the University of Virginia. Her dissertation topic was Le Violon de Delacroix: Musicality and Modernist Aesthetics.

#11. Contemporary Fiction

April 2, April 16 and April 30

Michael Wood

Department of English

9:00 a.m. - 3:00 p.m.

This seminar will explore recent developments in fiction written in English in Canada, the United States and the United Kingdom. Each session will concentrate on two particular, substantial texts, and will involve close reading and critical exercises; other novels and some literary and historical studies will also be recommended. The questions we shall have in mind will include the status of English as a global language and the role of fiction in the understanding of different times and cultures, as well as the changing possibilities of formal experiment. The novels we shall study closely take up the themes of Indian history, dying in America, cloning, the Holocaust, memory, desire and troubled love; and in spite of their range, in terms both of origin and of content, they share the restless curiosity that has recently come to define much of the best work in literature. For these writers fiction is an art, certainly, but it is also an instrument of inquiry, a way of finding out whatever otherwise could well remain unknown.

The texts for detailed study will be determined in the fall and participants will be notified of the titles at that time.

Michael Wood is the Charles Barnwell Straut Class of 1923 Professor of English and a Professor of Comparative Literature at Princeton. He received the Howard T Behrman Award for Achievement in the Humanities in 2002 and the President's Distinguished Teaching Award in 2005. A member of the American Philosophical Society and the American Academy of Arts and Sciences, he is a frequent contributor to the New York Review of Books and the London Review of Books, writing chiefly on modern literature and on film. His most recent book is Literature and the Taste of Knowledge (2005).

#12. Looking at Jazz through Multiple Lenses: Examining the roles of Culture and Creative Collaboration

April 25

Anthony D. J. Branker

Program in Musical Performance

9:00 a.m. - 3:00 p.m.

Jazz is emblematic of our cultural heritage. It is an art form that emerged out of the encounter between African, Latin American, and European sensibilities and approaches to music. It is because of the fusion of musical elements from diverse ethnic groups representing the Western and Non-Western Worlds that a uniquely American form of artistic expression came into being. Jazz also represents one of the best illustrations of the practice of creative collaboration in the context of a group setting. Musicians recognize that when one engages in the act of improvisation a major area of concern is connected with the idea of creating musical dialogue or conversation with other musicians in the group and with the listener. While it might be convenient to view this improvisational scenario as one where a soloist presents a musical monologue for his or her listeners, there is actually a group-discussion taking place with all members contributing to the conversation. It can be said that this type of collective creative process and the context in which it thrives have strong metaphorical associations with the interwoven concepts of democratic communication, collaborative community, and group interaction.

With a different kind of envisioning, the group setting could provide an inspirational backdrop for discovery, development, and exploration through the value placed on social interaction and mutual influence. Our morning session will examine jazz as a cultural phenomenon through film viewing, music listening, and discussion. In an effort to gain a better understanding the nature of social creativity and participatory learning in a small group setting, the afternoon session will look at the connection between communication, interaction, creativity, and collaboration between members of a group.

Anthony D.J. Branker is Senior Lecturer in Music, Associate Director of the Program in Musical Performance, and Director of the Jazz Program at Princeton University. He has also served on the faculties of the Estonian Academy of Music as a U.S. Fulbright Scholar, the Manhattan School of Music, Hunter College of the City University of New York, and Ursinus College. He is an award-winning composer, conductor, and educator who has also performed at a variety of jazz festivals, concert halls and clubs in the United States and internationally. Professor Branker was program scholar for the Looking At: Jazz. America's Art Form series in Princeton sponsored by the National Endowment for the Humanities in collaboration with Jazz at Lincoln Center and has taught at the Socrates/Erasmus Intensive Programme in cooperation with the Association of Baltic Academies of Music. He holds an Ed.M. from Columbia University, Teachers College, a M.M. in Jazz Pedagogy from the University of Miami, and a B.A. in Music and Certificate in African-American Studies from Princeton University. He is currently working towards his Doctorate in Education at Columbia University, Teachers College.

Registration Procedure

Step 1 Teacher Application with the School District:

Please fill out the District Application on page 16 of this brochure and
submit it to your District Contact listed
below by
Your District Contact will notify you of your status.

Step 2 Teacher Registration with the University:

Once you receive confirmation from the District Contact Representative that you have been selected to attend a Teachers as Scholars seminar, you need to register electronically on the Teachers as Scholars Web Page at http://www.princeton.edu/teacher/tas.htm. The deadline for registration with the University is **October 12, 2007.**

If you have any questions about Teachers as Scholars, please contact Anne Catena, Coordinator of Teachers as Scholars, at acatena@princeton.edu or at (609) 258-3336, or your District Contact. Information can also be found on the TAS Web Page listed above.

We hope you find your experience with Teachers as Scholars to be enjoyable and rewarding, and we look forward to your participation.

District Contacts

Kathy Siegfried Coordinating Supervisor Bordentown Regional School District 318 Ward Avenue Bordentown, NJ 08505-1768 (609) 298-0025 ext. 1139

Jack Farr Superintendent Flemington-Raritan School District 50 Court Street Flemington, NJ 08822 (908) 284-7575 Lisa Antunes Assistant Superintendent Hillsborough Township Public Schools 379 South Branch Road Hillsborough, NJ 08844 (908) 369-0030

Kate Napolitano Director of Instruction Hopewell Valley Regional Schools 425 S. Main Street Pennington, NJ 08534 (609) 737-4002 ext. 2305

District Contacts

Tom Smith Assistant Superintendent Hunterdon Central Regional High School 84 Route 31 Flemington, NJ 08822

(908) 284-7151

Rebecca Gold
Director of Personnel and
Technology
Lawrence Township Public Schools
2565 Princeton Pike
Lawrenceville, NJ 08648
(609) 671-5440

Jane Plenge Assistant Superintendent Montgomery Township Public Schools 1014 Route 601 Skillman, NJ 08558 (609) 466-7601 To Be Announced Assistant Superintendent of Curriculum and Instruction Princeton Regional Schools 25 Valley Road Princeton, NJ 08540 (609) 806-4203

Kathy Foster Assistant Superintendent of Curriculum and Instruction Washington Township Public Schools 155 Robbinsville-Edinburg Rd. Robbinsville, NJ 08691 (609) 632-0910 ext. 2211

Gerri Hutner Director of Communications West Windsor-Plainsboro Regional Schools 505 Village Road, West Princeton Junction, NJ 08550 (609) 716-5000 ext. 5046

Application to School District

-		ation below and submit this form to
your Distri	ct Contact no la	ater than
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Name		
School _		
Grade Lev	el/Content Area	
Please list wish to atte	•	nd and third choice for the seminar you
	Seminar Number	Seminar Title
Choice 1		
Choice 2		

Please duplicate this form as necessary

About the Program in Teacher Preparation at Princeton University

an interdepartmental course of study

The Program in Teacher Preparation is a uniquely designed interdepartmental course of study that prepares Princeton University students, both undergraduate and graduate, to become certified to teach at the elementary and secondary levels. The Program offers specific courses, special seminars and colloquia, and many exciting opportunities for direct collaboration with area classroom teachers through structured, practical field experiences, including full-time practice teaching. Although the Program in Teacher Preparation is relatively small with approximately 25 students earning certification each year, the students who earn certification are sincerely committed to becoming teachers and bring a level of enthusiasm, dedication, and intellectual excellence that will make them outstanding members of the profession. We are very proud of our long-time collaboration with the teachers and administrators from area schools, and we are grateful for their willingness to share their expertise and their valuable time to help us to prepare our students so superbly. We call this collaboration the "community that builds teachers."

other important initiatives

In addition to Teachers as Scholars, the Program in Teacher Preparation is responsible for two other important initiatives for students and teachers in area schools. The Princeton University Preparatory Program (PUPP), inaugurated in July 2001, provides high school students from working-class families with an opportunity to develop their skills, knowledge, qualifications, and self-confidence so that they will have the best chance possible to be admitted to and succeed at the nation's leading universities. Each spring, a group of rising sophomores from Trenton, Ewing, and Princeton High Schools, selected based on grades, test scores, and essays, are invited to spend the next three summers attending classes at Princeton University. The invitation is to them but engages their families as well. At Princeton, they undertake an intensive and challenging six-week program of

courses, tutorials, internships, and guided field trips. PUPP is the brainchild of Miguel Centeno, professor of sociology, and director of the Princeton Institute for International and Regional Studies. It is administered by the Program in Teacher Preparation, working in close cooperation with the principals and professional staff of the Trenton, Princeton and Ewing school districts to identify and recruit students and to track their progress.

QUEST is a professional development program in science and mathematics for local elementary, middle and high school teachers held on the Princeton University campus. This program, featuring a two-week intensive Summer Institute, presents a unique opportunity for teachers to enhance their personal knowledge of science and mathematics content by engaging in laboratory experiments, research and field experiences led by the faculty and staff of the University and scientists from neighboring institutions. QUEST offers participants the chance to develop needed skills for applying inquiry based teaching in area schools, by helping them develop their knowledge, confidence, and enthusiasm in science and mathematics education.

For more information on Princeton University's Program in Teacher Preparation, please visit our website at www.princeton.edu/teacher/tas.htm.

Program in Teacher Preparation Staff 41 William Street Princeton, NJ 08540 (609) 258-3336

John B. Webb, Director

Todd W. Kent, Associate Director

Anne N. Catena, Program Administrator/
Special Projects Director/Coordinator of Teachers as Scholars
Michael Hannan, Program Administrator/PUPP Counselor
Jason R. Klugman, Program Administrator/Director of PUPP
Helen Martinson, Program Administrator
Torey Wilson, Program Administrator/Associate Director of PUPP
Kathleen Applegate, Program Manager