

Report to the NYSCAA on the 2007 National Youth Science Camp

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Introduction

One hundred eight delegates representing 49 states (Utah was not represented), Argentina (2), Bolivia (2), Canada (2), Colombia (2), Germany (2), Mexico (3), Panama (2), and Trinidad and Tobago (1), participated in the 2007 National Youth Science Camp (NYSC). An ambitious and creative program calendar allowed the delegates to participate in stimulating academic activities, exhilarating outdoors adventures, and exciting special events. This report provides an overview of the NYSC program and includes an evaluation of the program elements. Additional information, including hundreds of photographs and other multimedia resources is available online at www.nysf.com/2007.

Summary

Arrival:	Wednesday, June 27, 2007
Departure:	Monday, July 23, 2007 (27 days, including travel)
Number of Participants:	108 delegates including 16 international participants
Number of Staff:	33 not including custodial and kitchen staff
Lectures:	23 lectures
Directed Studies:	29 academic directed studies
Web Site:	www.nysc.org/2007

Delegates

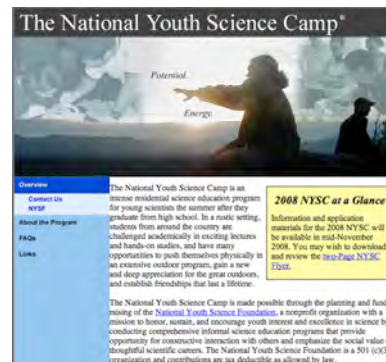
Selection

In late 2006, West Virginia Governor Joe Manchin III invited his fellow governors around the nation to initiate a competitive process for choosing delegates from each state to attend the 2007 NYSC. Each state identified a selection coordinator who managed their selection process. Each coordinator is sent an electronic packet of information that contains information, guidelines for selecting delegates, sample press releases, and a suggested scoring rubric. A downloadable version of the application material is also published on the NYSC web site (www.nysc.org).

Although the delegates selected to attend the camp have diverse interests and experiences, the standard selection criteria are:

- Intention to enter mathematics, one of the sciences, or a science-oriented profession,
- Demonstration of superior academic proficiency, including recognition in the areas of mathematics and science,
- Evidence of leadership ability, and
- Active involvement in both school and community activities.

Delegates representing Germany were selected with assistance from the West Virginia Development Office. A local scholarship committee selected the delegate representing Trinidad and Tobago. Committees constituted by staff of embassies of the United States selected all other international delegates.



Delegates to the 2007 National Youth Science Camp



Staff

The 33 members of the 2007 NYSC Staff (traditionally called “staph” because their enthusiasm is infectious) were an integral part of the success of the program. A core of experienced, returning staff members was augmented with numerous other talented applicants, including ten first-year staff members.

Staff members are selected through a competitive process that matches the applicant’s interests and abilities with the duties of each position. Information for prospective applicants is posted annually online at www.nysc.org/staph and includes position descriptions and an application form.



Academic Program

The formal National Youth Science Camp academic program consists of lectures, directed studies, and seminars. Researchers, academics, and practitioners from across the country volunteer their time to participate in the NYSC academic program. Delegates also have the opportunity to share their high school research projects with their fellow delegates (this is not a required component of the program).

Lectures

A *lecture* is a 50- to 75-minute presentation to the entire camp followed by a 15-minute question and answer session. It is usually a thought-provoking presentation of a scientist's work and the relation of that work to society. Lectures frequently inspire informal conversations between delegates and lecturers during meals and free time. A total of 23 lectures were presented at the 2007 NYSC.

Directed Studies

A *directed study* is a hands-on, interactive small group experience. It lasts 75 minutes on each of three consecutive days. A directed study is usually investigative in nature, providing an opportunity for full student involvement. During the study, the presenter provides a close guiding hand. The participants are able to pose questions, develop conceptual understanding through exploration, and draw conclusions. Through a lottery, delegates select from a collection of directed studies in each of three, three-day directed study blocks.



- Directed Study Block #1 (June 29 - July 1): Nine academic directed studies
- Directed Study Block #2 (July 4 - 6): Nine academic directed studies
- Directed Study Block #3 (July 9 - 11): Eleven academic directed studies

Seminars

A *seminar* is a presentation involving a small group. Seminars may be group discussions providing an opportunity for interaction and sharing among the participants. Unlike a directed study, seminars conclude at the end of a single meeting. They are less formal than either a directed study or lecture, and allow the presenter to choose from a wide range of topics. These may include technical subjects, hobbies, philosophies, and personal experiences. Guests are typically invited to present directed studies or lectures and volunteer to present seminars spontaneously.

Outdoor Program

A challenging outdoor recreation program complements the NYSC's academic activities. Held at Camp Pocahontas in the eastern mountains of West Virginia in the heart of the Monongahela National Forest, the NYSC is well positioned to take advantage of the numerous recreational opportunities in West Virginia. From its ancient mountains to its white water rivers, West Virginia's natural environment provides the perfect living laboratory and physical challenges for the NYSC delegates. Seneca Rocks, one of the largest rock faces in the eastern United States, is about 32 miles north of Camp. Also nearby are numerous non-commercialized caves, backpacking trails, and beautiful mountain streams. The New River, one of the oldest in the world and part of the National Wild and Scenic Rivers system, is only three hours travel to the south.

The following activities were part of the 2007 NYSC Outdoor Program:

Backpacking/Camping

Hiking trips take advantage of numerous trails located in the Monongahela National Forest. These trips cover a variety of terrain and enable students to observe wildlife ranging from deer to black bears to rattlesnakes. The local plant life includes old growth spruce forests, rhododendron, mountain laurel, and Indian pipe.



Rock climbing

The rock-climbing program makes use of the Nelson Rocks Preserve (www.nelsonrocks.org) known throughout the Northeast for its spectacular views. Located in the scenic North Fork Valley of Pendleton County, Nelson Rocks Preserve features climbing



routes of varying difficulties and facilitates instruction in climbing and rappelling techniques. In addition to traditional rock climbing, some delegates had the opportunity to hike on the Nelson Rocks *Via Ferrata* – a long climbing/hiking route with permanently fixed safety cables, including a 230-foot suspension bridge from one sheer rock face to another. The hike offers unparalleled 360° views of West Virginia mountainsides, rock faces, and valleys. The hike includes an overhang and a climb through *Scheisse*

Notch where participants are completely exposed to cliffs towering several hundred feet above the ground while safely secured by harnesses and tethers.

Caving

The caving program involves exploring local non-commercial, naturally formed limestone caverns. Some of these caves are very wet and most include both tight crawlways as well as large rooms. The caving staff members teach and model principles of safe, responsible spelunking, including wearing protective clothing (coveralls and helmets with lights) and minimizing impact (avoiding areas with bat populations and exercising a leave no trace philosophy). In 2007, groups explored Stillhouse Cave, Keys Cave, Trout Cave, New Trout Cave, and Hamilton Cave. In the photograph at left, a delegate works his way through a very tight squeeze.



Kayaking

Approximately 60 delegates participated in a guided kayaking trip down the New River. Volunteers from the West Virginia Wildwater Association (www.wvwa.net) facilitated this activity by providing equipment and guidance. The delegates travel by bus from Camp Pocahontas to Thurmond, West Virginia. In the photograph at right a delegate gets individualized instruction on the techniques of kayaking.



Mountain Biking

The mountain biking program takes delegates over a variety of terrain in Middle Mountain Area of the Monongahela National Forest. The routes cover old railroad beds, including the West Fork Rail-Trail, mountain roads and grassy trails, and downhill, single-track trails with numerous switchbacks. Delegates who go mountain biking as part of an overnight camping trip bike nearly 30 miles in two days.

Other Recreation Activities



Outdoor recreational activities also occur at Camp Pocahontas most afternoons. Volleyball, soccer, softball, kick ball, bocce ball, Yoga, and Ultimate Frisbee are some of the activities offered by staff members. These activities allow delegates and staff members to interact in a relaxed atmosphere and encourage life-long physical activity. In the photo at left, delegates and staff compete in the annual delegate/staff Ultimate Frisbee match.

Special Events

Delegates to the National Youth Science Camp attend several special events in honor of their accomplishments and potential. Additional photographs are available online at www.nysc.org/2007. Special events held in 2007 include:

- Tour of the Dow Chemical Company's South Charleston Technology Park (photo top left)
- Tour of the National Radio Astronomy Observatory (photo top right - www.gb.nrao.edu)
- Concert in the Sinks of Gandy Creek by Folk Musician Peter Mulvey (photo lower left - www.petermulvey.com)
- Picnic on Spruce Knob – highest point in West Virginia
- Flag Ceremony at Camp Pocahontas on Independence Day (photo lower right)
- Independence Day Celebration and Reflections at Camp Allegheny
- Laura Dill Dinner Theater
- Excursion and Picnic Dinner on the Cass Scenic Railroad
- Farewell Banquet at the Scottish Rite Bodies



Washington, DC

The proximity of the NYSC to Washington, DC, permits the delegates to visit the nation's capital. During their three-day stay in Washington, DC, delegates and staff members stay in residence halls on the Foggy Bottom campus of the George Washington University. Events in Washington, DC, in 2007 included:

- International Science Policy Panel Discussion at the National Academy of Science (www.nas.edu) hosted by Dr. Amy Flatten, American Physical Society (www.aps.org)
- Tour and lecture at the United States Supreme Court (www.supremecourtus.gov)
- Walking tour of the Monuments on the National Mall
- Small Group Tours of the Smithsonian Museums (www.smithsonian.edu) including a behind-the-scenes viewing of the work of M. C. Escher led by NYSC alumnus and presenter Mr. David Masunaga (photo at right)



- Luncheon with the United States Senate (www.senate.gov) hosted by Senator Robert C. Byrd (In the photograph at left, Senator Byrd stands with the 2007 NYSC's West Virginia delegation, from left, James Koval, Senator Byrd, Alex McPherson, and John Cavendish)
- Senate Luncheon keynote speaker – Dr. Michael Griffin, NASA Administrator

Public Information

Press Releases

Press releases were prepared for each of the delegates. In previous years, hard copies of these press releases along with printed photographs were mailed to members of the media identified by the delegates (this information is now also being used to develop a media resources database). In 2007, the PI staff (coordinator, photographers, and office staff) implemented a new approach that leveraged digital resources. Using information gathered through delegate surveys and the delegate database, the PI staff created an automated process that generated a press release for each student. These press releases were placed on individual web pages where members of the media could easily copy the text of the press release and download a high-resolution digital photograph (suitable for publication). These press releases are available online at www.nysc.org/2007.

Evaluation

Each year, NYSC delegates complete surveys considering all aspects of the NYSC. The surveys are designed and administered by NYSC staff, and the compiled results are thoroughly reviewed in staff meetings at the conclusion of each year's NYSC and during staff training activities before the start of the program the following year. Delegate feedback is thoughtfully considered during the planning process when making decisions regarding everything from dinner menus to the visit to Washington, DC, to the structure and composition of the academic and outdoor programs and special events.

Surveys were administered to all NYSC delegates at several points throughout the 2007 program. Unless otherwise noted, all delegates participate in each program activity and were asked to provide feedback. These results of the surveys are quite positive and continue to document the broad strengths of the NYSC program. Summaries of the surveys of the academic program are provided below (5 = strongly agree, 1 = strongly disagree).

Lectures

- 4.44 The lecture topic was interesting and appropriate for presentation at the NYSC.
- 4.34 The content of the lecture was appropriately challenging for NYSC.
- 4.34 The lecturer was effective in communicating the topic (clarity of presentation and use of relevant examples, etc.).
- 4.37 I would recommend inviting this presenter to lecture again at the NYSC.

Directed Studies

- 4.65 The directed study topic was interesting and appropriate for presentation at the NYSC.
- 4.39 The content was appropriately challenging for NYSC.
- 4.51 The directed study activities were effective in communicating the topic (clarity of presentation and use of relevant examples, etc.).
- 4.51 The presenter effectively engaged the delegates throughout the presentation.
- 4.57 I would recommend inviting this presenter to lead a directed study again at the NYSC.