

The NEBB Professional

2018 – Quarter 1

The official magazine of



Cover Story **OSHA & NEBB: The Importance of Playing It Safe**

- George H. Hightower, PE: A Class Act
- Firm Recertification: Second-Year Success
- Certification: The Past Meets the Future
- NEBB Announces NEW YPN Grassroots Program
- 2018 Annual Conference Advance Program

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The NEBB Professional

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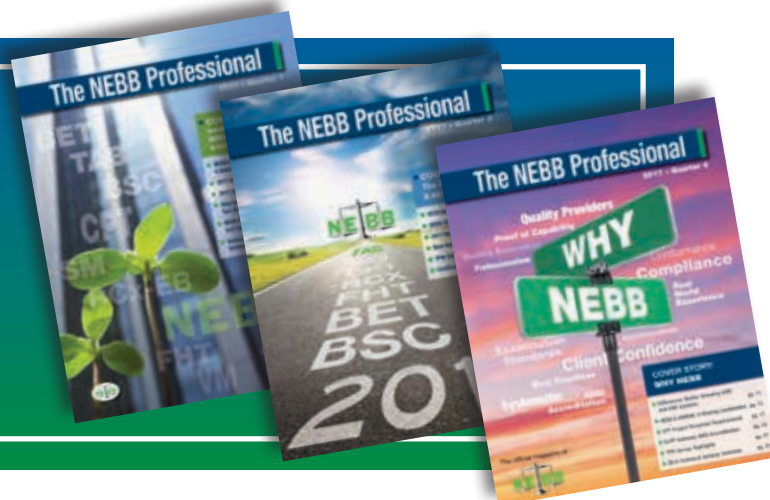
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President's Comments

By: Don Hill

NEBB is ever-changing!

Back in the day, when meeting with my peers, we discussed how we did business. Now we talk about when we are going to "move to the next chapter." (Retire.) When you step back and think about that statement, it compels us to thoughtfully consider NEBB's succession plan. As the current generation of NEBB Professionals retire, NEBB's younger CPs and CTs come to the forefront. Engaging them in our processes and exemplifying for them the importance of volunteering with NEBB takes on a new light and our perspective changes.

We, as a Board and NEBB's Committee Chairs, have actively begun this progression process. The creation of a young professionals' network is helping to engage and identify potential candidates for volunteer positions, be it working on a Standards Committee, a specific Discipline Committee, the YPN Chapter Liaison program, or being Subject Matter Experts/Item Writers on the certification side. The volunteer possibilities and opportunities with NEBB are endless.

Typically, NEBB and the related industries it represents, was primarily a male-engaged association, but that is changing more rapidly than one might realize. When NEBB started in the early 1970s, there were few women in construction. Today we see more and more women in key management positions with firms and entering our certification programs. The face of NEBB is diversifying, adapting, adjusting. Staying nimble and recognizing the "show must go on" and desiring to see those changes come to fruition is what we must do for future growth.

Let's look at how NEBB is implementing these changes - which is actively recruiting younger professionals with new approaches and visions of what's yet to come.

Our EVP, Tiffany Suite, has the youthful vitality, energy, enthusiasm and common-sense approach to running the office, staff and all facets of NEBB under her purview. When it comes to fiscal responsibility, there's none better. Her sharp eye and straight-forward approach to the budget and bottom line is precisely the attention to detail that will take NEBB successfully into the future.

In October, the first woman was voted to the E/FC. Amber Ryman worked tirelessly on Title 24, as a NEBB Board Member and on the Standards Council. We are excited about what Amber brings to the E/FC.

The Cleanroom Performance Testing Committee's new Chair Tiffany Russell accepted the responsibility for this growing discipline. Chad Flynn will chair the CPT's Compounding Pharmacy ANSI Standard.

The Standards Council new chair, Brian Hill, responded to a request by Jim Kelleher and agreed to take on this assignment. He's also a Chapter Liaison for the YPN Ad Hoc Committee.

Travis Short, Dave Wood and Billy Robbins are new members of the TAB Committee who all bring an innovative outlook on how NEBB teaches and approaches new projects. Dave was recruited by Vice President Jeff Schools, and Billy came to us through Past President, Jim Kelleher. Travis was a recommendation a few years back from the Board of Directors. (I have known Travis since his age was only a single digit.)

A BSC Committee mainstay for some time is Casey Batenhorst; he is a solid base for that group as it grows to meet the needs and future growth of a changing industry and that discipline.

Our Young Professionals Network (YPN) headed by the YPN Ad Hoc Committee continues to engage our young and upcoming professionals from around the world and various disciplines. Those assuming leadership positions mentioned here are young, female or both. If we fail to engage our young professionals - male or female - and diversify from within the formidable industry, NEBB misses out.

Many people I highlighted are personnel of firms whose leadership include current and past Board of Directors. Volunteerism is moving from one generation to the next. Everyone involved with this great organization is encouraged to engage and influence the future of NEBB, be it dealing with technology advances to changing demographics of the workforce. Why? Because NEBB is changing every day!

Don Hill
NEBB President 2018



EVP's Message

By: Tiffany Suite

2017 was a dynamic year for NEBB, putting into place an exciting range of innovative, creative ideas and projects designed for pivoting the association towards ongoing future growth and success.

The NEBB Board and I continue to share an expanded vision for the future and the many exciting programs in development, working through our committees, working groups and the Certification Board to strengthen the Association on many fronts.

We substantially increased involvement and awareness expanding our diversity and young professional initiatives on the Chapter front with the YPN Chapter Liaison Program. Standards development continues with two more standards committees - the Cleanroom Performance Testing Standards Committee and the Cleanroom Compounding Pharmacy Standards Committee. The opening of NEBB Tec has consolidated the collective training offerings for the industry. NEBB TEC is a first-class training center and a facility that will provide hands-on training opportunities.

The NEBB Professional kept Certificants, Firms and friends informed of NEBB's activities, chapter programs and initiatives, as well as feature stories on issues of national and global interest. Certification exams continue to be strengthened and guiding documents, the Bodies of Knowledge are being completed for all disciplines. StoreFront, NEBB's online bookstore, now offers you the opportunity to purchase books and resources with ease. Training seminars grow, continuing to sell out ahead of schedule.

A pivotal moment in 2017 for NEBB was achieving ANSI accreditation for our Commissioning Process Professional (CxPP) certification. By following the ANSI standards and best practices, it has made our other certifications stronger, more defensible and in alignment with elevating the level of professionalism expected of NEBB Certificants. Many people, over several years, played a part in this project and I am very grateful for the dedication of those involved.

The highlight of the year is always our annual conference which gathers Certificants, Firms, Chapter leaders, Vendors and Sponsors and other professionals for sessions in business and discipline-specific topics, and is a great opportunity to network. This year's annual conference is shaping up to be another impressive event in the World Smart City. This year's theme is "Achieving Excellence in a Changing Environment," and with that in mind, I promise the schedule will not disappoint.

The key to successful nonprofit associations is to approach the operations as if we were running a for-profit business. I believe we are here to represent the best interests of our firms and Certificants. Everything we do is to benefit our constituency, your needs and values. The devil is in the details and that means transparency in the governance, compliance and operations of NEBB, implementing solid entrepreneurial business strategies to achieve ongoing solid footing. We recognize our challenges, areas of improvement and sources of frustration for our Firms and Certificants. NEBB continues to correct those sectors of our business that require change. Our goal for 2018 is finalizing changes to make doing business with NEBB seamless. Striving for excellence is our goal.

Having closed out 2017, and now in the throes of a New Year, I extend my sincerest gratitude to NEBB's Executive Finance Committee, NEBB's Board of Directors, Chapter Coordinators and Boards, Volunteers and our exceptional staff for their tireless and selfless efforts for the benefit of NEBB.

Despite all you do in your businesses and personal lives, so many of you carve out time to serve as volunteers to make NEBB better. Meanwhile, those of you who continue your certification with NEBB – be it Firm or Individual - are demonstrating your commitment to the profession you hold so dear.

It is my pleasure and extreme honor to work with all of you.

Tiffany Suite
NEBB EVP



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OSHA & NEBB: The Importance of Playing It Safe

Todd Larson | ArchiText



It happens. Accidents on the job.

No one is immune to unavoidable mistakes or worse, catastrophic incidents, and often jobsite safety is taken for granted. Logic dictates that if hardhats, goggles and gloves are on, first-aid kits and respirators are handy, CPR and egress routes are known, everything is covered. But it's not.

The daily routine of work patterns can blind a professional to the nuances of site conditions that pose hidden threats to safety. Denial of potential safety issues contributes to more than 200 deaths and more than 1 million injuries annually as reported by *Health and Safety Executive*.



Greg Wharton

According to Greg Wharton, Safety Director for Sheet Metal Contractors Association of Philadelphia and vicinity, who conducts numerous safety training sessions yearlong, overall safety precautions and proper safety protocol can be some of the most under-rated aspects of the job, but the consequences

for an individual and the company have the potential to be devastating.

"Safety gets overlooked in the workplace because of the critical nature of the business – everyone is moving fast to get the job completed, but it's the small issues that can be life or death," states Wharton. "The overarching concept about safety is to have employees going home the same way they went to work. Work together to go home together."

Take the 2015 death of a 21-year-old plumbing contractor while replacing sewer line 11 feet below ground in Penn Township, Pennsylvania. The site's unshored trench excavation collapsed and crushed him under 3,000 pounds of soil. The U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) cited his employer for nine violations of OSHA's worksite safety standards, including failure to shield employees from unsteady earth and stone and failure to distance the cascading soil-pile at least two feet

from the trench. The company owner faces up to \$250,000 in fines, six months in prison, or both.

Another example is a 39-year-old HVAC installer who fell 15 feet through a metal roof's skylight to his death on the building's concrete floor when a co-worker accidentally bumped him while dislodging a saw from the roof. OSHA cited the Georgia-based electrical, mechanical and plumbing contractor for failure to follow the OSHA standard at 29 CFR 1926.501(b)(4)(i) that mandates the use of fall-arrest systems such as nets, harnesses, guardrails or hole-covers to protect workers from falling through openings over six feet above floors. Also charged with failure to report the accident to OSHA within eight hours of its occurrence, the contractor faced a \$54,000 fine. William Fulcher, OSHA's Atlanta-East Office area director, called the tragedy "preventable."



These incidents are preventable with the Outreach Training Program in workplace safety and health that OSHA has offered companies of all types since 1971. The program, which includes 10-hour training for entry-level workers and more comprehensive 30-hour trainings for experienced workers and managers, teaches them how to identify, avoid, control and prevent job-site hazards, and how to file a complaint to OSHA about an apparent worksite danger. Workers' rights to jobsite safety, their rights as whistleblowers, and employers' responsibilities for protecting their workers from harm on the job are also covered in the training. OSHA's founding mission is to "assure safe and healthful working conditions for working men and women by setting and enforcing standards and by providing training, outreach, education and assistance."

The program is voluntary in most states but mandated in Missouri, Nevada, New York, and, on certain types of worksites, Connecticut.

OSHA's Outreach Training Program is especially critical for NEBB firms, many of which are smaller operations with as few as three to five technicians on staff. The loss of one worker from injury or death due to insufficient safety training hurts not only the worker but the firm, as firm leaders will attest.

"We have 22 employees, and losing a field technician would be a great loss," said Harlan Rosenberg, president of Richard Flanders Enterprises, Inc., of Lauderhill, Florida, which is NEBB TAB certified. "OSHA made my people aware of the potentially unsafe aspects of our jobs. For us, ladder safety, electrical safety, and confined space were the most pertinent areas."

In the OSHA Training Program, a confined space is defined as "an area with small openings for a worker to enter and exit [that] is not designed for regular work." This includes manholes, sewer digesters, silos, pipeline passages, and crawlspaces containing HVAC equipment or boilers. Threats these spaces pose include: suffocation from lack of oxygen; excess oxygen that can support combustion of flammable substances in the space; excessive buildup of poisonous gases, heat, or cold; injurious noise that mandates the use of earplugs; physical hazards such as slipperiness, abrasiveness, or the presence of sharp or falling objects; or falling grain, gravel, sand or soil burying a worker alive, such as the plumbing contractor described above.



Before their 10-hour online training, Richard Flanders Enterprises technicians "had only minor injuries, mostly ladder accidents or bad cuts, as we do not do very hazardous work in testing and balancing," said Rosenberg, who took the 30-hour online course. Because of the training, "we have not had an onsite accident for seven years," due largely to refresher courses the firm follows to keep up with annual changes in OSHA workplace safety and health standards.

Pro Balance of Blue Springs, Missouri takes OSHA training very seriously since even if one worker was injured on the job, work progress stalls and lessens the manpower necessary to get the job done as a team. The stops or slowdown of work for accident investigation, increase medical and legal costs, all compromise the firm's reputation.

Wharton agrees. "Whenever an employee is injured, it affects the firm's ability to obtain jobs and influences the experience modification rate (EMR). Firms with a high injury rate make them less marketable and less desirable to work with," states Wharton.

"We have 14 employees and losing one of them impacts us severely," said Rick West, vice president of the NEBB-certified firm in HVAC testing and balancing for indoor air quality and duct leakage, air-barrier and building-envelope testing, and building systems commissioning. "General safety education, and understanding the impact of careless techniques reduces the risk of injury."

Pro Balance's primary safety concerns were electrical safety awareness regarding the level of voltage and amperage in HVAC equipment, as well as OSHA's "slips, trips and falls" category related to the provision of safe ladders. All were fully addressed in the technicians' 10-hour course and the safety officer's 30-hour course the firm took with a trainer, followed by online refresher courses.

To conduct in-office safety trainings, a NEBB firm's designated safety officer takes a special "train the trainer" course through the OSHA Training Institute (OTI) at one of 39 authorized OTI Training Centers throughout the nation, which include four safety councils and 32 universities, colleges and technology institutes. Depending on the nature of the firm's services, the trainer must complete OSHA's #500 Trainer Course in Occupational Safety and Health Standards for the Construction Industry or #501 Trainer Course in Occupational Safety and Health Standards for the General Industry to qualify to conduct the 10-hour or 30-hour employee trainings, and take refresher training courses every four years to maintain their trainer authorization.

For Climatech Inc., a Pittsburgh-based HVAC and refrigeration contracting firm of more than 150 NEBB-certified technicians, OSHA safety training has been especially valuable in ladder safety, confined spaces lacking oxygen or containing toxic or inflammable gases, large boiler system operation and on/off safety, electrical safety for units operating at upward of 460 volts, high-pressure refrigerant safety, provision of lone worker monitoring devices for proper vigilance on a technician working solo on a job or in a space, and lockout/tagout (LOTO).

In LOTO, technicians are trained to padlock an electrical or boiler unit they have shut off and to tag it with a "Warning: Do not operate" sign with the technician's contact information so the unit can be turned back on only with the technician's authorization. The training also covered use of a safety data sheet (SDS) to learn what a chemical composition is (e.g., windshield-wiper fluid or antifreeze for a car), what its potential hazards are, and how to use it safely.



Jacob Altland

"Every manager in our company went thru the 10-hour OSHA training," said Jacob Altland, a NEBB TAB CT at Climatech and standing member of its Safety Committee, who is now pursuing the 30-hour construction-industry training. "Our goal is to have all project managers obtain OSHA 30s. With so many employees, it's been a

large undertaking to make everything consistent and to get everyone on the same page."

The OSHA 10-hour construction-industry courses cover include: common biological, chemical, ergonomic, physical and psychological health hazards; communication of hazards; characteristics of hazardous materials; safe use of cranes and rigging; awareness of electrocution hazards; avoidance of and protective guards against striking objects and machinery; entrapment in moving machinery or objects; protection from falls; the proper protective equipment to wear on the jobsite; safe use of hand and power tools; scaffold safety; safe passage along stairways and ladders; and OSHA site-inspection procedures.

The OSHA 30-hour construction-industry courses explore all the above, plus: fire and explosion protection; proper handling and storage of materials; welding and cutting; transportation and vehicle-related accidents; excavation site safety; concrete and masonry construction hazards; lead safety on the jobsite; proper use of explosives; and process safety management.

Climatech's safety trainings have been conducted in-house by Safety Director Lee Fisher since he took his first OTI course at OSHA's OTI Training Center at West Virginia University in 2005 to qualify to conduct the 10-hour and 30-hour trainings as an Outreach Training Program Trainer. "Throughout the course of year, I do supplemental training on various topics — ladder safety, aerial lift work, hazardous communication, welding — and I train our guys for an hour or two as a refresher," said Fisher. "We also go over vehicle safety issues such as preparedness in the event of an accident or a flat tire, instances of getting hurt while operating machinery and what we can do to prevent that in the future, being burned by gas or exposed to it...a little bit of everything regarding the construction industry."

To stay abreast of changes in OSHA safety standards, Fisher takes OSHA's trainer update course every four years so he can conduct his year-round supplemental training with the most current safety regulations. "Supplemental training is ongoing since safety standards are always changing," he said. "We have to keep up with those changes, but, ulti-



mately we must instill in our people that safety matters to all involved.”

One standard OSHA recently updated for supplemental safety training is the respirable silica standard. “When we’re dealing with concrete drilling or cutting in a concrete foundation or on a highway, we need a vacuum system or wet-saw dust containment system to collect the dust and particulate the collection, whether it’s wet or dry, otherwise an OSHA inspector would penalize us,” said Altland. “Silica is the new asbestos.”

“Respirable silica is what you can’t see, so it was well thought out for upgrading, because a lot of fatalities are due to these situations,” added Fisher. “OSHA, as governing bodies for workers, do a good job at keeping up with the times, thoughtfully selecting a standard that needs to be updated. By putting out these standards and letting us train our workers in them, OSHA has reduced the amount of fatalities in this country every year.”

The OSHA Outreach Training Program benefits NEBB-certified firms and individuals in many ways beyond worker safety and health.

1. Insurance discounts may be available for firms that enroll in the program (firms should check with individual insurance providers).
2. Workers’ compensation claims are reduced.

3. Workers are more motivated by being assured of safety on every jobsite, now that everyone on the team follows all safety precautions.
4. The OSHA seal of safety training assures clients of a firm’s reliability, productivity, and commitment to employee well-being.
5. Above all, training in OSHA safety standards boosts firm morale by allowing buy-in from workers regarding maintenance of those standards.

“We put such precedence on safety that our employees take ownership of safety in the training provided,” said Fisher. “If employees buy into the culture and get their voice and opinion in it, it improves morale by giving them the power to instill that training into their daily work.”

Wharton concludes by stating the impact tenured employees have on apprentices cannot be underscored enough. As the adage goes, “Actions speak louder than words.”

“Veteran employees’ on-the-job behavior influences apprentices who mirror the actions they see. Veteran employees who do not comply with safety regulations, such as wearing safety glasses or appropriate fall protection, are culpable when apprentices mirror the behavior they see,” said Wharton. “The apprentice doesn’t know everything – and when they don’t follow proper protocols, injuries happen.”

When it comes to workplace safety - no one is invincible. ■

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George H. Hightower, PE: A Class Act

Andy Nolfo, PE | NEBB CP



George H. Hightower Sr.
President, 1974

This past December, I was an instructor at the TAB CP Seminar held at our new NEBB TEC in Gaithersburg, Md. This space adjoins the NEBB office and is a wonderful seminar site that will soon be an exceptional training center as well.

Along with Travis Short, PE, another member of the TAB Committee member, we noticed many old

NEBB publications we “old-timers” grew up with, along with a great variety of old instruments on display at NEBB TEC. Most of the items came from three main sources: Dave Bevirt and George Hightower and his firm, Air Conditioning Engineers located in Atlanta, Ga and the CapMarva Chapter. Of course, all the instruments were analog, but one item really intrigued me – it was an old slide rule. When I opened the case, I discovered the following information penned into the leather case: “Hightower, ’33, VMI.”

If the name “George Hightower” doesn’t ring a bell – it should. It should also bring a tear to your eye as it did to mine.

My introduction to NEBB goes back to a meeting in St. Louis, MO in 1974. It was jointly sponsored by MCAA and the SMACNA Chapter of St. Louis. The meeting’s purpose was to introduce the NEBB organization to local mechanical and sheet metal contractors. NEBB sent three individuals to make the presentation. The first person was David Bevirt, PE, a familiar name to many of the St. Louis group since Dave grew up and attended school in the area and went on to work for a local firm before joining the national SMACNA organization. The second person was Bill Abernathy who worked for MCAA. Both Dave and Bill were assigned by their organizations to jointly administer the newly formed NEBB organization which both MCAA and SMACNA had fostered.

Dave lent his assistance on the technical side of issues and Bill’s influence was aimed at NEBB’s administrative issues. The third individual was George Hightower, PE. George was an installing

contractor from Atlanta. While he had a quiet voice and an accent that oozed southern charm, he was a shrewd business man and engineer.

During that time, I worked for Murphy Co. in St. Louis, Mo. and after passing all the NEBB exams, I became NEBB TAB certified in 1977. My original NEBB certificates were signed by George Hightower, who was president of NEBB, and Les Lang who was a St. Louis mechanical contractor and NEBB’s Vice-President. Throughout my career in St. Louis, I stayed active with the local NEBB chapter, the local ASHRAE chapter and NSPE. My first NEBB Annual Meeting was in 1982 at Kansas City. Dave, Bill and George were in attendance.

As I became more involved with my local ASHRAE Chapter, I attended more regional and society ASHRAE meetings. Dave and George were always at the ASHRAE meetings and it was there I was introduced to the fantastic life of George Hightower. George’s pictures were always in the NSPE newsletters as he was member of the NSPE “Red Coats” for the Engineers in Construction branch of NSPE.

What follows is a short summary of a wonderful individual, taken from the best of my collective memory.

After graduating from VMI, George worked in Atlanta, Ga, but his mechanical contracting experience was interrupted by WW II. George was assigned to the famed Flying Tigers. This group flew missions and ran supplies to the Allied Forces



George Hightower’s slide rule and case.

fighting the Japanese on what would become known as the 'Burma Road.'

After the war, George founded his company, Air Conditioning Engineers and became involved with ASHRAE, MCAA, and NSPE. The late 1960s is when the testing, adjusting and balancing field started developing in the industry. George approached the only TAB organization at the time, AABC, and inquired about membership. AABC had, and still maintains, a strict policy that their members must be independent firms unrelated to the design or installation of any projects. Since George's firm, Air Conditioning Engineers, was an installing contractor, AABC denied George's request to become a TAB firm associated with their organization.

Thankfully, that dismissal did not curtail George's enthusiasm to provide TAB services. He contacted MCAA and SMACNA and requested that they consider creating an organization that would certify firms and individuals to provide TAB services as part of their normal installation work. NEBB was officially created by our parent organization in 1971.

Shortly before he passed away in the early 2000s, NSPE wrote an article on George and in the accompanying picture, he was wearing his WW II officer's uniform. Still trim and fit and ready to fight for what he believed in, just as he did in WW II.

It was a humbling experience to be in Gaithersburg at the new NEBB facility and see the artifacts of George and his firm. NEBB recognized George's service to our organization in 1999 by creating and presenting the first "The George H. Hightower Distinguished Service Award" to George at the NEBB Annual

Meeting in Colorado Springs in November 1999. An excerpt from the overview of this award goes on to state:

"This award is named for Mr. George H. Hightower, a truly extraordinary man. He has been instrumental with NEBB in its inception and subsequent success. He not only served as NEBB's President in 1974 and on the Board of Directors but from the beginning, Mr. Hightower promoted NEBB throughout the industry and helped NEBB to become the respected organization that it is today."

NEBB's previous publication, The Balance Sheet, had an article in its March 2000 edition covering the award and a synopsis of Mr. Hightower. The article states:

"...Aside from his achievements with NEBB, Hightower has enjoyed a successful and adventurous life. Born in 1911, this third-generation Atlantan is a true southern gentleman. He earned his degree from Virginia Military Institute in 1933. He continued his education with courses in Business at the Georgia Institute of Technology, as well as studying Testing and Balancing at Georgia State College. As a Flying Tiger with the United States Army Air Force during the Second World War he was awarded two Bronze Stars, two Campaign Stars and a Legion of Merit Medal. He was included in a Time magazine article in 1944."

The article concludes with, "NEBB is proud to have the privilege of such a wonderful namesake for its highest honor." I certainly agree with that statement.

While NEBB has evolved, we should never forget who one of our founding fathers truly was: George H. Hightower, PE. ■

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Firm Recertification: Second-Year Success

Don Fedyk | NEBB Technical Director



A progress review for Year Two in our firm recertification process found a much friendlier system. While there are still some minor nuances in the system, many firms have completed the process with minimal concerns or hiccups. Surprisingly, there was more confusion among reviewers than the firms, particularly on instrument calibration or meeting the requirements of the Instrument List.

One major concern noted is paperwork being submitted to the chapters and passed on to NEBB with questionable new instrumentation without required documentation.

1. All instrumentation presently not included in the drop-down menu must be accompanied by supporting documentation along with valid three-point calibration certificates verifying the high – mid – low points in the required range as specified in the instrumentation list for a specific function.
2. It is not, nor should be, the responsibility of either individual chapter reviewers or NEBB National to search and verify instrument specifications for approval.
3. We have kept up-to-date with additions from most of the approved “other” submissions as well as adding newly designed upgrades or new instruments that meet the criteria.
4. NEBB reached out to the manufacturers to forge relationships that help define the requirements of the various disciplines within NEBB, which is constantly evolving as technology and customers’ demands change.

While the new instruments have presented a challenge due to lack of information provided by the firm, the calibration of instrumentation, or lack of it, is more baffling in that accuracy requirements are essential in all *Procedural Standards* and nearly every project specification. The NEBB-required multiple point calibration, minimum 3-point NIST traceable (or equivalent), verifies the instrument accuracy over a required range of an instrument. In my over 30 years of various testing in multiple NEBB disciplines, all instrumentation

utilized on any project had valid multi-point calibrations. In many cases data-in and out verifying the accuracy of the instruments while used on the project.

As NEBB certified firms (CFs), certified professionals (CPs), and certified technicians (CTs) have learned to adapt to the ever-changing ecological environmental demands, NEBB, in cooperation with manufacturers and designers, has adjusted instrumentation requirements to conform to these requests.

Many of the newest instruments combine multiple functionality into one light-weight package that are durable and accurate, but with the rigors of field testing, may be abused or mishandled which is the prime reason for constant verification of accuracy through the calibration process. While the multiple function instruments provide a greater application flexibility in a compact platform, they still require a calibration for each of the various functions.

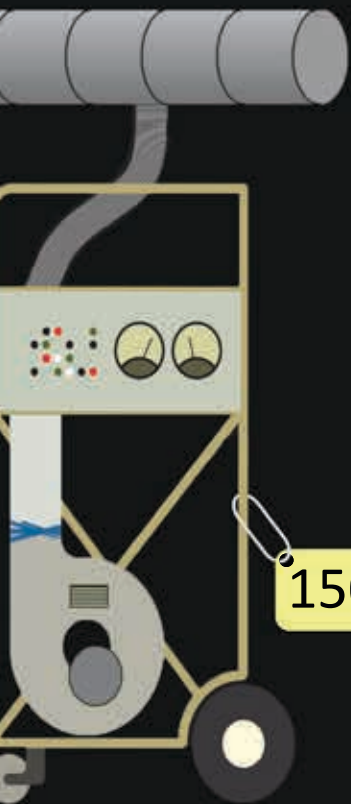
Instead of a one-size fits all approach, committee collaboration is utilized to find the right fit for the “tools of the trade” for each discipline that would meet the requirements as specified in each of the *Procedural Standards*. We have fielded many questions on instrumentation and calibration requirements from both the firm or chapter and have reached out to various committee chairpersons for a consensus. As part of the NEBB staff, I take pride in working with the various committees whose members provide the expert knowledge and volunteer their time for the betterment of this organization and the environment.

It is continuous effort to keep up with the fast-paced technological changes in all aspects of the built environment and advancements in digital instrumentation revolution. With the commitment of its volunteers, staff, and collaboration with manufacturers, NEBB can provide the education and ability to get the job done right.

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Certification: The Past Meets the Future

Cynthia Hereth | NEBB Director of Certification



A new year brings reflective moments along with visions of what might unfold in the pursuing 12 months. My musings about 2018 began as I did research for a project and came across the publication, “30 Years of Assured Quality,” a historical overview of NEBB, the focus being the inception and growth of NEBB from 1971 through 2001. The rearview look was like uncovering a veritable gold mine and made me proud to be associated with such a venerated association.

For decades, NEBB’s Leadership and Volunteers were consumed and motivated by offering quality certifications for firms and individuals, producing top-notch education and advancing NEBB in the industry. Compliance and quality were hallmarks that touched every project NEBB pursued.

While Testing, Adjusting and Balancing (1971) was the basis on which NEBB made its presence in the industry known, Sound and Vibration were the second and third certifications to come into the fold (1977), followed by Cleanroom Performance Testing (1984) and Building Systems Commissioning (1987). The rest is history with four more certifications added to the NEBB cadre: Fume Hood Testing (FHT), Building Enclosure Testing (BET), Retro-Commissioning of Existing Buildings (RCx-EB) and the ANSI accredited Commissioning Process Professional (CxPP).

In the 30-Year overview, there was a beautiful tribute to William Abernathy, NEBB Co-Administrator at the time, from General Colin Powell, Chairman of the U.S. Joint Chiefs of Staff. Powell served under Abernathy in the military and was greatly impacted by his association with this NEBB Leader.

“He (Abernathy) taught me about the values of integrity, hard work and the importance of high standards. He taught me about compassion, kindness, perseverance in the face of obstacles and about toughness...” stated Powell.

That quote speaks volumes to NEBB’s heart and history, our CPs, CTs and Certification Candidates, plus the Volunteers that make them successful. It also describes NEBB’s Individual Certification process.

NEBB certification doesn’t come easy – in any discipline. The process is tough. It requires commitment, stamina, patience and perseverance. Our pre-requisite eligibility requirements have tightened up. Studying for exams is a necessity, not a second thought. Our Candidates are hitting the books after

long, long work days, after putting their kids to bed, and on weekends. Reading, referencing standards, figuring calculations, pouring through self-study guidebooks take weeks of precious time. It’s all-consuming and requires grit to complete. The process is arduous.

On the flip side, each NEBB Discipline Committee works in tandem with the Certification Board to create their guiding document, the Body of Knowledge (BoK). Exams, created by the Exam Development Committee, are constructed using scientific, psychometric principles, written by Subject Matter Experts in the field. Exams are Angoff Scored, validated and set up in Kryterion by content domain to give Candidates useful feedback whether they pass or fail. Four BoKs are completed and four more are currently in development, along with five new exams, with more on the horizon including metric exams. This hard work pays off from our standpoint. The success rate of NEBB Candidates is on the rise because they are better prepared.

The end goal is receiving a professional certification that stands for something. Recognition of a quality achievement. A certification that was built on the backs of those who came before us.

NEBB certification means striving for the highest standards of achievement while maintaining class. It represents quality, integrity and toughness coupled with consideration of others. NEBB CPs and CTs are not only well qualified, but possess a sense of self, determination, feistiness and empathy. Every day they walk onto job sites and situations that require finer interpersonal skills that may allude others, but not a NEBB Professional – be it CP or CT.

And it doesn’t stop there. NEBB CPs and CTs are required to maintain and upgrade their specific discipline knowledge by obtaining continuing education credits (CECs) every two years. This requirement ensures our Certified Individuals are in tune with industry changes that happen so quickly in today’s world. This too, is a necessity, not a second thought anymore.

Over the decades, NEBB’s certification has transformed and adjusted the trajectory of many lives. You are part of a time-honored, enduring tradition, and one that is expanding exponentially every single day.

Stand tall and be proud of your certification heritage. ■

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NEBB Announces NEW YPN Grassroots Program

Moving toward the next phase in the growth and development of NEBB's young professionals group, the YPN Ad Hoc Committee created and launched a new endeavor called the "YPN Chapter Liaison Program."

The goal of the YPN Chapter Liaison Program is to connect selected individuals with interested Chapter Coordinators to create opportunities to reach YPNers at the local level. For NEBB's YPN program to grow, support at the local level is critical.

In August 2017, notices of the new program were disseminated, and applications requested. The YPN Ad Hoc Committee along with Jim Kelleher, NEBB past president, reviewed and vetted the applicants and approved six new Chapter Liaisons. They are: David Galli, NorCal/Hawaii Chapter, Matthew McCowan, NEBB Australia, Josh Dierking, Texas NEBB, Josh Whitley, FEBB, Brian Hill, Great Plains NEBB, and Craig Phillips, Arkansas NEBB.

Chapter Coordinators involved with Liaison program are Audrey Kearns, NorCal/Hawaii, Lyn Dyason, NEBB Australia, Sandee Morgan, Texas NEBB, Terry Wichlenski, FEBB, Shelley Klein, Great Plains NEBB and Jo Kinley, Arkansas NEBB. Other NEBB Chapter Coordinators working towards the Chapter Liaison program are Ginger Slaick, MidSouthebb and Barbara Huber, CapMarva.

NEBB's new cadre of younger volunteers have ideas that span the gamut from mentoring and creating study groups for certification candidates and encouraging younger technicians to pursue NEBB certifications, to creating engaging events at the chapter level and seeking out untapped personnel resources in their professional community to inform them of NEBB and the growth opportunities available to them.

"The YPN program is a vision whose time has come for NEBB. We applaud NEBB for taking this first proactive step in working with us to come up with ideas to engage Millennials," said Audrey Kearns. "Our Chapter with the help of our YPN Chapter Liaison, David Galli with Carter Air Balance, are eager to get started in this new endeavor. We encourage all Chapters to become involved."

NEBB's YPN Chapter Liaisons



Brian Hill

Brian Hill: "The future of the organization is dependent on new, young members; we are here to unite young professionals to help build up from the foundation that has made NEBB great for so many years!"

Craig Phillips: "My former boss, Tom Hanlon, taught me the importance of giving back, charity and mentoring young professionals. I'm excited about collaborating with the YPN – it's an impressive group. I'm also highly interested in expanding NEBB by bringing awareness to the younger engineering community about the opportunities NEBB can provide them."



Craig Phillips



Josh Dierking

Josh Dierking: "What drew me to join the NEBB YPN movement was the need for the younger generation to interact and learn from each other's experiences and knowledge. We often get isolated within our own respective businesses when there is a need to realize that there is a bigger picture than just each individual company. If the tree isn't healthy than the branches die. My hope for joining this team is to see a renewed connection across the NEBB family to keep the brand strong in the future."

Matthew McCowan: "Networking with other professionals and sharing knowledge and experiences is a great benefit of NEBB. My goal as a YPN Chapter Liaison is to engage others to help certification candidates with their home study course and achieving CP status. The greater exposure NEBB has in the Australian Mechanical Services industry, the standard of installations and ongoing performance of buildings would generally improve."



Matthew McCowan



Josh Whitley

Josh Whitley: “Many organizations today struggle with outreach to young professionals. I am excited for the opportunity to help expand and grow NEBB’s Young Professional Network. The NEBB YPN Chapter Liaison program is a perfect example of building relationships through local chapters to establish an engaged community of TAB professionals.”

David Galli: “I am excited about the Chapter Liaison program! As the owner of a TAB company, I feel there is room for growth



David Galli

within our industry and untapped talent that we need to discover. YPN is a fantastic resource for young professionals who want to pursue their CT or CP certifications, and I believe it starts with professional engagement at the local level.” ■

For more information on NEBB’s YPN Chapter Liaison Program or to obtain more information on NEBB’s YPN Chapter Liaison program, email ypn@nebb.org.

As Building Enclosures Tighten Up, How are HVAC Systems Affected?

Phil Emory | BET Committee Chair



Recently I had a few discussions with mechanical design firms regarding the effects of tighter building enclosures and how they affect the HVAC systems within the enclosure.

As buildings become tighter, the back pressure the enclosure creates is influencing the HVAC systems, most notably the elevator/stairwell fans. Several mechanical design firms are realizing the pressure gradients are changing due to the tightness of the building. Attention needs to be taken to ensure the proper relief so the pressure gradients can be achieved to meet the local fire code requirements.

I carried the conversation further with respect to the effects on the rest of the air systems. If local code requires an air barrier to be included in the design, and the barrier itself is to be tested to meet a code standard, most typically 0.40 cfm/ft² of building enclosure at a reference pressure of 0.30 in H₂O, then are the firms using new models to size the air systems?

At this point the room usually goes quiet.

The point I try to drive home is this: If the code requires an air barrier in the design, showing the barrier in plan view, elevation view, and the appropriate details for its continuity, along with the calculation of the square footage of the enclosure (which would greatly affect the mechanical design), then why are drawings being permitted without the air barrier design? If the mechanical design firm is part of the drawing development process, then should they not press the Architect of Record to include the air barrier drawings as required by law?

Another issue that has risen with the mechanical design firm is the current standard of the building enclosure test, which reports the amount of leakage at the reference pressure of 0.30 in H₂O. The question is, “How relevant is the current reference pressure to the mechanical design? Why not focus on reporting the leakage based on the anticipated operating pressure of the building?”

The reason the reported leakage of a building enclosure test was raised to of 0.30 in H₂O was to make the tests more repeatable from one test to another. The original attempt was to have this testing requirement as part of the building code, not the energy code. But how do you prove that a proper air barrier would increase the life of a building? It was possible to show energy savings and that’s why we now have this as part of the energy code in many local jurisdictions.

If a building enclosure test is performed by sealing and unsealing different items to approximate their contribution to the percentage of leakage, you may find that the leakage, as a percentage of the total leakage, varies dramatically throughout the enclosure when reporting at 0.04 in H₂O versus the current standard of 0.3 in H₂O.

Pressure gradients are critical in pharmaceutical facilities, hospitals, cleanrooms and many other facilities. A tight air barrier will affect the design and final operation of these facilities. All too often we only think of air barrier design at the external skin of the building - when the same concepts can be utilized at the internal walls to help achieve proper pressure gradients. ■

NEBB Launches 16 New Online eLearning Courses

Through a cooperative venture with ASHRAE, NEBB has launched its new eLearning initiative with 16 affordable online courses in a host of topics applicable to NEBB Certificants or certification Candidates.

The courses are offered in an “Ala Carte” format giving the end user the ability to pick and choose the course best suited for their needs. For NEBB Certificants, the online courses provide another avenue for obtaining continuing education credit and professional development, plus the online courses are NEBB CEC approved. For certification Candidates, these specialized courses can enhance overall learning in a specific discipline area.

The online courses are \$50 each, and can run in length from 2 hours to 7.5 hours. Individuals have 12-month access to the online courses once they sign up. Each online course has an exam at the end of the instruction and Individuals must achieve 80% or higher to pass and receive the Certificate of Online Course Completion. The final exam has unlimited attempts. If the user fails the exam, they can retake as many times as they want until they pass the course and there is no charge for retaking the exam. At the completion of each online course, NEBB Individuals would receive a Certificate of Completion available electronically through the ASHRAE portal.

NEBB’s Ala Carte Online eLearning Course topics include:

1. **Introduction to HVAC Control Systems:** Introduces control theory and explains how evaluate, select, position and sequence the appropriate type of control. (4.5 professional development hours)
2. **Thermal Comfort:** Provides an understanding of the factors determining thermal comfort. It also covers the comfort envelope, necessary for designing systems that operate within acceptable ranges. (2.0 professional development hours)



3. **Ventilation and IAQ:** Provides an understanding of the types, sources and effects of air contaminants and how to control them, as well as the basic concepts of ASHRAE Standard 62.1. 3.0 professional development hours
4. **Hydronic Systems:** Shows the components, strengths and weaknesses of hydronic systems, the effects of varying water flow, and considerations for effective ventilation. (2.5 professional development hours)
5. **Energy Conservation:** Discusses advanced techniques for energy conservation. (3.5 professional development hours)
6. **Special Applications:** Learn about radiant heating and cooling, thermal storage, room air distribution and humidity control. (4.0 professional development hours)
7. **Basics of Electricity:** Provides the electrical knowledge needed to understand controls and the use of electrical circuit drawings. (4.5 professional development hours)
8. **Control Valves and Dampers:** Teaches the various types of valves and dampers, and their selection, in-

stallation and operation. (6.5 professional development hours)

9. **Sensors and Auxiliary Devices:** Teaches the terminology and attributes of sensors, the selection of moisture sensors, pressure, flow, and auxiliary devices. (7.5 professional development hours)
10. **Control Diagrams and Sequences:** Explains the use of written specifications, schedules, and drawings to clearly identify what is to be installed, how it is to be installed, and how it is expected to operate. (3.5 professional development hours)
11. **DDC Specification, Installation and Commissioning:** Understand interoperability of controllers, network and data protocols with an introduction to BACnet and LonWorks. (4.5 professional development hours)
12. **Introduction to HVAC Systems:** Provides an understanding of simple psychrometric charts and how to use them. It also provides a description of basic system components and operation of the economizer cycle. (3.5 professional development hours)
13. **DDC Introduction to Hardware and Software:** Introduces control theory and explains how evaluate, select, position and sequence the appropriate type of control. (4.5 professional development hours)
14. **DDC Networks and Protocols:** Understand the interoperability of controllers, network and data protocols. It also introduces BACnet and LonWorks. (3.5 professional development hours)
15. **Electric Controls:** Provides instruction on introduction to electric controls, control diagrams and control logic. (2.0 professional development hours)
16. **Pneumatic Controls:** Provides instruction on the components of pneumatic systems and control applications diagrams. (3.0 professional development hours) ■

Interested? Check out complete details at:
http://www.nebb.org/assets/1/7/ASHRAE-NEBB_Technical_Online_Ala_Carte_Course_copy_for_web-FINAL_-_11.15.17.pdf or call NEBB at 301.977.3698 and ask for Emily Demmons to register for the course(s) of your choice.

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April 26-28, 2018

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Message from the President



“The learning opportunities that were developed for NEBB’s 2018 NEBB Annual Conference are exciting, challenging and pertinent to your business.”

Welcome to San Diego!

Working with the Conference Planning Committee (Jim Whorton, Jeff Schools, Amber Ryman, Jim Kelleher and myself), the hallmark of NEBB’s conferences – the three-track session schedule, was enhanced using feedback from you – you told us what you wanted to dig into. This year’s slate of speakers will provide topics of interest to every NEBB discipline.

Spread the knowledge by bringing your CPs, CTs’ we’ve created a special discount for firms that bring three or more paid attendees. Invite your business associates, friends and staff members to our event. Everyone will enjoy our unique technical sessions and want to engage with industry peers in the exhibit hall and don’t forget the ever-popular “networking.” There are plenty of outside activities near the Annual Conference: the world-famous San Diego Zoo, Balboa Park and SeaWorld are only minutes away. This year our Golf Tournament will be held at the world-famous Torrey Pines Golf Course and will not disappoint.

I’m looking forward to meeting with you all as you join me for an event program that will prove to be educational and informative. Join your Board of Directors for learning, exploring and great networking!

A handwritten signature in blue ink that reads "Donald E. Hill". The signature is fluid and cursive, written on a light-colored background.

Don Hill

President of NEBB

2018 Conference Full Schedule

Monday, April 23, 2018

8:00 am – 5:00 pm	NEBB Building Enclosure Testing Seminar (BET) for Certified Professionals
8:00 am – 5:00 pm	NEBB Buildings Systems Commissioning Seminar for Technicians (CxCT)

Tuesday, April 24, 2018

8:00 am – 5:00 pm	NEBB Building Enclosure Testing (BET) Seminar for Certified Professionals
8:00 am – 5:00 pm	NEBB Buildings Systems Commissioning Seminar for Technicians (CxCT)
12:00 pm – 5:00 pm	Annual Conference Pre-Registration Open

Wednesday, April 25, 2018

7:00 am – 5:00 pm	Annual Conference Registration Open
8:00 am – 5:00 pm	NEBB Exam Day
8:00 am – 5:00 pm	Closed Committee Meetings
6:30 pm – 10:00 pm	NEBB Volunteer Appreciation Dinner

Thursday, April 26, 2018

7:00 am – 5:00 pm	Annual Conference Registration Open
7:00 am – 2:30 pm	NEBB 21st Annual Golf Tournament
1:00 pm – 5:00 pm	Exhibit Hall Open
4:00 pm – 5:00 pm	NEBB Past Presidents' Meeting
5:30 pm – 6:45 pm	Opening Session: Welcome & Keynote Presentation <i>Keynote Speaker: Dr. Steve Taubman</i>
7:00 pm – 10:00 pm	Get Acquainted Reception

Friday, April 27, 2018

6:30 am – 8:00 am	Breakfast
7:00 am – 5:00 pm	Annual Conference Registration Open
7:00 am – 5:30 pm	Exhibit Hall Open
8:00 am – 3:45 pm	Technical Track Sessions
8:00 am – 9:00 am	Certelligence Refresher Training
9:00 am – 10:00 am	TAB Teach the Examiner Session
8:00 am – 9:30am	Track 1: Brent Baird Track 2: Bohdan Fedyk Track 3: Luis Chinchilla
9:45 am – 11:15 am	Track 1: Stuart McGregor Track 2: To be announced Track 3: Kevin Radzik
2:30 pm – 2:00 pm	Track 1: Jonathan Strausbaugh Track 2: Chad Flynn Track 3: Donald Hill, Tiffany Suite, Jeffrey Schools, Glenn See & Bohdan Fedyk

*Cont. on pg. 24

2018 Conference Schedule at a Glance

Friday, April 27, 2018 (Cont.)

8:00 am – 3:45 pm	Technical Track Sessions (Cont.)
2:15 pm – 3:45 pm	Track 1: Mike Locke Track 2: Kevin Gebke & Tom Checksfield Track 3: Dane Richards and NEBB's Young Professionals Panelist
11:15 am – 12:30 pm	Networking Luncheon

Saturday, April 28, 2018

6:30 am – 8:00 am	Breakfast
7:00 am – 5:00 pm	Annual Conference Registration Open
7:00 am – 5:30 pm	Exhibit Hall Open
8:00 am – 9:30 am	NEBB Town Hall & Business Meeting
8:00 am – 3:45 pm	Technical Track Sessions
9:45 am – 11:15 am	Speaker: Hugh Blane
12:30 pm – 2:00 pm	Track 1: David Dougan Track 2: Ray Markey Track 3: Dale Carnegie Training
2:15 pm – 3:45 pm	Track 1: David Dougan Track 2: Beth Mankameyer & Jim Hunter Track 3: Dale Carnegie Training
9:30 am – 4:00 pm	Chapter Coordinators Meeting
11:15 am – 12:30 pm	Networking Luncheon
2:15 pm – 3:30 pm	Chapter Presidents and Coordinators Meeting
4:00 pm – 5:15 pm	Vendor Reception and Prize Giveaway
5:30 pm – 6:30 pm	Closing Session <i>Closing Speaker: Dale Carnegie Training</i>

Sunday, April 29, 2018

8:00 am – 12:00 pm	Board of Directors Meeting – OPEN
12:00 pm – 5:00 pm	Board of Directors Meeting – CLOSED

**Schedule subject to change*



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Educate Yourself with NEBB Exhibitors

Please plan on visiting our Exhibitors! Exhibits will be set up for learning opportunities between sessions. The following Exhibitors have signed up with more to come!

- **Ameritech Computer Consultants**
- **Building Start**
- **Dwyer Instruments**
- **EMSL Analytical, Inc.**
- **Field Inspections Plus –Makers of Clipboard**
- **Instruments Direct, Inc.**
- **Kanomax USA**
- **Red-White Valve Corp.**
- **Retrotec**
- **Shortridge Instruments, Inc.**
- **Testo, Inc.**
- **The Energy Conservatory**
- **TSI, Inc.**

NEBB 21st Annual Golf Tournament

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Join Us at Torrey Pines Golf Course

Thursday, April 26, 2018

NEBB Annual Conference attendees and guests are invited to join their colleagues for the 21st year of the Annual Golf Tournament. The tournament is being held at the Torrey Pines Golf Course designed by legendary course architect William P. Bell. The Golf Tournament will be held on Thursday, April 26, 2018 starting with a 7:00 am modified shotgun!

The Torrey Pines Golf Course offers two 18-Hole Championship course; the North and South Courses. NEBB has the privilege to play on the North Course during our Golf Tournament. The North Course offers several holes that are positioned to overlook the coastline. Their facilities also offer a driving range and practice putting greens!

Golf registration is \$190.00 per player to include ground transportation to and from the course, greens fees and cart fees. Breakfast will be provided for golfer's onsite at the golf course. No lunch will be provided for golfers on Thursday. An awards presentation and scoring will be held following play at the Sheraton Hotel and Marina.

***Golf club rentals are available for \$70.00, arrangements must be made in advance due to limited supply.** Please email events@nebb.org your preference for left-handed or right handed rental golf clubs.

Golf registration cancellations must be sent to and approved by the NEBB Main Office by **February 19, 2018**. No golf registration refunds will be issued after February 19, 2018.

Conference Advance Program

Thursday, April 26, 2018

5:45 pm – 6:45 pm

Opening Keynote: Conscious Change: Mindfulness Principles for Prosperity, Performance and Peace in an Evolving Business Climate

Speaker: Steve Taubman, DC



Blending a passion for comedy and magic, Steve Taubman is a chiropractic doctor who developed a series of insightful, fun presentations about mastering the subconscious mind which were quickly embraced by organizations for their ability to get people in action. His motivation and enthusiasm continues to enthrall

audiences worldwide, helping them remove mental barriers to achieving their dreams.

Session Overview:

During crisis, certain leaders rise to thrive in their changing business. These unique individuals discovered the secret of staying calm and effective where others fall to the effects of stress. In this entertaining and content-rich program, Dr. Taubman shares secrets of peak performance under pressure. You'll learn how to:

- Identify triggers early and respond to them appropriately
- Release stress without having to leave your work behind
- Generate a sense of humor when things become chaotic
- Benefit from mindfulness meditations techniques at work
- Increase performance from your team and yourself
- Diminish conflict and misunderstanding among staff
- Spot valuable business opportunities that others overlook

For the brave, you can experience hypnosis first-hand and be given powerful posthypnotic suggestions that increase productivity, performance, and inner peace.

Friday, April 27, 2018

8:00 am – 9:30 am

TRACK 1

The Psychology & Best Practices of Ultrasonic Flow Meters

Speaker: Brent Baird



Circa 1977, Brent and his father, Jim Baird, founded Dynasonics, one of the first Ultrasonic Flow Meter manufacturers and developed many of the core foundations for clamp-on Doppler and Transit Time flow meter technologies still in use today. Brent's

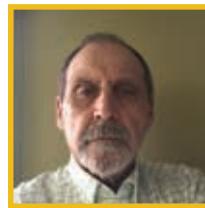
educational presentations focus on Ultrasonic flow meters, energy technology, theory of operation, applications, and best practices.

Session Overview: Ultrasonic Flow Meters are a standard piece of test equipment for TAB applications. NEBB contractors must know how to use the meter at its peak performance level, optimizing the tool's ability to deliver conclusive test results. This session will review Best Practices including the psychology and installation guidelines for delivering convincing test results and accomplishing proper applications under good and bad conditions

TRACK 2

How Codes and Standards Enhance the Commissioning of a Lab Environment

Speaker: Bohdan Fedyk



As NEBB's Technical Director, Bohdan Fedyk is a past member of the NEBB Board of Directors, past NEBB FHT Committee Chair, was member of the ASHRAE-110 committee and is presently a NEBB Certified Professional in FHT, TAB, S&V & BSC. In the field for over 30 years, he designed laboratory and

testing protocols for various environments from chemical to radiological as well as extensive work in the healthcare field.

Overview: This session will focus on a proactive approach to the research laboratory model by providing a better understanding of laws and regulations and the influence in establishing a Laboratory Commissioning Plan through planning, implementation, validation, and reassessment.

TRACK 3

Emerging Business Opportunities for NEBB Professional & NEBB Certified Firms

Speaker: Luis Chinchilla



Luis Chinchilla is the Director for OPIA Operaciones e Ingeniería de Avanzada de Centroamérica S.A. He is a licensed Chemical Engineer in Costa Rica with a masters degree in Business Administration with a major in Finance and a masters degree in Business Administration, majoring in General Management.

He holds the NEBB TAB CP, CPT CP, CxPP and the BSC CxCT. A member of the Chapter Capital-Mar Va International NEBB Board of Directors, he is also a member of the Chapter's Technical Committee.

(Session Overview cont. on pg. 28)

Conference Advance Program

Session Overview: The globalized business environment and natural evolution of certain segments such as the cleanroom and high performing buildings in today's market, with its continuous improvement present new business opportunities for NEBB professionals that can be classified into three different areas for the development countries. (Latin America experience):

1. Validation Engineering Services
2. Vertical Integration within NEBB disciplines
3. Synergy with other Engineering Requirements

9:45 am – 11:15 am

TRACK 1

Step-by-Step Acoustical Analysis of Building HVAC Systems

Speaker: Stuart McGregor



Stuart McGregor is president and senior acoustical engineer at Engineering Dynamics, Inc. With 30 plus years experience analyzing, designing and measuring noise and vibration for architectural and environmental acoustics, his experience covers building mechanical systems on projects ranging from residential condominium

buildings to commercial and industrial spaces. Stuart teaches sound and vibration training seminars for NEBB.

Session Overview:

This session will use a sample building HVAC system to determine how Noise Criteria (NC) or Room Criteria (RC) sound levels are rated in various spaces within the building. An analysis approach will be presented to define the acoustical elements of the HVAC system, the acoustical environment of the building spaces, and the NC or RC goals. The result will show if the HVAC system meets or does not meet the NC or RC goals, and if not, methods to further attenuate HVAC sound levels.

TRACK 2

Cleanroom Session: To be Announced

Speaker: To Be Announced

Check the NEBB Annual Conference website for complete details!

TRACK 3

Calibration for the Testing & Balancing World

Speaker: Kevin Radzik

Kevin Radzik is a recognized expert in the application of the ISO/IEC 17025 standard for calibration and test labs. Kevin has parlayed his pharmaceutical experience in



temperature, pressure, and humidity to become a technical expert in the calibration and measurement of several additional fields including: electrical properties, fluid dynamics, accelerometry, mass, and substance properties.

Session Overview: Attendees will learn about the earliest elements of calibration: length and mass (weight) and why they were important in ancient world commerce. Discussion will focus on why calibration is important to ensure accurate results, 2018 changes to the requirements for calibrations, and traceability -- what it means and why it is one of the most important concepts in metrology and calibration.

12:30 pm – 2:00 pm

TRACK 1

Commission Thyself: Do to Yourself What You Do To Others

Speaker: Jonathan Strausbaugh



Jonathan Strausbaugh served in the US Navy's Explosive Ordinance Disposal community and after a tour in Japan, he became a Journeyman Pipefitter, Plumber, and Welder. He obtained his degree in Mechanical Engineering and as a Commissioning Lead, he developed commissioning processes and programs for DoD.

Mentoring, training, evaluating projects and developing commissioning products is his current focus as the Commissioning Supervisor for Parsons Federal Services.

Session Overview: What sets your company apart from others in your geographic location? Is your firm memorable? Daily commissioning firms work to give clients the best service possible. Many build the work products around the client's personality. Others try to match their available employees to the best fit assignments. Do each of your team members present themselves as part of your business? Do you have a brand or business personality? How do your systems work? NEBB provides the basic tools for you to be successful, this session will help you apply them to your business.

TRACK 2

Air Flow Pattern Studies



Speaker: Chad Flynn

Selected info on airflow visualization tests and key activity when conducting smoke studies to qualify, and/or requalify cleanrooms.

Conference Advance Program

TRACK 3

Chapter Affairs & Firm Certification: Bringing Clarity to Firm Certification Requirements

Speakers: Don Hill, Tiffany Suite, Jeffrey Schools, Glenn See, Bohdan Fedyk



Don Hill is president of AccuTec Services, Inc. based in Lee's Summit, Missouri. Don has a BSME from the University of Missouri, Kansas City and is a registered professional engineer. Don began his career as a design engineer and has leveraged that experience into providing TAB, Commissioning, Cleanroom related

services and creative solutions for critical environment facilities across the United States. Don is President of NEBB and served on the Board of Directors for many years.

Session Overview: This panel will focus on NEBB's Firm Certification requirements as it relates to NEBB's Operational Procedures, and will dig deeper into what it takes to become a NEBB certified Firm. Topics of discussion will include application requirements, compliance, designated Certified Professionals and their importance to the firm.

2:15 pm – 3:45 pm

TRACK 1

Upcoming Regulatory Changes in Healthcare Ventilation: How it Impacts NEBB Firms

Speaker: Mike Locke



With 46 years' experience in troubleshooting, design analysis, maintenance, commissioning and IAQ, Mike Locke is a quality and expert witness for mechanical, electrical and plumbing systems in commercial, industrial and institutional facilities in the US. Having served on NEBB's Board of Directors, he holds numerous

commissioning certifications from NEBB and is highly involved with ASHRAE. Mike provides technical advice to Life Safety Code Officials and to over 600 Healthcare and GMP's around the country.

Session Overview: High level discussions are occurring within ASHRAE and ASHE and the Facilities Guidelines Institute about potential changes to the Requirements for Air Changes, Air Exchanges & Room Pressurizations in Healthcare Facilities. This session is intended to provide the basic knowledge for testing, adjusting and verification of the air changes/exchanges and pressurizations of the critical care areas in a healthcare facility. There will be opportunities for Certified Firms and Personnel as the discussion continues this year and is integrated into the requirements listed in ASHRAE Standard 170.

TRACK 2

Laboratory Ventilation Effectiveness (VEEF) Compared to Air Change Rates

Speakers: Kevin Gebke & Tom Checksfield



Kevin J. Gebke is the New Product Development Engineer at DuctSox Corp., Dubuque, Iowa, a manufacturer of textile based HVAC diffuser products for traditional and critical environments. Gebke holds a B.S degree in engineering from the University of Illinois, an MBA from the University of Dubuque, and

has over 20 years of experience in HVAC air distribution, diffusion, and movement discipline.

Tom Checksfield is currently Senior Vice President, Business Operations at Exposure Control Technologies, Inc. Mr. Checksfield has over 30 years of experience in the HVAC, Energy Management and Laboratory Control fields and is active in, ISPE, CETA, and I2SL. Mr. Checksfield sits on several committees for the development of best practices and code requirements for laboratory ventilations design.

Session Overview: With energy costs often exceeding \$10.00 per square foot, laboratory buildings have some of the highest costs of any building type. Laboratory ventilation can be as much as 60-80% of the entire building's energy consumption. This presentation will explain what lab ventilation risk assessment (LVRA) is and how to implement it. Steps required for developing this lab management plan will be discussed and learning why the LVMP is important and how it can be utilized as a tool for all building/campus stakeholders to communicate.

TRACK 3

Utilizing Technology to Achieve Excellence

Speaker: Dane Richards & NEBB's Young Professional Panelists



The YPN Ad-Hoc Committee began in late 2016 and operates with a mission of "Serving as a resource for young professionals to cultivate the growth of NEBB for generations to come." The Young Professionals Network Ad Hoc Committee welcomes participation by young NEBB Professionals, Technicians and approved Certification Candidates.

Session Overview: The ever-changing nature of the construction industry presents many challenges. While technology is intended to address these challenges, it has challenges of its own. The YPN Ad-Hoc Committee will

(Cont. on pg. 30)

Conference Advance Program

present how several technology platforms can be leveraged to improve efficiency, stay ahead of the curve in day-to-day operations, and achieve overall excellence. This interactive presentation will include pitfalls to avoid when introducing technology, a "roadmap" for how to evaluate technology platforms, and a demonstration of several platforms to provide real-world examples.

Saturday, April 28, 2018

9:45 am – 11:15 am

The 7 Principles of Transformational Leadership

Speaker: Hugh Blane



Working with business and universities in seven countries and thirty-five states, Hugh is the executive coach for the Helen M. Young Fellowship at Pepperdine University. Prior to founding Claris Consulting, he was the youngest partner at the Effectiveness Institute, a consulting firm in Washington State. He honed his consulting skills as a senior consultant

with the internationally renowned Tom Peters Company.

Session Overview: NEBB professionals are being asked to do more, faster, with fewer resources and with tighter margins. Leaders end up feeling overwhelmed, ineffective and incapable of improving their career and professional life. They may believe they don't have time or energy to think purposefully or strategically about their professional lives. This session will show attendees how to accomplish four objectives:

1. Live professional and personal life with purpose and passion
2. Execute strategic priorities effectively and with accelerated results
3. Compel employees and customers to enthusiastically follow your lead
4. Cascade excellence throughout your organization

12:30 pm – 2:00 pm

TRACK 1

Air Flow Measurements – Part 1

Speaker: David Dougan



With 32 years' experience with EBTRON, Inc., David has been the president of EBTRON since 1993 and is an integral part of the design and development of ground breaking products in the industry. A published author of numerous papers on airflow measurement and control featured

in industry publications his expertise in measurement and

control of airflow rates for acceptable indoor air quality and building pressurization is well regarded.

Session Overview: This session will focus on:

1. Pressurization fundamentals - the pressurization airflow.
2. Outdoor air intakes - internal/external factors that influence intake flow rates.
3. Preferred airflow measurement paths for building pressure and outdoor air control.
4. Control strategies - how poor control strategies can undermine your work.

TRACK 2

The Psychology & Best Practices of Ultrasonic Flow Meters

Speaker: Ray Markey



Ray Markey is the Western Region Manager – Commercial Products Division for Dynamic Air Quality Solutions. He is a Certified Air Filtration Specialist (CAFS) and worked in the field of environmental science for over 30 years and is active with the National

Air Filtration Association, the U.S. Green Building Council, the International Society for Pharmaceutical Engineering, and the American Marketing Association.

Session Overview: This session focuses on the evolution of air filters--from simple filters to technologically advanced equipment that can target specific contaminants of concern, examining the trade-off between filter efficiency and air resistance in passive filters and how new technologies allow higher dust holding capacities without high static pressures. Attendees will learn about the evolution of codes and standards for ventilation air and alternatives to ventilation rates that were determined when smoking was widely accepted.

TRACK 3

Analyze Problems & Make Decisions

By: Dale Carnegie Training



Dale Carnegie Training Programs help individuals strengthen their interpersonal relationships, manage stress and handle fast-changing workplace conditions. Professionals who take Dale Carnegie courses are better equipped to perform as a persuasive communicators, problem-solvers and focused

leaders. Known world-wide for its ability to help individuals find their hidden potential, NEBB's breakout sessions are sure to provide high appeal.

(Session Overview cont. on pg. 31)

Conference Advance Program

Session Overview: A great challenge facing professionals is making sound decisions when adequate time, data and resources are unavailable. Attendees will obtain a variety of tools and techniques to analyze and solve problems and the skills acquired in this session will enable them to make sound and effective solutions that bring value to teams and organizations. Topics will cover:

1. Learn defined processes to identify challenging problems
2. Employ creative thinking to gain innovative solutions
3. Analyze and identify root causes of problems and generate a list of possible solutions

2:15 pm – 3:45 pm

TRACK 1

Air Flow Measurements – Part 2

Speaker: David Dougan



Session Overview: Part 2 of this session will focus on:

1. Accuracy requirements for proper control of the pressurization and intake flow rates.
2. Startup and verification basics; understand the equipment you are evaluating and the tools you are using for verification.
3. Verification vs. adjustment - when/when not to adjust?
4. Verification/adjustment techniques that minimize uncertainties and improve building performance, with examples.

TRACK 2

Modified ASHRAE 110 Testing & the Latest Biosafety Cabinet Type

Speaker: Beth Mankameyer & Jim Hunter



Beth Mankameyer is a sales engineer for chemical fume hoods at Labconco Corporation. She holds degrees from the University of Kansas and the University of Saint Mary and is a Construction Documents Technologist certified by the Construction Specifications Institute and a LEED Green Associate. She has been with Labconco since December 2013.



Since 1985, Jim Hunter worked with the Biological Safety Cabinet engineering team at Labconco Corp. Responsible for new biosafety cabinet development and technical support for 27 years, his various roles have included Microbiologist, Senior Engineer, and Senior Project Engineer. Jim is a member of the NSF Certification Council, the ANSI/NSF Standard

Number 49 Joint Committee, and the NSF International Biohazard Cabinet Field Certifier Accreditation Program.

Session Overview: Attendees will learn about different types of fume hood systems, the operation of fume hoods, including the differences between a standard fume hood and a high-performance fume hood. Different modifications to the ASHRAE 110 test will be covered, including ductless and ducted fume hoods. The new C1 Biosafety Cabinet will also be discussed, explaining how it is different from the A and B classes, and what you need to know when you encounter one.

TRACK 3

Communicating Effectively with People of Different Personality Styles

By: Dale Carnegie Training



Session Overview: Accomplishing the most with people requires us to know our own personality styles and tendencies and to appreciate the same in others. Interacting with those who styles similar to ours is easy. Dealing with those with different styles can be challenging. Flexibility is essential when working with different

styles along with the willingness and ability to others' viewpoint. This session will analyze four personality styles, examine each style's characteristics and give an assessment to determine attendees' style. Attendees will engage in:

1. Identifying characteristics of the four personality styles
2. Assessing your dominant style and how you react under pressure
3. Working effectively with others by developing an understanding of teamwork styles

4:00 pm – 5:00 pm

Closing Keynote: Communicating Effectively with People of Different Personality Styles

By: Dale Carnegie Training

Session Overview: Motivation is impacted by understanding how to inspire and engage coworkers, use tangible and intangible rewards, and appeal to a sense of belonging and importance. In this closing keynote, you will recognize and develop the human potential in your team or organization, apply a method of offering recognition and appreciation and value the differences in others. Learn how to:

1. Examine your work environment and identify current motivation levels of your team members
2. Develop awareness of why people lose motivation
3. Understand key motivation factors and use specific tools to increase motivation in others

Hotel Information

Sheraton Hotel and Marina
1380 Harbor Island Drive
San Diego, CA 92101
Phone: 619.291.2900

NEBB's Discounted Single/Double Rate: \$199.00

To ensure the NEBB discounted room rate, reservations must be made March 30, 2018 by 5:00 pm PST. Group rooms may sell out, so don't delay! Rooms are subject to availability.

Reservations made after March 30, 2018 will be on a space-available-and-prevailing-rate basis.

Conference Fee Breakdown

Fee as of January 1, 2018

Full Conference Registration \$1000

- o Opening Session on April 26
- o Get Acquainted Reception on April 26
- o Two Full days of Technical Track Sessions (April 27 & 28)
- o Breakfast, Lunch, Morning and Afternoon Breaks (April 27 & 28)
- o Vendor Reception and Prize Giveaway on April 28
- o Closing Session on April 28

Guest Registration \$400

- o NEBB Guest Shopping Opportunity* on April 26
- o Opening Session on April 26
- o Get Acquainted Reception on April 26
- o Vendor Reception and Prize Giveaway on April 28
- o Closing Session on April 28

Guest Registration (Minor) 18 & Under \$250

- o NEBB Guest Shopping Opportunity* on April 26
- o Opening Session on April 26
- o Get Acquainted Reception on April 26
- o Vendor Reception and Prize Giveaway on April 28
- o Closing Session on April 28

**More details to come*

Payment Information

Online registration is payable by credit cards (American Express, MasterCard, Visa and Discover) or check. If paying by check, please make payable to the NEBB Main Office and mail the check along with a 2018 NEBB Annual Conference Paper Registration Form.

Attention: NEBB – Annual Conference Registration
8575 Grovemont Circle, Gaithersburg, MD 20877

Note: NEBB's taxpayer ID# is 23-7180848

****Paper Registration Forms MUST be received and confirmed by NEBB Main Office by Monday, April 16, 2018.***

Optional Items:

Activity	Date/Time	Cost
21st Annual Golf Tournament	April 26, 7:00 am – 2:00 pm	\$190
Golf Club Rental	April 26, Pick up at Golf Course	\$70
NEBB Logo Polo Shirt	Pick up at Conference Registration Desk	\$35 for sizes S – XL
NEBB Logo Polo Shirt	Pick up at Conference Registration Desk	\$40 for sizes 2XL – 5XL
BET Seminar	April 23 – 24	\$800
BSC CxCT Seminar	April 23 -24	\$850
Optional NEBB Exam Day	April 25	Contact certification@nebb.org for details and pricing

Registration Changes

All Conference registration changes should be emailed to: events@nebb.org. Please contact the hotel and airline directly for travel updates.

Cancellation Policy:

Written Request Received by March 1, 2018	Full cancellation less a 25% admin fee
Written Request Received after March 1, 2018	Nonrefundable
No-show for any reason	Nonrefundable

Continuing Education Credits (CECs)

- NEBB Certified Individuals registered for the 2018 Annual Conference will receive continuing education credits (CECs) for attending technical and educational sessions.
- Electronic scanning will be done for each session in order to verify attendance and allocate the appropriate number of CECs to the CP or CT.
- The 2018 Conference Program Guidebook will have the number of CECs awarded listed by each session.
- CECs are calculated by the number of actual educational hours attended per session: 60 minutes = 1 CEC; 90 minutes = 1.5 CECs.
- CECs obtained by attending sessions at the annual conference can be used for submission for NEBB recertification requirements.
- CECs are awarded only for educational or technical sessions.
- Email certification@nebb.org for answers to any continuing education credit questions.

2018 NEBB Annual Conference Registration Form

Thursday, April 26 – Saturday, April 28, 2018 | San Diego, CA

Please visit our 2018 Conference website: nebb.cvent.com

- Registration form and payment must be received and confirmed by NEBB Main Office by **April 16, 2018**.
- Each attendee complete 1 registration form.
- **After April 16, 2018, please register online.**



Name (displayed on badge): _____ Email Address: _____
 Company Name: _____ Phone Number: _____
 Address: _____ ADA/Dietary Restrictions: _____
 City/State/Zip code: _____

Item Description/Fees as of January 1, 2018	Quantity		Total
Full Conference Registration - \$1,000		One per Sheet	
Thursday ONLY Registration - \$175			
Friday ONLY Registration - \$450			
Saturday ONLY Registration - \$450			
Optional Items As of January 1, 2018		Shirt/Size Rentals?	
Guest Registration - \$400			
Minor Guest Registration - \$250			
NEBB Polo Shirt: S – XL \$35 *Please indicate Shirt Size (Small, Medium, Large or X-Large)			
NEBB Polo Shirt: 2XL – 5XL \$40 *Please indicate Shirt Size (2XL, 3XL, 4XL or 5XL)			
Golf Tournament Registration - \$190			
Golf Tournament Club Rentals - \$70 *Please indicate Left-handed Clubs or Right-handed Clubs			
Golf Polo Shirt Size (Included in golf fee) *Please indicate Shirt Size (Small, Medium, Large or X-Large)			

Payment Method: ☐ VISA ☐ MasterCard ☐ AMEX

Check: Make payable to NEBB. Conference registration is NOT confirmed until payment has been received.

Total Amount Due: _____ Date: _____

Name on Card: _____

Credit Card #: _____ Exp. Date: _____

Signature: _____ Sec. Code: _____

NEBB Cancellation Policy: A 25% Cancellation Fee will be applied if written request is received/approved by March 1, 2018. After March 1, 2018 cancellation requests are non-refundable.

NEBB Main Office, 8575 Grovemont Circle, Gaithersburg, MD 20877

NEBB NEWS

CHAPTER UPDATES

TEBB Chapter

By William C. Bailey, TEBB TCC

On December 8, 2017, TEBB and its Board of Directors held its end-of-year meeting in Jackson Tn. The Chapter is experiencing continued growth with an influx of certified firms and those interested in pursuing individual certification. The Nashville area is undergoing a construction boon with multiple facilities both downtown and in outer areas which translates to solid business for area TAB firms. The Chapter will be represented well at NEBB's Annual Conference in San Diego with multiple CPs attending.

The TEBB Chapter's 2018 continuing education class is tentatively scheduled May 1, 2018 in Memphis. Chapter Leadership sends a special thanks to NEBB Staff for the support offered to the Chapter this past year.



Pictured left to right: TEBB Chapter Members Rob Ratliff, William Bailey, Otto Tittle, Andrew Tittle, Walter McCauley, and Chris Palmer.

MEBB Florida Chapter

By Terry Wichlenski, Chapter Coordinator

The FEBB Chapter 37th Annual Recertification Conference and Business Meeting is scheduled Thursday and Friday,

May 17-18, 2018. Held at the recently refurbished Mission Inn Resort & Club, the event will have optional activities arranged for Thursday and Friday mornings for all if interested. Located in a Spanish architectural setting with spring-fed lakes and historic oaks, Mission Inn is touched by history and natural beauty, found 35 minutes northwest of Orlando. For details, check out www.missioninnresort.com.

FEBB 2018 TAB Practical Exams Dates

FEBB's 2018 TAB CP Practical Exam dates are set for Friday and Saturday, June 1 or 2 and Friday and Saturday, September 14 or 15 at FEBB's Testing Labs located in Jacksonville, Largo & Deerfield. Friday exams are conducted at the Jacksonville location; Saturday exams are held at the Largo and/or Deerfield locations. **Reservations are now being accepted by email or telephone for the TAB CP Practical Exam in June 2018; deadline for receipt of completed paperwork and payment is Tuesday, May 1, 2018.**

Interested Candidate must send name(s) and fees to the FEBB Chapter Coordinator prior to May 1st. Payments by check are to be made payable to "FEBB." Candidates may indicate their preference as to date and every attempt will be made to accommodate this request. Space is limited - so call today to reserve your spot!

For fees and details on FEBB's Annual Recertification Conference & Business Meeting or the TAB CP Practical Exam, contact Terry Wichlenski at FebbCoordinator@gmail.com.

MAEBA Chapter

By Trish Casey

The recent MAEBA Recertification Seminar in Atlantic City, NJ, the MAEBA Technical Committee chaired by Matthew Sano, had a full day of engaging topics. MAEBA President David Wood introduced Don Hill, NEBB President Elect who presented a NEBB national update.

Presentations included: NFPA 70E Arc Flash Electrical Safety by Safety Professionals Greg Wharton and John Connolly; Hospital Guidelines presented by the Facility Guidelines Institute (FGI); and presentations by David B. Uhaze and

John Dombrowski, PE. Other topics included Predictive Balancing by Jon Virkler and Jonathan Lofberg of Dwyer; Kitchen Hood Exhaust Systems by Jessica Harrington and John Stahel of Accurex Engineered Restaurant Systems, A Greenheck Co. and FGI Hospital Guidelines. The seminar ended with Mike Kelly presenting on Cleanroom certification.

Save the Date for MAEBA's 2018 Semi-Annual Meeting scheduled for April 18, 2018 at the Radisson Hotel in Treve, PA. The program will begin at 11:30 am with a lunch and vendor display, with the seminar program scheduled from 12:30 pm – 3:00 pm.

The MAEBA Board of Directors voted to introduce a Vendor Award in memory of Andrew Stadheim. The first Andrew Stadheim, P.E. Award went to Andy's company, Building Start. Scott and Clark Stadheim, Andy's brothers, with his parents Dave and Linda, accepted the inaugural award. Andy was a discerning innovator in mobile technologies with the launch of Building Start (formerly Airnab). NEBB firms know this technology as an automated mobile platform for the documentation of installations and maintenance related to critical mechanical systems in commercial and residential buildings. Andy's endearing and approachable personality somehow exceeded his success as an innovator and business executive. He had a smile for everyone, with an infectious, positive attitude and incredible generosity.



Pictured left to right: Clark Stadheim, Scott Stadheim, Linda and Dave Stadheim.

Northeast EBB Chapter

Northeast EBB recently announced its new president, Olaf Zwickau, CP, from USA Balancing, Inc.

Northeast EBB represents Connecticut, Maine, Massachusetts, New York City, New Hampshire, Rhode Island and Vermont and is also a NEBB-approved TAB CP Practical Exam site.

Keep Current with the Latest NEBB Publications



To order, go to www.nebb.org and complete the [publications order form](#). You can also contact our office at 1.301.977.3698 or email marketing@nebb.org.

Got an Article Idea?

Contact *The NEBB Professional* magazine (communications@nebb.org) with your story idea.

You don't have to write a word; just talk with the staff writer and your story will be put together for you. Ask any of the NEBB professionals who have appeared in this issue how easy their story was to write.



2018 Technical Seminar Schedule*

NEBB's Technical Seminars sell out at a fast pace, so don't wait to register. Dates and locations are set, but keep a watch on the 2018 NEBB Events Calendar page at www.nebb.org because completed seminars brochures will be posted to that site and are coming soon! **For more information, email training@nebb.org!**

MARCH 2018

BSC Advanced Certificate Course

Seminar Dates: **Monday, March 12 – Friday, March 16, 2018**

Course Registration Deadline: Monday, February 26, 2018

NEBB TEC, Gaithersburg, MD

Optional Certificate Test Dates: Daily, at the conclusion of the training

APRIL 2018

S&V CP Seminar

Seminar Dates: **Monday, April 2 – Friday, April 6, 2018**

Seminar Registration Deadline: Monday, March 5, 2018

Total Dynamic Balance Facility, Deerfield Beach, FL

Optional SM Exam Date: Wednesday Morning, April 4, 2018

Optional VM Exam Date: Friday Afternoon, April 6, 2018

BSC CxCT Seminar

Seminar Dates: **Monday, April 23 & Tuesday, April 24, 2018**

Seminar Registration Deadline: Monday, April 9, 2018

Sheraton Hotel and Marina in San Diego, CA

Optional Exam Day: Wednesday, April 25, 2018

Building Enclosure Testing (BET) Seminar

Seminar Dates: **Monday, April 23 & Tuesday, April 24, 2018**

Seminar Registration Deadline: Monday, April 9, 2018

Sheraton Hotel and Marina in San Diego, CA

Optional Exam Day: Wednesday, April 25, 2018

MAY 2018

CPT Seminar

Seminar Dates: **Monday, May 21 – Wednesday, May 23, 2018**

Seminar Registration Deadline: Monday, May 7, 2018

Facilities at IND Vancouver, WA: 18110 SE 34th Street, Vancouver, WA 98683

Optional Exam Dates: Wednesday, May 23 – Thursday, May 24, 2018

JUNE 2018

FHT Seminar

Seminar Dates: **Monday, June 4 & Tuesday, June 5, 2018**

Seminar Registration Deadline: Monday, May 21, 2018

Labconco, Kansas City, MO

Optional Exam Dates: Wednesday, June 6 – Friday, June 8, 2018



TAB CP Seminar

Seminar Dates: **Monday, June 11 – Wednesday, June 13, 2018**

Seminar Registration Deadline: Monday, May 28, 2018

NEBB TEC, Gaithersburg, MD

Optional Exam Day: Thursday, June 14, 2018

AUGUST 2018

RCx Seminar

Seminar Dates: **Monday, August 13 – Thursday, August 16, 2018**

Seminar Registration Deadline: Monday, July 30, 2018

NEBB TEC, Gaithersburg, MD

Optional Exam Day: Friday, August 17, 2018

OCTOBER 2018

CPT Seminar

Seminar Dates: **Monday, October 1 – Wednesday, October 3, 2018**

Seminar Registration Deadline:

NEBB TEC, Gaithersburg, MD

Optional Exam Dates: Wednesday, October 3 – Thursday, October 4, 2018

TAB CP Seminar

Seminar Dates: **Monday, October 8 – Wednesday 10, 2018**

Seminar Registration Deadline: Monday, September 24, 2018

IMI Training Facility, Roswell, GA

Optional Exam Day: Thursday, October 11, 2018

BSC Seminar

Seminar Dates: **Monday, October 15 – Wednesday, October 17, 2018**

Seminar Registration Deadline: Monday, October 1, 2018

NEBB TEC, Gaithersburg, MD

Optional Exam Day: Thursday, October 18, 2018

NOVEMBER 2018

FHT Seminar

Seminar Dates: **Monday, November 5 & Tuesday, November 6, 2018**

Seminar Registration Deadline: Monday, October 22, 2018

Labconco, Kansas City, MO

Optional Exam Dates: Wednesday, November 7 – Friday, November 9, 2018

* Subject to change



NEBB
8575 Grovemont Circle
Gaithersburg, MD 20877
USA



2018 NEBB 
Annual Conference

San Diego
April 26-28, 2018

**Achieving Excellence in a
Changing Environment**

- Check out NEBB's 2018 Annual Conference details, pg. 21
- To update mailing address and to continue to receive *The NEBB Professional*, please send an email to communications@nebb.org.

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