Message from James Pavesic
Director of Education and Training

I hope that everyone has had a Happy Holiday season! I would like to take the time to thank General President Mark McManus for having the confidence in me to run one of the most important departments in the UA. I would also like to congratulate Chris Haslinger on his new appointment as Administrative Assistant to the General President and thank him for his seven years of dedication and leadership as the Director of Education and Training. His vision for the ITF to utilize the most up-to-date technology will continue as we move into 2019. I would like to welcome Ray Boyd as the Assistant Director of Education and Training, and I look forward to working with Ray who brings over 32 years of experience to the department. Together, we look forward to working with everyone in the Education and Training Department to continue our quest to offer the very best training for our members. That training will always involve cutting-edge technologies and processes, which will enable our UA membership to have the educational resources to acquire and maintain employment while offering our contractors a competitive edge with the best-trained workforce in the industry.

MISSION STATEMENT

The mission of the UA Education and Training Department is to equip United Association locals with educational resources for developing the skills of their apprentices and journeymen. By thus facilitating the training needs of the membership, we maximize their employability and prepare them for changes in the industry. We are committed to making training opportunities available across North America, allowing members to acquire new skills and remain competitive in the industry regardless of geography. In this way, we are determined to meet the needs of the piping industry and enhance employment opportunities for our members, while remaining fiscally responsible to the beneficiaries of the fund.
In 2019, our department already has several exciting programs on the books. On February 19-21, the ITF will be holding the 2019 Pipe Trades Training and Technology Conference in San Diego, CA. This year’s conference has been designed to ensure that our training directors/coordinators and our JATC committees are given an opportunity to see firsthand the many programs we have to offer. This year’s theme is “Transforming the Piping Industry through Training and Technology.” This theme reflects our recognition that in today’s workplace environment, a well-trained workforce and effective use of technology are viewed as having a major influence on the successful completion of projects. The productivity and safe practices of that workforce are also seen as strong influencers. We know that the path to a safe, productive jobsite begins at the door of a successful, relevant training program, and this conference is an opportunity to learn more about how we are continuing to lead the way along that path for our members. We strongly urge you to attend.

Some of the workshops being offered at this year’s conference include: Supporting Women in the Trades, Recruitment Resources and Strategies, Implementing the UA Water Quality Program, Starting and/or Expanding Your UA Service Technician Program, and Accelerate Your Training with Technology. And of course workshops associated with running training centers, such as Apprenticeship Regulatory Updates.

In addition, we will be featuring a 20,000 square foot industry expo that will give you an opportunity to interact with over 50 industry experts and leaders, view demonstrations, and to experience some of the latest technologies offered. There will also be a special Technology Test Drive, showcasing the latest in education and jobsite technologies. Tuesday morning from 8:00 a.m. to noon, there will be a training director/coordinator meeting. This meeting is designed to focus on the latest education and training department upgrades. Wednesday night, February 20th, there will be a performance by the Milwaukee Tool Shed Band, sponsored by Milwaukee Tool and Bradford White.

To register for the 2019 Pipe Trades Training and Technology Conference, go to UAnet.org under the UA news tab and click on the link. For questions regarding registration, please contact Cathy Merkel, UA Registrar, at cathym@uanet.org.

There will also be a new JATC training director/coordinator meeting in Annapolis, MD, March 11-14, 2019. This three-day meeting is designed to give the new directors/coordinators information and tools that will assist them in their new roles. For more information, contact Suzanne Ellis at suzannee@uanet.org.

In closing, I want to wish everyone a healthy, happy, and safe New Year, and I’m looking forward to working with you all! ■

Implementing Construction Technology into Your Training Center
from Kenneth Schneider, UA Training Specialist

Installation on the Digital Jobsite

In the UA Education and Training Department’s quest to stay on top of technology, several members of the UA VDC team attended Autodesk University (AU). This is an annual event that brings in all the different industries that utilize Autodesk products. This year, construction led the way in attendance. This is a clear sign that construction is advancing in technology as installation increases on the digital jobsite. The percentage of construction attendees has been rising with each year. This is the first time that construction has led the way, and I believe we will continue to see these numbers increase as the years advance. This year’s theme at AU was working together. The idea is to ensure that communication and col-
Collaboration begins as soon as possible on construction. This begins on the digital jobsite, aka the computer. The digital jobsite begins with a building or model that will need to have piping and equipment installed—yes, I said installed. This is when installation begins with what pipe to use, where the pipe is routed, and how best to hang the pipe. I do not know anyone more skilled at installation than UA members, and I believe that we have a great opportunity to get our members engaged in this work. I believe these are great tools to use in our classroom to better engage an apprentice and journeyman in our training programs and show the technology that is being used to create the jobsite they are working on.

Utilizing Construction Technology in the Classroom and Beyond

Construction technology is here to stay and the time to engage is now. This leaves a question to be answered by each training director. Are you doing what is needed to advance technology training for your members and contractors? This is a very hard question to answer since technology is moving so quickly, however, we are here to help and assist with implementing technology. Over the last two years, the UA Education and Training Department has put together a BIM/VDC tour. This year will be our third year. In 2017, we gave a taste of the BIM/VDC courses that were available at ITP. In 2018, we began some hands-on training in Revit, along with demonstrating the BIM/VDC workflow which was offered at ITP 2018 and will again be available at ITP 2019. This year’s tour will be focused on Revit and Reality Capture with the idea that these tools can be utilized in other training that is provided at the local training centers. Using Revit, we will work on a few piping projects. These will be training projects as well as apprentice type projects that can be utilized at state and local apprentice contests. We will also include a taste of Reality Capture that can show how this technology can be used to capture your training centers and equipment that can be used to enhance your current training courses at your training centers. Imagine having a 3D model of your training center with all of the piping and equipment that you currently train on. Imagine being able to modify the piping and equipment in the digital world. Imagine all that is possible to give us the ability to better train our members. The dates and locations for this craft specific regional training are set. I hope to see your instructors learning how to incorporate construction technology into your existing training. Please see the schedule below.

<table>
<thead>
<tr>
<th>Course</th>
<th>Dates</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>3096 Revit &amp; Reality Capture - Mechanical</td>
<td>June 11-13</td>
<td>LU 208, Denver, CO</td>
</tr>
<tr>
<td>3097 Revit &amp; Reality Capture - Plumbing</td>
<td>July 23-25</td>
<td>LU 690, Philadelphia, PA</td>
</tr>
<tr>
<td>3098 Revit &amp; Reality Capture - Fire Protec</td>
<td>May 7-9</td>
<td>LU 268, St. Louis, MO</td>
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</tbody>
</table>

If you would like additional information, please contact Ken Schneider at kens@uanet.org. Thank you!

Note from the Registrar’s Office

by Cathy Merkel, Registrar

Happy New Year! We are pleased to announce that the registration for the Pipe Trades Training and Technology Conference, which is scheduled for February 19-21, 2019, in San Diego is now open. Please take advantage of attending these very informative workshops as well as the expo. Be sure to sign up via uanet.org.
Also, Regional Training registration is open. Many of the courses offered through the regional training system are not offered at the Instructor Training Program (ITP).

The Instructor Training Program is scheduled for August 10-16, 2019. This will be the 66th anniversary of the Instructor Training Program and our 30th year at Washtenaw Community College. Each year, the UA Education and Training Department strives to offer new and innovative courses along with our core courses.

It is important to do the following when registering yourself or your instructors for the Instructor Training Program:

- Review a current transcript and ensure that course prerequisites have been met.
- If you need to obtain a current copy of a transcript, please contact the registrar’s office.
- Students enrolled in courses 1001-103 must complete the reflective teaching assignments (RTAs) before moving on to the next course.
- Provide accurate profile information and an individual email address for each registrant.
- Complete the survey questions; ensure to select the appropriate box if graduating.
- Those eligible for an associate degree from Washtenaw Community College should contact Brittany Tripp, Manager of UA Programs, at bstripp@wccnet.edu or 734-973-3685.
- Note the personal protective equipment (PPE) required for each course.
- If you register others, please share the brochure and courses with those individuals.

How Does an Apprentice Get Started in BIM?

by JB Knowledge and JB Contributor Jason Ashburn, BIM Instructor Local 597

Before getting started in BIM, we need to understand what BIM is and is not, how BIM is used, and how it applies to the pipe trades. BIM, building information modeling, is not a wonderful cure-all for construction. BIM models will only be as great as the information provided in the model. BIM is a tool. It can be wielded both efficiently and inefficiently. It is important that the skilled trades are involved in BIM from the start of any project. These are the men and women who are going to be building these projects, the men and women with experience in building these highly complicated projects and piping systems. Building in a BIM program will be an easy transition for United Association members. They already know how to install piping systems. It is simply a new venue for these members to work. Members will be building virtually rather than in person. It is just about learning how to convey that piping knowledge onto the computer properly.

I have recently heard a great quote from Pipefitters Local 597 Technology Manager Mike Zivanovic, “Any team that has won a Super Bowl has included the offense and defense in all communication and strategy from Day One. We look at the trades as the offense and defense. We are currently giving them the playbook at kickoff. In order to ensure success, we need to involve the trades from the beginning. Everyone is important when it comes to planning a victory.” Wow! The power behind this statement rings true in so many ways. It does not make sense to leave those who are going to be building in the dark. There was a time when not a single tradesman would see the drawings or prints until the first one was on site. These days are quickly moving behind us. Utilizing BIM on projects and in training facilities will allow the skilled trades to start building virtually. This will ensure a properly installed system the first time—days, weeks, or months before anyone may be on a jobsite.
BIM also allows the skilled trades to open up new career paths. This will allow these organizations to recruit individuals who historically would have changed the world with the Amazons and Googles of the business world, those who want to work directly with technology every day. In a time when it is becoming extremely difficult to fill all of the upcoming construction needs in the United States, BIM is allowing the skilled trades to tap into new pipelines of resources.

Apprentices and journeypersons who are interested in BIM should reach out to their Instructors and Training Directors; let them know they have an interest in learning BIM. Learning BIM means learning numerous programs and new workflows. Most of the programs for the skilled trades will be provided by the Autodesk Skilled Trades Program. These programs include:

- Autodesk Autocad
- Autodesk Revit
- Autodesk CAD MEP
- Autodesk Fabrication
- Autodesk BIM 360
- Autodesk Navisworks
- Autodesk Plant 3D

Many of these programs are taught at the Instructor Training Program in Ann Arbor. By utilizing the information provided at the Instructor Training Program and UA CadLearning, United Association members have the ability to become proficient in all of these programs listed above. Currently, the UA Bookstore sells CADLearning “tokens” to UA training centers that provide user access to CADLearning training products. Beginning mid-February, the UA Bookstore will no longer sell CADLearning tokens in favor of direct sales through the 4D E-commerce website linked from within the UAOLR system. The UAOLR system provides authorized users with access to quality instructor and student resources to standardize and enhance training. CADLearning provides access to a library of self-paced learning materials focused on the training of Autodesk® 2D and 3D design, engineering, and entertainment software. To access CADLearning, you will simply sign into the UAOLR, scroll down to the “Technology for the Pip- ing Industry” tab, under this tab is the BIM/VDC tab, under this tab you will find the UA CADLearning tab that will take you to 4D Technology where you will be able to insert your information, including name, local union number, UA member number, and your credit or debit card information to purchase CADLearning at $70 annually.

CadLearning is a series of instructional videos that take members from the beginning steps of drawing in Autodesk products all the way through advanced steps. These videos are broken down into short instructional videos to be better suited to the needs of today’s learners.

With all of this information available to United Association members, it is becoming easier than ever to learn how to use BIM. The United Association VDC (Virtual Design and Construction) Team has been working with 4D Technologies to make certain that UA CADLearning is filled with the information that is needed to succeed. For more information on UA CadLearning or BIM on the UAOLR, you may always reach out to Ken Schneider, UA Training Specialist at kens@uanet.org. Members of the VDC Team include 2018 Martin P. Durkin Award winner John Russell (Local 5), Pat Ramirez (Local 469), Erik Lambrecht (Local 400), Eric Posey (Local 440), Stephan Schnell (Local 467), Mike Zivanovic (Local 597), Jason Ashburn (Local 597), Casey Becker (Local 597), and Shawn Mulligan (Local 562).

Robotic Layout Stations

by JB Knowledge and JB Contributor Jason Ashburn, BIM Instructor Local 597

The pipe trades have been laying out with a stick rule or tape measure for decades. BIM (Building Information Modeling), Robotic Layout Stations (Total Stations), and Laser Scanning are changing the way the skilled trades work. We have covered BIM in previous articles. Today, we will talk about taking that BIM model and expediting the layout and as-built process.

It is imperative that UA detailers understand the layout and as-built process of any project. Before we get into the role a detailer plays in layout, let us better understand the benefits of Robotic Layout Stations. By utilizing a Robotic Layout Sta-
tion, the pipe trades can remove a portion of human error. We no longer have to worry about reading a tape upside down, taking an inch off the wrong side, or misunderstanding a dimension that is shouted across a noisy jobsite. Instead, a computer, directed by a UA member, will tell the robot where to lay out. Not only will UA members be able to layout quicker, more efficiently, and from an ergonomically correct position, but they will also have the ability to receive this information in a more dynamic manner.

We all know that a major problem on any jobsite is that prints are outdated as soon as they are printed. By utilizing a Robotic Layout Station, members will be able to pull the most current data off a shared platform like BIM 360 or Dropbox. Detailers will be able to keep information current from anywhere in the world for the Robotic Layout Station.

Now that we have discussed laying out, let's talk about collecting data. Robotic Layout Stations can also be utilized for collecting data and information. UA members will be able to eliminate “red-line” drawings. Is there a new piece of steel that is shown on the construction documents? We can collect the location of this steel and send it back to the detailer to make proper adjustments to the piping plans. This is just one example of using a Total Station for collecting data.

But what if there was not enough time in the construction schedule to wait for the detailer? We can then collect data on changes made to piping or equipment. This information can then be sent back to the detailer for as-built purposes. The days of the redline drawings are behind us!

In conclusion, Robotic Layout Stations will dramatically improve production on jobsites. UA members will be able to perform at an even higher level of productivity than ever before. Robotic Layout Stations open new workflows and career paths to the pipe trades. If your local is interested in bringing this training to your members, the following courses are available and by attending one of these courses, your training center will be eligible for RTS equipment through the UA-ITF grant program. For more information, please contact Ken Schneider at kens@uanet.org.

**ITP 2019 RTS Classes**
- 3031 Robotic Total Station Layout – Topcon – Sokkia
- 3032 Robotic Total Station Layout – Leica
- 3033 Robotic Total Station Layout – Trimble®

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**EPA 608 Exam Now Online**

by Carrie King, Certification Manager and Rich Benkowski, UA Training Specialist

The new online EPA 608 certification exam is now the only available CFC exam and will follow the same format as all other UA online certification exam requests through uanet.org. From the certification drop down menu, select EPA 608 Technician Certification. The direct link for the new online exam request is [https://uanet.org/cert_cfc_exam.asp](https://uanet.org/cert_cfc_exam.asp). **ALL EXAMS MUST BE ORDERED TWO WEEKS PRIOR TO THE EXAM.**

Here are a couple of helpful hints when ordering online:

- On the EPA 608 technician certification page, you will click the blue hotlink “Request Section 608 EPA Certification Exam”;
- Complete the entire form adding your members and which exam type they will be taking;
- Click send.

The certification request will be forwarded to the certification staff via email. An email with your students’ username and password will be sent to you from the certification staff one week prior to your scheduled exam. This email will include the following:

- Steps on the ASSE testing platform “QuestionMark.” These steps are also available on uanet.org;
- Copy of the certification letter from the EPA that must be posted prior to the exam;
- Proctor requirements/responsibilities;
- Challenge Sheet.

Effective since last October, we will no longer accept requests for the EPA 608 paper exam. If you are currently holding any paper exams that have not been offered, please return them to the UA Education and Training Department immediately. The revised “Conservation and Safe Handling” manual is required in class prior to administering the EPA 608 exam. Dispose of any old manuals as the information is outdated and the chance of your members passing the new exam with the old text is greatly diminished. New “Conservation Manuals” are available at the bookstore. At this time only .pdf copies will be shipped. As soon as Kelly Press finishes printing the new material, the bookstore will send you manuals to replace the purchased .pdf copies.

If you have any questions on this matter please contact Carrie King, Certification Manager at 410-269-2000 ext. 4023 or email Rich Benkowski at richb@uanet.org.
1. **Does the United Association have a position on water quality?**

In June 2018, the *UA Water Quality Program Policy Brief* was released to offer an overview of water security accompanied by a strategy to use the skillsets of all UA crafts to protect the health of North America.

2. **What is the Policy Brief?**

To protect the health of North America, the United Association researched and investigated recurring water resilience failures due to metals, chemicals, and bacteria. In response, a UA Task Force was formed, led by International Representative Kurt Steenhoek, to formulate countermeasures that every local can participate in to protect their own neighbors and families.

3. **What does the Policy Brief address?**

The Policy Brief found that contaminants that can compromise internal water quality typically fall into three main categories: (a) bacteria (e.g., Legionella); (b) metals (e.g., lead, copper, galvanized pipe), and (c) chemicals. While these problems can affect external water supply systems, research indicates that such threats are also posing increased risks to internal water systems.

4. **Which markets are most affected by water quality?**

The UA Policy Brief and Pilot Program identified four specific market sectors each facing their own unique challenges:

- **Municipal** – Water suppliers are the companies that provide water for general and domestic use. Suppliers are responsible for all customers in an agreed geographical region and customers are currently unable to switch from one water supplier to another. Your water supplier has a duty to supply you with a continuous supply of water at an adequate pressure for your daily use.

- **Commercial** – Water flow in commercial building pipes is generally slower and dependent on water usage. Minimal or no water usage can affect water quality. AIG Insurance has required their building operators to implement a water management program based on ASHRAE 188.

- **Healthcare** – June 2017, Centers for Medicare and Medicaid Services mandated hospitals, skilled nursing homes, and critical access hospitals comply with ASHRAE 188. All of these institutions have plumbing, mechanical, and fire protection piping and devices that put the occupants and workers at risk.

- **Education** – Schools at every level from K-12 to community colleges, and every university all manage piped systems at risk for chemical, bacteria, and metals. All of these institutions have plumbing, mechanical, and fire protection piping and devices that put the occupants and workers at risk.

5. **What is the CMS Mandate?**

On June 2, 2017, the Centers for Medicare and Medicaid Services (CMS) released a mandate requiring all certified Medicare and Medicaid facilities to have water management plans that meet ASHRAE industry standards to reduce the risk of Legionella. CMS expects applicable facilities to comply or risk citation for non-compliance with CMS Conditions of Participation.

6. **Why is the CMS Mandate important?**

This letter pivoted the effort of the UA pilot program. The immediate nature of the mandate caused the focus to be on the healthcare market first. For many reasons, if healthcare risks can be assessed and managed for compliance with ASHRAE 188, then the other three sectors could also be solved using the same skill sets, protocols, and documentation.

7. **What is ASHRAE 188?**

This standard provides minimum legionellosis risk management for the design, construction, commissioning, operation, maintenance, repair, replacement, and expansion of new and existing buildings and their associated water systems and components.

8. **How is ASHRAE 188 implemented in healthcare facilities?**

The Centers for Disease Control and Prevention produced a toolkit for building owners and facility managers. The CDC toolkit aims to provide an easy-to-understand interpretation of ASHRAE Standard 188 to help building owners and managers evaluate the water system and devices in their building(s) to see if they need a program, and then to develop an effective water management program if one is needed. All mechanical, fire protection, and potable water systems are required to be mapped, assessed, monitored, controlled, verified, and documented to be in compliance.

9. **How does the UA offer compliance to the healthcare industry?**

In 2018, the United Association created and launched the UA Water Quality Program. This program provides risk assessment for the piping industry. Signatory contractors and all UA crafts are certified in the fundamentals of the healthcare water quality issues.

10. **How is compliance accomplished?**

Each contractor and UA member participates in a four-hour training module followed by a voluntary ASSE 12000 examination. Additionally, each UA member attends eight hours of craft-specific training with ASSE 12000 validation.
11. What is ASSE 12000?

This standard provides general knowledge of pathogens, biohazards and infectious diseases for plumbing, piping, and mechanical systems workers, or any individual who has the potential for exposure to pathogens, biohazards, or other potentially infectious material (OPIM) with the objective of providing continuing education. Eligible individuals include any person with an interest in pathogens, biohazards, and infectious diseases.

12. What is the next step?

Right now, 22 locals have certified instructors ready to provide training to contractors, pipefitters, service technicians (both plumbing and HVACR) and sprinkler fitters. Instructor training will be offered in March at the Great Lakes Regional Training Center and in August at the Instructor Training Program.

13. Is there a pre-requisite to the instructor training?

No pre-requisite courses are required for contractor or local training. Here are the ITP courses and course descriptions:

- **4050 WQP Plumbing**: North America’s water delivery infrastructure requires major improvements or needs to be replaced. This critical need impacts all water sources, pipes, faucets, heating and cooling systems, and fire protection systems. This course will provide the participant with the skills necessary to develop and implement a water quality risk management plan for plumbing and potable water systems. The purpose of this course is to provide minimum criteria, identified by industry consensus, to ensure compliance with the referenced standards and codes. Participants will map, monitor, identify risk, evaluate control measures, and provide documentation as required by ASHRAE 188-2018. This course will also provide the training, education, and a ASSE 12061 certification for plumbers working on these systems.

- **6080 WQP Mechanical**: North America’s water delivery infrastructure requires major improvements or needs to be replaced. This critical need impacts all water sources, pipes, faucets, heating and cooling systems, and fire protection systems. This course will provide the participant with the skills necessary to develop and implement a water quality risk management plan for mechanical systems. The purpose of this course is to provide minimum criteria, identified by industry consensus, to ensure compliance with the referenced standards and codes. Participants will map, monitor, identify risk, evaluate control measures, and provide documentation as required by ASHRAE 188-2018. This course will also provide the training, education, and a ASSE 12062 certification for pipefitters and service technicians working on these systems.

- **7051 WQP Fire Protection**: North America’s water delivery infrastructure requires major improvements or needs to be replaced. This critical need impacts all water sources, pipes, faucets, heating and cooling systems, and fire protection systems. The purpose of this course is to provide minimum criteria, identified by industry consensus, to ensure compliance with the referenced standards and codes. Participants will map, monitor, identify risk, evaluate control measures, and provide documentation as required by ASHRAE 188-2018. This course will also provide the training, education, and a ASSE 12063 certification for sprinkler fitters working on these systems.

14. How do contractors receive training and certification?

Signatory contractors in good standing in your local can be invited by the business manager to attend the WQP Fundamental four-hour class. During the class, the contractor will receive an Application Handbook and be offered a certification exam to qualify for ASSE 12060.

15. What if local members are currently working in hospitals right now?

This program opens the door for the UA craftsmen to responsibly work more man-hours in order to comply with the CMS mandate for risk assessment of every piped system. For ASHRAE 188 compliance, the local members will document their activities, submit these forms to the contractor’s designated representative, who then compiles the data from all UA crafts. At that time, the healthcare facility will receive the record of mapping, monitoring, verification, and control measures implemented at their facility.
A Thank You to All
from John W. Russell, Jr., Local Union 5 Instructor

On August 16, 2018, I received the Martin P. Durkin Lifetime Achievement award. I cannot express the simultaneous feelings of honor and humbleness that I experienced when I heard my name announced for the award at the 2018 UA Instructor Training Program Apprentice graduation ceremony. I am honored that I have been recognized by my peers for a job well done for work that I truly enjoy, while also humbled that I am perceived by my fellow instructors as deserving to be included in the company of those that have received the Martin P. Durkin Award before me.

At the time of the presentation, the shock of receiving such an honor left me at a loss for words (a situation that those who know me well will find hard to believe). Although I did manage to describe a few of the tenets that I believe helped in bringing me to that moment, I had neglected to mention several people who have aided me in my career as a U.A. instructor, and I am grateful for the opportunity to thank them here.

To begin, along with Bernie Thornburg of Local 602 and Herb Fishpaw of Local 486, who I did mention when I accepted the award, I did not acknowledge several individuals within the UA, some who have received the Durkin Award themselves. I consider these individuals to have been extremely influential as mentors and colleagues to me during my 27-year career in UA training.

Most notably, George H. Bliss III guided me for many years as Assistant Director, and then Director, of the UA Training Department. George introduced the first CAD training classes at the Instructor Training Program, and he was instrumental over the years in developing what has now become our Virtual Design and Construction (VDC) program we have today. In addition, our current director of training, Chris Haslinger, has also been very influential to me by recognizing the huge effect that technology has produced on the way that we perform our work, and the critical need for the UA to embrace this technology to maintain our cutting-edge performance. Chris has provided us with the resources to grow our VDC program exponentially, and placed it on firm footing to continue growing and evolving into the future.

Of course, how would any ITP and UA instructor be successful without the help of Cathy Merkel? Cathy has been both a friend and mentor in the development and structure of CAD and VDC courses since the introduction of the CAD program at the Instructor Training Program. Her insight into tailoring the VDC curriculum to meet the needs of student participation over the years was critical to the continuation of the program during times of lean enrollment. Her openness to suggestion and enthusiasm for new directions has been inspiring, and our collaboration has been a pleasure.

I would also like to acknowledge and thank the members of the UA VDC training group. This group of UA VDC instructors was formed several years ago by Chris Haslinger and is currently coordinated by training specialist Ken Schneider. The group has succeeded in validating BIM and VDC processes as critical work to be performed by UA Journeyworkers and Apprentices. We are a very collaborative group and we have learned much from one another. I know that my knowledge of VDC processes and possibilities has increased greatly as a member of this group. Thanks to Rich “Zip” Zimmer, Erik Lambrecht, Stephan Schnell, Eric Posey, Pat Ramirez, Mike Zivanovic and Training Specialist Ken Schneider.

Finally, were it not for the support of the members and management of Plumbers Local 5, Washington, D.C., I would not have had an opportunity to instruct in CAD, BIM, or VDC at all. Former apprentice coordinator James Spenser and current coordinator Tim Haley have been very supportive of CAD / BIM instruction for many years, as well as current Business Agent, James Killeen.

A special thanks to Ken Schneider for suggesting this article as an opportunity to express my thoughts as a recipient of the Durkin award. We all journey with others in our endeavors, and I can now leave behind those feelings of having left much unsaid on August 16th, 2018.