8:00 P.M. LAWN CONCERT

Princeton University Orchestra
Michael Pratt S82, Conductor

Featuring: Music from the movies Star Wars and Star Trek and selections from the Fiddler on the Roof.

9:15 P.M. FIREWORKS

By the Santore Brothers of Garden State Fireworks

Choreography by Chris Santore

Text of the program notes is available at http://m.princeton.edu/reunions. Fireworks soundtrack simulcast at www.wprb.com
CONCERT PROGRAM

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Michael Pratt S82, conductor

“The Star Spangled Banner”            Francis Scott Key

Overture to *The Magic Flute*        W.A. Mozart

*Star Trek* Through the Years        arr. Calvin Custer

Two *Slavonic Dances*                Antonín Dvořák

*Fiddler on the Roof*, selections    Jerry Bock
    Jackie Levine ’16 Conductor

*Star Wars* Medley                   John Williams

“The Washington Post March”          John Phillip Sousa

“The Stars and Stripes Forever”      John Phillip Sousa

“Old Nassau”                          Harlan Peck, Class of 1862/
                                      Karl Langlotz

PRINCETON UNIVERSITY ORCHESTRA

The Princeton University Orchestra began with a group of professional musicians from the New York Symphony and Philharmonic Societies who performed a series of concerts at Alexander Hall in 1896. The proceeds were “devoted to the funds for the establishment of a School of Music for the Study of Musical Composition, Theory, and History at Princeton University.” Over the ensuing century, the Orchestra has become an almost exclusively student organization, some 100 undergraduate and graduate musicians representing a broad spectrum of academic departments come together for concerts in Richardson Auditorium in Alexander Hall.

Participation in the Orchestra is voluntary and extracurricular, students commit many hours to rehearsal over and above the time required for academic coursework. Graduates of the Orchestra have gone onto be performers, music teachers, and arts administrators, but the comprehensive list of occupations is as diverse as Princeton itself.

Tonight completing 39 years under the direction of Michael Pratt, the Orchestra performs from 10 to 16 times each year both on campus and touring. In 2015, the Orchestra combined forces with the Glee Club and Chamber Choir to perform Verdi’s monumental Requiem to packed houses in Richardson Auditorium.

The Orchestra serves an important role in Princeton’s Department of Music by both reading and performing new works by graduate students in composition. It periodically engages in special collaborations across campus with other performance-oriented groups and departments, and is also typically called on to perform at special University functions.

The Orchestra has represented Princeton in New York concert halls and on tour across Europe, from Edinburgh to Lisbon, and from London to Prague and Vienna. In January 2015, the Orchestra toured Ireland, performing in Dublin and Belfast.

GARDEN STATE FIREWORKS

In 1890, more than 25 years after apprenticing to the Italian king’s master fireworker, Augustine Santore opened his first fireworks plant in New Jersey. The Santore family continues to supervise fireworks construction at their company, Garden State Fireworks (GSF).

The Santore brothers are renowned for their Italian style, multi-break “exhibition” shells. They are now also major producers of stage pyrotechnics, quick-match fuses, exhibition candles, and set piece materials. They are major suppliers to many other display firms, including the Disney organization, today the world’s largest consumer of fireworks. In 1985 the Santores added a new dimension to the fireworks world: a pyrotechnics display perfectly choreographed to a musical score, which soon became a cornerstone of the Santores’ world-class productions. In 2006 computer-based synchronization arrived. Most recently GSF has become known for close-proximity effects used in stadiums and on concert stages.

For Princeton, the Garden State Fireworks collaboration began with the Office of the 250th Anniversary in 1996. GSF is legendary in the world of pyrotechnics for having won four International World Fireworks championships in four competitions (two each in San Sebastian, Spain and Monte Carlo, France). Current displays of note include the National Mall in Washington, D.C. (July 4); Mandalay Bay Resort (Las Vegas, July 4); Inn of the Mountain Gods (July 4, largest in New Mexico); Dana Point, Orange County, CA (July 4) and the New London, CT, Sailfest (July 9), plus weekly summertime shows in the NY/NJ area at Coney Island Beach, NY (Fridays, June through August). GSF produces stadium shows for Major League Soccer teams around the nation, plus the MLS All-Star and Cup Championship game, and often directs stage pyro for concert tours.
Welcome to the 2016 Reunions Fireworks. Each year your fireworks team of Dorothy Bedford ’78, Executive Producer, and Christopher Santore, Choreographer, work closely to create an exciting, custom show. We thank the Alumni Association for its generous sponsorship of the fireworks display. Here’s some background.

Each winter we consider class reunion themes, and other timely events or anniversaries to find music for our custom soundtrack. The 2016 Reunions themes range from “It’s a 01-derful Life” (Class of 2001) to “Apollo 11” (Class of 2011). Sometimes a song doesn’t work out, such as the Class of 2006’s theme from “Madmen”. This year we honor David Bowie’s life with “Just Dance.” Long before Prince’s passing “Purple Rain” was also on our short list.

Starting in the winter, we trade song ideas and build a pool of possible themes from “Madmen”. This year we honor David Bowie’s life with “Just Dance.” Long before Prince’s passing “Purple Rain” was also on our short list. Each display is crafted from scratch and takes several hundred hours to produce, lasts between 22-24 minutes, and is only seen once. It is not unlike producing and opening a play for one night only, with no dress rehearsals. The total number of aerial and ground shells we launch: over 5,000. Chris Santore’s choreography notes appear separately.

On the “Glossary of Fireworks” page, you will find a simple glossary of common terms and effects. However, many custom shells custom are designed and manufactured by Garden State specifically to the Princeton 2016 soundtrack. They aren’t listed! We encourage each spectator to form their own interpretation of the display as you experience it, armed with a better understanding of the creative process.

Sincerely, Dorothy Bedford ’78 and Chris Santore

A Message from the Fireworks Producer and Choreographer

Our title of ‘FireDANCE’ comes from the finished set list: so much of it is dance music this year.

Once we have a final sound track, Chris Santore, a fourth-generation pyro-technician, goes to work on the choreography to interpret the story embedded in the music. One minute of display time may require between 2-5 hours of choreographic planning. He balances aerial and ground effects, considering colors and sound, size and shape. Listening repeatedly to the sound track, he constantly reworks how he imagines the sky illuminating. A state of the art pyro-musical choreography software suite which allows split-second timing of bursts is an essential tool, but ultimately the creative vision first unfolds in the mind’s eye, waiting to be born in the night sky.

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Notes on the Fireworks Soundtrack and Choreography

I Also Sprach Zarathustra, Op. 30 (Richard Strauss). The stirring musical theme to 2001: A Space Odyssey salutes the Apollo 11 theme of the Class of 2011. As the brass opens, golden ground comets match the key notes of the repetitive fanfare at alternating angles, while custom timed salute shells above pace the beat of the timpani. As the final crescendo heralds the sunrise, red and gold strobe shells paint the sky.

II The Orange and the Black (C. Mitchell, Class of 1889, arr. E Carter, 1888, sung by The Roaring Twenty). This traditional Princeton favorite ornaments our custom soundtrack. Orange is a difficult color to produce in fireworks, not often seen, so we use it lavishly. Look for orange peonies and imported Japanese orange strobes.

III The Eye of the Tiger from Rocky III (1982, Survivor). Last heard here in 2010, this theme honors the Class of ’71’s theme, Wild Life, and the palindromic Class of 1991’s, Tiger Regit. White strobe waterfall shells open high over the pulsing bass intro while white strobe flares flash in the foreground. Single hits of red mines outline and punch in on each crunching note of the opening guitar riff. A curtain of orange ground mines erupts on the height of the last chorus.

IV On the Road Again from Honeysuckle Rose (1980, Willie Nelson). Celebrating the Class of ’66’s 50th Reunion, this award-winning Nelson classic is familiar to generations through its many film, TV and video game covers (Forest Gump, Shrek; South Park; Guitar Hero World Tour, among others). After opening with silver crossette shells, the chorus features Garden State’s custom spinning wheel set pieces in the foreground. As the song fades, ring pattern shells burst above, evoking wheels on the open road.

V Let’s Dance (David Bowie). Said Bowie, who crossed a music barrier by asking Stevie Ray Vaughan to play guitar on the album, “this song was virtually a new kind of hybrid, using blues-rock guitar against a dance format.” Let’s Dance features swimming shells and bees shells dancing across the sky. Smile face patterns arrive for the lyrics ‘while Golden Wave to Red and Blue shells hit the sky.

VI Bailando (“Dancing”), (Enrique Iglesias). Billboard termed the music video of Bailando one of the best choreographed encounters since the Sharks met the Jets, and the Spanish version has been viewed over 1.4 billion times. Bailando celebrates the Class of ’86’s 30th Reunion: Tres Equis. Red dahlia shells bloom over fan arrays of white glittering comets. Spinning Whirlflower shells ‘dance’ to the chorus while spinning serpents leap in the foreground. The first verse features a rapid sequence of ground mines dancing back and forth at alternating angles. The subsequent verse is met with a roll of cracking dragon egg effects both high and low. Pastel crossette shells paint the last pre-chorus while custom crossette ground comets rise from below.

VII Don’t You (Forget About Me) from The Breakfast Club (1985, Simple Minds). While the Class of ’96’s 20th Reunion theme of ’96-teen Candles reflects one iconic John Hughes film, the theme from another celebrated 1980’s Hughes movie was a better fit for our soundtrack. (Most recent cover: Pitch Perfect, 2012). Red strobe ground flares and red strobe shells carry the first verse with red and blue comets running in wide angles in the foreground. Rare Japanese Gold Strobing Diadem Shells hang like animated tinsel in the breakdown. The energy of the final ‘la-la la’ refrain is peppered with rapid swaying comets in the foreground while Golden Wave to Red and Blue shells hit the sky.

VIII Shake it Off (Taylor Swift). Celebrated pop artist Swift won “Favorite Song” at the 2015 People’s Choice Awards with Shake it Off. Japanese multi-layered ‘delayed’ cracking effects open the track. Red crossette shells cover the sky for the first verse. Garden State’s custom ‘red flashing loms’ highlight Swift’s spoken break down and give way to a rapid fire mid-finale with the final chorus.

IX Purple Rain from Purple Rain (1984, Prince). Often ranked among the best albums in music history (and the sixth best-selling album of all time), we chose Purple Rain to salut the 35th reunion: ‘81 Reigns; it now also represents our tribute to Prince. Garden State displays multiple visions of purple rain, beginning with custom Purple and Gold Flitter streamer shells, and finishing with majestically graceful ‘weeping willow’ brocade shells filling the air, accented by the comets of magenta Umbrella shells.

X Old Nassau (Peck 1866/Langlotz. Tigertones/Tigerlilies & the Princeton University Band). No Princeton gathering is complete without this song. Orange display shells honor Princeton’s colors.

XI Shut Up + Dance (Walk the Moon). The “hot” song of summer 2015, this is a great cut to complete our “FireDANCE” show. A variation on “bees” shells cut back and forth overhead after the first verse. Garden State’s custom “red photo flash pots” in the foreground create a startling flash of bright red on the “slap” sound, followed by a chorus thrashing with a skyclf of Variegated crossette shells. A wild flurry of screaming whistle shells chase the guitar solo which runs feverishly into a raging grand finale and final chorus.

We hope you enjoy the presentation. Please feel free to leave feedback via email to csantore@gardenstatefireworks.com, referencing Princeton.
**Aerial Display Shells:** Aerial display shells range in diameter from 3” to 12”. Their timed fuses dictates when (how high) the shell will explode after ignition. These “rise times” are integral to the basic principle of musically choreographed displays. The shells can be combined in many ways for an endless variation in sound and light effects.

**Bees:** This shell opens softly; the large-ish stars “swarm” asymmetrically and randomly.

**Chrysanthemum:** A spherical shell in all colors, color combinations, and sizes; can be layered (doubles, etc.). The stars have glowing tails. Compare to Peony.

**Comet:** A broad tail of silver or gold. Variations are Palms and Crossettes.

**Crackle Shell:** A golden cracking effect, like a burst of static or Rice Krispies®.

**Crossette:** A silver or gold effect of several large Comets bursting outward toward end points where the comets crack into “x’s” (little crosses).

**Dahlias:** A spherical shell, similar to a Peony’s tail-less stars, but stars are larger and brighter.

**Flash Salute (Titanium Salute):** The big noise-maker, fast, compact, and bright with a thunderous boom. Titanium salutes include gold sparks.

**Golden Wave Swimmer:** Opens hot, fast & round, then the big stars zoom randomly.

**Palm Tree:** A burst of short-duration aerial Comets in white or gold, resembling palm fronds. Combines with other shells to make tree trunks or flower pistils.

**Pattern Shell:** Specific shapes, such as a ring, heart, or star. Sometimes, the shell burst distorts the pattern. Also, because this shell explodes on a single plane, it is only properly viewed from certain angles. Hint: Look for a possible buttercup.

**Peony:** A spherical shell available in all colors, sizes, combinations, and multiple layers. A Peony’s stars are tail-less; they explode as points of light, often changing color. See Chrysanthemum.

**Roundel:** A ring or cluster of small, colored Salutes (maroons), which burst simultaneously. Compare to Steen.

**Screamers:** A screaming effect whizzing away from the burst.

**Serpents:** Spinners of white or gold whirling across the sky.

**Shell of shells:** Contains internal shells, which produce secondary bursts.

**Sleen:** A ring or cluster of small colored Salutes (maroons), bursting in sequence. Compare to Roundel.

**Spider:** Much shorter in duration and size than Weeping Willow; fewer stars with narrow, glowing, falling tails of goldish-orange (a charcoal effect).

**Strobe:** Cluster bursts of yellow, white, green, or red rapidly blinking on and off.

**Whistles:** Similar to Serpents, but the spinners whistle loudly.

**Waterfall:** A soft-breaking, narrow stream of bright white or golden glitter raining down. Compare the broad weeping willow, or the narrower, orange Spiders.

**Weeping Willow:** Willows vary, but all share the long-dripping stars of silver or gold falling almost to the ground, AKA brocade. Diadems or Crowns are weeping rings.

**Ground Displays:** A ground display includes two main types: stationary “set pieces” such as a spinning wheel or frames of a specific image in fire; and ground-to-air effects such as traditional Roman candles. Ground displays or “fronts” are crucial to any musically choreographed show, as they allow for dramatic up-close interpretations of the music. The effects are instantaneous and work well to emphasize beats and set a mood.

**Exhibition candles:** Large Roman candles that send a range of colors or glitters in repeating fashion. Used from multiple locations to create unique tapestries.

**Mine:** A sudden explosion of many colored stars used to either emphasize a beat or create a wall of color in a startling fashion. If aerial, known as a star mine.

**Flame Mortar:** A quick red or green flame emitting from the ground (used on stages)

**Cake:** A repeater sending up multiple effects. The variety of this display is endless, including all effects seen in aerial display shells in smaller versions.

**Comet:** A giant tail leaves a broad trail of gold or silver. Variations include a split comet (splits into pieces at its apex) or the tiger tail (whose narrow spiral gives a striped effect).

**Dedication**

The Santore family dedicates this display to the memory of James Capozzoli and James Mullikin. Their friendship, love of pyrotechnics and dedication to the art will be forever remembered. C.S.

To the memory of C.K. Williams, one of Princeton’s distinguished poets, whose work lit up our lives in so many ways. D.B.

**Medical Service & EGRESS MAP**

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**Medical Service**

Princeton Reunions activities enjoy a large attendance, and medical emergencies both large and small can be expected. If you or a companion need assistance for a bee sting, cardiac symptoms, or anything in between, medical help is available. For the Lawn Concert and Fireworks at Finney Field, emergency aid workers are stationed at the following locations marked by red cross signs:

- Princeton Stadium (north plaza)
- FitzRandolph Road Gate (opposite side of field). If you experience any discomfort during or after the presentation, emergency workers are ready to assist you.

First aid services are provided by Princeton First Aid and Rescue Squad.

**Credits:** Dorothy L. Bedford ’78, event producer; Christopher Santore, fireworks choreographer; Kristin Cass, associate producer. Soundstage courtesy of Skylands Audio. Printing: Office of University Printing and Mailing, Forrestal Campus.

**Special thanks to:** Melissa Dungao and Joe Woodward (Purchasing); Missy McGinn (Risk Management); Kristen Appelget and Erin Metro (Community and Regional Affairs); Devin Livi (Grounds and Buildings); Mibs Sutherland Mara K26 and Kimberly Collins h49 h07 (Alumni Affairs); Greg Paczkowski and Jeff Graydon (Athletics); Kathy Aggar (Building Services); Ken Grayson (Electrical Shop); Duncan Harrison, Scott Loh and Sal Caputo (Public Safety); Greg Cantrell and Kelly States (Environmental Health and Safety); and Harrison Waldon ‘17(WPRB).

Also special thanks to Bill Drake, Princeton Municipal Fire Marshal, and the many safety personnel who make the University’s fireworks presentations possible.