

PE MATTERS

STATE
NEWS

NSPE-CA CALIFORNIA SOCIETY OF
PROFESSIONAL ENGINEERS

>>>> MAY 2019

NSPE-California President's Update

Dear California Engineers,

As we head into summer and the close of our fiscal year, we're excited to bring you a few more engagement opportunities in the Greater Los Angeles area as well as an invitation to join us in the San Francisco Bay Area for our year end board meeting. This month, in continued partnership with our sister society ISA, you can hear from a former U2 Air Force Pilot and learn about how Lockheed builds safety into their F-22 Raptor.

This month, we also get to hear from NSPE-California member David Cotton, P.E. on his journey in the telecommunications industry as a radio frequency engineer and the "ethical mandate" of PEs in new emerging technologies.

And save the date for **June 22, 2019**. If you will be in the San Francisco Bay Area, we'd love to welcome NSPE members to participate in our end of year board meeting and strategic planning workshop. If you'd like to see how NSPE-California runs behind the scenes or would like to contribute your own leadership expertise to the cause, we invite you to join us! Please let us know you're coming by [registering here](#) before June 15.

Wishing you a happy spring and hope to see you at one of our member events this month.

Austin



Austin S. Lin, State President (2017–19)
Your California State Society of NSPE

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Upcoming Events

NSPE-CA & ISA Los Angeles Joint Meeting: Presentation by Col. Mike Phillips, former US Air Force U2 Pilot

[Los Angeles] **Thursday, May 30** 5:30 p.m. – 8:00 p.m.

[Register here.](#)

Networking: 5:30 – 6:00 p.m.

Dinner: 6:00 p.m. – 7:00 p.m.

Presentation: 7:00 p.m. – ~8:00 p.m.



“Col. Mike 'Lips' Phillips is a 30 year veteran of the US Air Force. This high flying U-2 spy pilot saw the four corners of a hostile world from over 70,000 feet up and has lived to tell his tale. His adventures saw him flying secret missions behind the Iron Curtain during the Cold War and over the deserts of the Middle

East during a couple of hot ones too... During most of his career he was not allowed to speak of such things but a changing US world view now permits Col Phillips limited speaking engagements. Come hear what it's like to go to work everyday in a space suit, where a pin hole could cause your blood to boil and your food is served in a tube. Col Phillip's startling honesty makes it fun, interesting and yet he still speaks in a down to earth manner which you just won't find anywhere else!"

Location

Steven's Steakhouse

5332 Stevens Pl

Commerce, CA 90040

<http://stevenssteakhouse.com/>

There is ample parking behind the restaurant.

**Making the Lockheed Martin F-22 Raptor:
Establishing a Functional Safety Program in Manufacturing**

[Los Angeles] **Tuesday, May 21** 5:00 p.m. – 7:00 p.m.

[Registration here.](#)

This program, hosted at Cerritos College, will discuss establishing and maintaining a program at industrial manufacturing companies. The focus will be a case study on the Lockheed Martin F-22 Raptor and will include standards on instrumentation Speaker will describe an actual safety project used in the manufacturing of components used in the Lockheed Martin F-22 Raptor. Will also discuss standards on IEC Standard 61508 on instrumentation and IEC 26262 on automotive controls. Pizza and beverages included with your ticket.

Free to NSPE-CA and ISA Members. Non-Members \$10 at the door.

**The California Engineer:
Standing out in your PE Career, Adapting to New
Technology and the Fight Against “Occasions for
Malfeasance”**

NSPE-California member David Cotton, P.E. talks about his journey to professional licensure and how adapting himself to a changing economy positioned him to take an ethical stance in the design of new technologies.



After graduating college with a degree in electrical engineering in 1983, David Cotton, P.E. decided that he could best put his talents to work directly out in the field versus in a classroom or academic research lab.

Cotton left Connecticut for a role in the Air Force Acquisition Command in Warner Robins, Georgia, just outside Macon. There in the field, he saw theory and practice come to life when we was deployed to Operation Desert Storm in Iraq where he took part in building one of the largest tactical networks ever built, from basic phone service to satellite communications, switches, and wireless communications.

“In the early 1990s, working as a radio frequency (RF) engineer was a lucrative profession, but as the late 90s dotcom bubble hit, lots of communications technologies such as wireless systems began to be commoditized.” says Cotton. “Salaries were halved.”

Despite having stand-out expertise in RF systems, he needed something else to differentiate his professional brand and to stand out among his peers even further. He chose to complete his field experience by earning his Professional Engineering license.

When Cotton moved to Wyoming to take a role at a cellular operator, his professional environment was a driving factor in leading him down the path to a PE: “There were two to three PEs in the office and my boss was a PhD PE and he encouraged others to get their PE licenses.” He saw that the firm was setting itself apart by employing PEs and Cotton saw that this same strategy could apply to his own career growth. This move to advance himself in the field also started to take the shape of a PE’s ethical duties to public safety and well being.

Says Cotton, “When I started working [in the RF industry] I understood how you designed the cell sites wasn’t just an engineering challenge but also involved public safety. There was a balance. Some jurisdictions wanted smaller sites which weren’t as safe as taller ones where emissions were further from the ground. Because of my [PE] license, I had a mandate to care about public safety in my engineering

designs. No company selling a product wants to hurt their customers and I could emphasize that to our clients.”

Speaking from the perspective of public safety helped link the work of an engineer to what the public would experience in their day to day lives. For Cotton, it wasn't about just promoting new technologies, but showing the public how those technologies could be integrated safely during public use.

When asked to reflect on the current state of PE licensure and future professional engineers, Cotton advocated continued public understanding and trust building. “The first challenge we have is that there are working engineers that don't even fully understand what a licensed PE does. You don't hear enough about it in engineering schools and that is really the best place to start.”

When asked about his thoughts on the future of the PE's role in emerging technology, “As the presence of technology increases in society so will occasions for malfeasance.” Mistakes, Cotton points out, either due to system flaws or the behaviors of bad actors could negatively impact society if PEs aren't vigilant. “Self driving cars are less of an issue than the underlying wireless [communications infrastructure] that supports them. If something goes wrong at the basic comms level, the entire network can be put at risk.”

So how to best prepare for PEs in this world of changing technologies? Reflecting back on his own journey of staying adaptive to one's surroundings, Cotton cited again the necessity of improving the education of students entering the workforce. “That will be key to protecting the safety of the public, no matter the technology involved.”

David Cotton, P.E. is an electrical engineer and holds professional engineering licenses in multiple states, the District of Columbia, and three Canadian provinces. He is a Senior Member of IEEE. With IEEE, Dave is a member of the International Committee for Electromagnetic Safety and the Communications Society. Dave received his BSE, Electrical Engineering, University of Connecticut, and two masters degrees, an MS, Telecommunications and an ME, Engineering Management, both at University of Colorado. He is registered as Chartered Engineer through the Engineering Council (UK) and the IET, and a Fellow/CPEng with Engineers Australia.

Upon graduation from Connecticut, Dave earned a commission in the US Air Force as a second lieutenant and was stationed at Electronic Systems Center, Hanscom AFB, MA. In 1989, he was transferred to the 5th Combat Communications Group, Robins AFB, GA. During this assignment, he served in

DESERT SHIELD/STORM. He left the Air Force in 1992, and went to the Atlanta area to work in the wireless sector. He first worked as an RF Engineer for BellSouth Mobility and PriCellular. He has worked in the wireless industry for over 20 years and in military telecommunications for 9 years. He is a Senior Rail Systems Engineer, working for LTK Engineering Services in San Francisco. He lives in Redding, California.

The California Engineer is NSPE-California's showcase of NSPE members and their personal stories and experiences as professional engineers. Would you like to share your personal story as a California Engineer? Reach out to us using this [interest form](#) here.

Share Your Expertise, Raise Your Visibility, Grow Your Professional Brand: Become a speaker in our 2019-20 NSPE-California Events Program!

Do you have a topic you would like to present to your fellow California Engineers? [Submit your proposals.](#)

This year we'll be focusing on four main themes:

I. Future of the Professional Engineering License

II. The Impact of Emerging Technologies on PE Licensure

III. Lawyer Engineer: At the Intersection of the State Regulations, Public safety and Professional Engineering

IV. California Projects: Success Stories and Lessons Learned from Projects Across the Golden State

If you have a topic that you would like to share in any of these areas, reach out via this form below. We will have a rolling application process and an option to present locally in person at your home region or virtually.

We can't wait to hear about what our California Engineers have to share with the rest of the engineering profession!

Up for a Leadership Challenge?

Announcing New Openings for Regional Leadership Roles representing Northern California, Monterey and San Luis Obispo/ Central Coast.

Are you an NSPE-California interested in a high-visibility leadership role?

We're looking for a current NSPE volunteer member who would be up for the challenge of organizing and leading PE events in these local regions:

- **Monterey Peninsula Region**
- **Central Coast Region** (covering San Luis Obispo / Paso Robles and surrounding areas)
- **San Francisco Bay Area**
- **Greater Sacramento Area**

Up for the challenge? [Introduce yourself to us here!](#)

Leadership Benefits to Participants

- The role provides the opportunity for ambitious individuals with a passion for project management, networking and technical development to broaden their professional scope, become the face of NSPE-California in the region and help energize and connect local Professional Engineers and EITs to one another.
- A great way to grow your personal brand while gaining practical leadership skills outside of your daily work commitments.

Responsibilities

- All the exposure and volunteer experience of leading a regional technical non-profit without the excess bureaucracy.
- Manage a budget which funds local member-value driven activities
- Plan and host local speakers, ranging from mini-conferences and dinner events to informal coffee meetups in the region
- Serve as a representative of your region to the NSPE-California Board of Directors, with visibility to NSPE National.

Minimum Qualifications

- NSPE member in good standing with membership dues up to date for the current fiscal year (July 1, 2018 - June 30, 2019)
- Holds an EIT or PE license (in any state)

NSPE-California Community

As a valued member of CSPE, we invite you to participate in our new [online members-only community](#) discussion board for California Engineers. We'll be using this spot for introductions and discussion topics ranging from artificial intelligence, PEs and emerging technologies, and other local issues important to California Engineers.

Engineering, Law, & Technology (EL&T)

NSPE's Monitoring Page for legislation that may negatively impact professional licensure is [here](#).

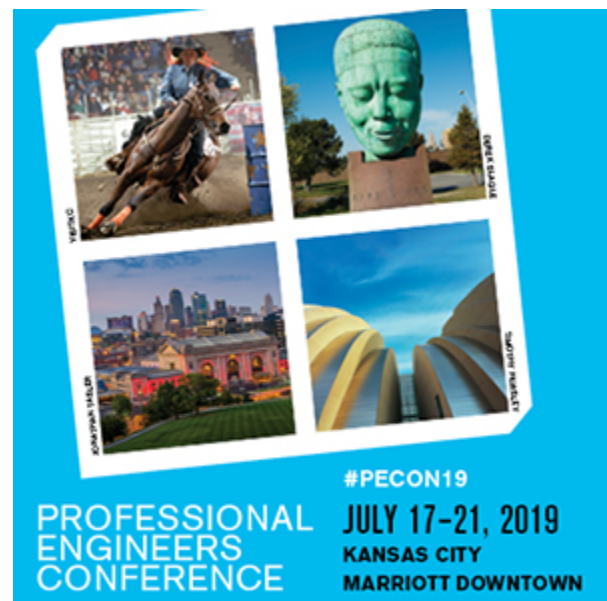
DISCLAIMER: EL&T is meant to raise awareness and foster a professional discussion on legal topics potentially impacting professional engineering licensure. It is not intended to provide legal advice or professional guidance. Legal actions highlighted in California PE Matters do not necessarily reflect the opinions or imply endorsement by NSPE, NSPE-California, or its affiliated organizations, members, and/or partners.

Advance Your Engineering Career at PECON19

The ability to manage projects and lead teams is crucial to advancing your career as a professional engineer. Even if you have years of experience in the field, there are still opportunities to enhance your knowledge. The PE Conference includes an entire track of leadership and risk management sessions to give you the tools, resources, and best practices to further your career.

PE Conference sessions include

- [Engineering Ethics and the Law](#);
- [How to be an Effective Witness](#);
- [How to Lead Without Authority](#);



- [Managing Project Risk](#);
- [How Not to Fail as a Leader](#);
- [Passing Down Institutional Knowledge](#).

Visit the [PE Conference website](#) for a full listing, including descriptions, of these and other sessions designed exclusively for PEs. [Register today](#) !

A One-Stop Shop for Continuing Education

Stay current with essential professional development opportunities through NSPE webinars. Members receive a special rate on the upcoming live webinars:

[Providing Feedback at Work: The STEER Methodology](#)

May 22 at 2 p.m. Eastern

What if you could find better ways to get your staff to act with more proficiency? The results for your business would be significant. Happier customers. More satisfied co-workers. And, you would be relieved of some sources of stress.

This presentation on providing feedback in the workplace suggests tools that you can use to give more effective feedback to your colleagues and other personnel. STEER is an acronym that represents five main elements of feedback: specificity, timing, explanation, emotion, and reinforcement.

[NICET: Developing a Qualified Workforce](#)

May 29 at 2 p.m. Eastern

Through credentialing with the National Institute for Certification in Engineering Technologies (NICET), professionals in engineering technologies can set themselves apart as the most exceptional technicians in their field.

Join NICET's Chip Hollis as he discusses the ways in which credentialed technicians earn certifications to further their careers, earn the respect and confidence of employers, and continue to safeguard the public.

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