profiles

Students

ANDREW AUDRY is a junior at A. Philip Randolph High School in Manhattan, New York. He has been a student researcher on the Clouds team since summer 1998. His project, lead by Dr. George Tselioudis, focuses on studying the influence of a warmer climate on midlatitude storms in the future. This is done by analyzing the Meridional Temperature Gradient (i.e. difference between the warm equator and the cooler poles) to see how much energy is available to be distributed, which in turn would indicate frequency and intensity of storms in the middle latitudes.

Andrew plans to enter his work in the St. John's University Science Fair and the Borough of Manhattan Science Fair. In Andrew's words, "The simulated work environment established at ICP also nurtured a work ethic within me that I carry wherever I go." He wants to pursue a Master's degree in Computer Science or Financial Law. At school, Andrew has been on the honor roll, a peer mediator, and received Varsity letters for tennis and soccer.

CHRISTINE FLEMING is a senior at DeWitt Clinton High School, Bronx, New York. She has been a member of the Aerosols team since 1998. Under the guidance of Drs. Barbara Carlson and Brian Cairns, she is studying the relationship between ambient air quality data and asthma in the Bronx during 1997.

Factors being studied are outdoor and indoor air quality, and traffic patterns and diesel fuel exhaust. As part of her project, she plans to survey students at her school to help them understand their environment and its potential

effects on asthma. Christine feels that the "experience at GISS and working with datasets and instruments … has inspired [her] to think of ways to develop more efficient and accurate instruments." She plans to enter her research in this year's Intel Science Competition and the Smith Barney Quality of Life Research Competition.

At DeWitt Clinton, Christine is a member of the Environmental Affairs Club, Math Team, Moot Court Team, and a technology club that is responsible for the school's web pages, newspaper, and broadcasting.

CARMEN LOPEZ is a senior at the High School for Environmental Studies in Manhattan, New York. A new student researcher on the Impacts team last summer, Carmen's project focused on the impacts of climate change on agriculture, under the guidance of Dr. Jennifer Phillips. Specifically, she studied maize (corn) production for dairy cows in New York State. Using climate change projections from the GISS General Circulation Model, she found an increase in temperature leading to increased evaporation, which when combined with a smaller amount of precipitation produces an unfavorable water balance and water stress in corn.

Upon graduation, Carmen plans to purse to a doctoral degree in history or archeology, and hopes to attend Tufts University. Her experience at GISS, she says, was very important—it showed her "how to do real scientific research," and prepared her for the work that lies ahead in trying to become an archeologist. Carmen's extra-curricular interests include music, singing, and playing the flute.

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Faculty

PATRICK CUSHING is in his fourth year teaching science at New Rochelle High School. Prior to this he taught at Boys and Girls High School for five years. Pat graduated from St. Michael's College in Winooski, Vermont with a BS in Biology in 1988. He then volunteered for the US Peace Corps, and spent two years teaching Math and Science, and serving as Assistant Headmaster at a Junior High/High School in Zebilla, Ghana. After returning to the US, he completed his Master's degree in Secondary Science Education at Columbia University Teachers College and is currently working towards an Ed.D.

Pat has been a researcher on the ICP Impacts team since summer 1998, studying the effects of climate change on crop production. This year he is teaching Biology, Living Environment, and General Science at school. Integration of related research has included a project where students are looking for correlations between precipitation and corn yield in the corn belt. Last spring, he attended the annual meeting of the National Academy of Research in Science Teaching, and has contributed to integrating Science Standards into educational materials developed at ICP.

CHRISTOPHER PETERSEN is in his 15th year teaching physics at A. Philip Randolph High School. This year he is teaching Regents Physics and a computer course: Cisco Networking Academy. He holds a BS in Physics from Harvey Mudd College, and an MA in Secondary Science Education from Columbia University Teachers College. A researcher on the ICP Clouds team since 1994, Chris has made a vast contribution to the program. In collaboration with GISS scientist, Dr. Andy Lacis, he is the author of the *Global Equilibrium Energy Balance Tinker Toy*

(GEEBITT), a spreadsheet based computer model used to study the effects of different climate variables on planetary energy balance. He is currently developing curricula for ICP's Earth Climate Course.

Working with Columbia/GISS scientist Dr. George Tselioudis, this summer he finalized an experiment for maximizing temperature differences between hot and cold planet models. Upcoming course modules include *Climate: Learning About the Future from the Past*, which uses ice core data and observed temperature changes, developed in collaboration with Drs. Mark Chandler (Columbia/GISS) and Dorothy Peteet (NASA GISS). Chris has presented curricula at staff development events for the NYC Board of Education over the past three years.

TERESA SMITH is an Educational Assistant (Paraprofessional) at the New Preparatory Middle School for Technology and the Arts (Jr. HS#8). She is also the Computer Lab Manager and Science Program Coordinator for the fifth and sixth grades. She is currently attending York College to complete her degree in Education. Teresa first became involved with the ICP through our community outreach program for elementary school students, Space Quest, in spring 1997. She has been a researcher on the Methane project since 1998. Her work this past summer focused on understanding the role of global wetlands in the declining growth rate of atmospheric methane. Working at GISS has shown her "the effectiveness… of problem-solving through doing real science." She is bringing her experience back to school by giving teacher and student workshops this year—these will include hands-on activities such as the "What Makes Our Planet Habitable?" session from the ICP summer program. She is also implementing an interdisciplinary enrichment program that engages her students in "real-life science investigations," incorporating climate concepts studied at ICP.