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# We're Listening To You


As I step into the seat as the president of this organization, I reflect upon the great opportunities the FDLA has afforded us. Over the years, we have seen other dental laboratory organizations folding up, but we can proudly say that the FDLA is still an organization we can turn to for education and support!

One of the biggest endeavors the FDLA undertakes every year is the annual Southern States Symposium & Expo. The balance of the symposium has been a challenge for the board. The combination of education, timing, location, value, access to the Expo hall and finding great inspirational speakers is a true juggling act. Some years, we celebrated a home run, other years it's been like a Ray's game!

After a couple of innings without a run, we realized the symposium needed an infusion of inspiration to keep our members attending. We read the comments from past symposium attendees and compared them to what else we heard out in the field. One topic that needed attention was being forgotten. As many members are business owners, the symposium needed to add more business-related courses to help us make healthy business decisions.

*I love what I do, and I love the people that I do it with.*

As technicians, we also need valuable education in the technical areas. We recognized the need is about all the disciplines of the laboratory. It's not all just about digital. We make partial dentures, complete dentures and some of us still make PFMs. And now we have the fixed detachable. Any and all of those can involve implants, so that too needed attention. Our tools for business had changed as well, the new and the traditional needed to be combined.

With all of this said, I love what I do, and I love the people that I do it with. I hope you all have the same feelings about our business and if you do, I encourage you to get more involved. I have learned much by involving myself as a board member and enjoy the feeling of contributing to the direction of our industry. After all, we are building our legacy, and I want to leave it in prosperity.

I welcome all to join us at one of our district workshops that we have planned throughout the year. You can find the information in *focus* magazine (which is now available online) or email membership@fdla.net and be sure to like us on our Facebook page, https://www.facebook.com/floridadentallaboratoryassociation.

**Tim Stevenson, CDT**
FDLA president

## FDLA Mission

Serving Florida's dental technology professionals as a valued part of the dental team enhancing oral health care.

## FDLA Vision

Advancing the individual and collective success of Florida's dental technology professionals in a changing environment.

## Values Statement

FDLA's board of directors and professional staff are guided by these principles:

- Integrity
- Leadership
- Recognition
- Safety
- Acceptance
- Innovation

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## focus

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Published quarterly by the Florida Dental Laboratory Association. The FDLA is not engaged in legal, accounting, financial or other professional counseling and readers are cautioned to contact their professional advisors for advice. FDLA simply gathers information from various sources to keep the membership informed.

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# The ONE MATERIAL *Challenge*

By Dan Krammer, Fuchstal, Germany

## *Three teams seek to solve a real case in Vienna*

Recently, nineteen dental technicians from all over the world and one dentist from the Czech Republic convened at the International Center of Dental Education (ICDE) in Vienna. They were invited by Ivoclar Vivadent to take part in a very special educational session, where they were given the opportunity to compare their expertise with other seasoned dental professionals. The title of the challenge was One Aim, Three Solutions and the material they would be using was IPS e.max.

Dan Krammer

At this unusual event, twenty participants were asked to treat a real patient by using three different treatment approaches. At the end of the session, the patient had to decide which type of restoration she preferred: the IPS e.max® CAD restoration made with a chairside method and completed by the dentist; a conventional CAD/CAM-fabricated restoration; or a restoration made of IPS e.max Press.

The attending dentist and representative of the chairside approach, Dr. Petr Hajný looked like he was going to break out into a sweat once he fully understood the implications of this challenge. The contenders were not to be underestimated. His preliminary work and the needs of his patient would set the standard for his fellow contestants (**Figures 2 to 3g**). In fact, the task turned out to be more complex than was initially anticipated.

A wide array of fabrication options was available. The participants were able to choose between IPS e.max CAD (lithium disilicate); highly translucent IPS e.max ZirCAD (zirconium oxide) either in monolithic or anatomically reduced form, ground or milled; or IPS e.max Press full-contour or anatomically reduced pressed and subsequently stained/veneered restorations; or a combination of all these versions. The choice was extensive

**FIGURE 1** — *Before the case is presented, Hannes Meischl, technical trainer of the ICDE in Vienna, describes the dental laboratory procedure and the available materials and equipment.*


**FIGURE 2** — *Dr. Petr Hajný, a dentist and dental technician who hails from the Czech Republic, describes the case and its challenges. The task is to restore the patient's teeth 13 to 23 with all-ceramic crowns.*




because of the exceptional versatility of the all-ceramic product portfolio of Ivoclar Vivadent.

For those of you who find your head spinning at the thought of all these possibilities, you will be relieved to know that the solution actually turned out to be quite simple. This contest offered a number of possibilities for comparing different methods, such as the CAD/CAM and the conventional fabrication techniques, and analyzing them according to a number of critical aspects. Nevertheless, the patient would be the deciding factor in this challenge. She would be the one who would make the final decision, irrespective of whether the restoration was fabricated chairside, stained, veneered or fabricated with the conventional or CAD/CAM technique.

Which group would get the job done first? The conventional or the CAD/CAM representatives? The dental technicians or the dentist? And at what esthetic price?

All these issues would be addressed and the debates over many different matters resolved. Could the simplest restoration perhaps be the most attractive one? How important is the number of powders and colors that are used? What is the significance of the shape and surface structure of the restoration for the overall esthetics? How important are listening skills to find out what the patient really wants?

In any case, the event offered the participants a wonderful opportunity to find out all the answers to these questions and more from the most important person in this case: that is, the patient.



**FIGURES 3A TO 3G** — *(below and right) Dr. Hajný shows photos of the preoperative situation. He highlights the esthetic failings of the old restorations on the central incisors. To enhance the esthetic appearance of the new restoration, the patient agrees to have teeth 12 and 13 and teeth 22 and 23 included in the restorative treatment strategy. The three groups – conventional laboratory, CAD/CAM laboratory and CAD/CAM chairside – are allocated a specific time in which to fabricate the all-ceramic restorations for teeth 13 to 23. The old crowns are removed from teeth 11 and 21. Tooth 11 is shown to have been restored with a metal root post in the past. Dr. Hajný masks the post with opaquer to adjust the shade.*


**FIGURE 4** — *(above) The materials portfolio from Ivoclar Vivadent is immense. Therefore, the selection and combination possibilities are extensive. While this stage is easier for the conventional group since they are using IPS e.max Press and the associated ingots, the CAD/CAM team should also be thinking about using monolithic and individually characterized IPS e.max ZirCAD zirconium oxide restorations.*

**FIGURE 5** — *(above) Ready, steady, go. At ten o'clock sharp, the participants are allowed to see the models of the case. These include a study model of the provisionally restored upper jaw and a silicone matrix, a sawcut model of the prepared upper jaw as well as a model of the lower jaw.*

**FIGURE 6** — *(above) The CAD/CAM laboratory group has selected the digitalized situation and generated the case in the system. In other words, the teeth to be restored and the restorations have been defined in the software. The picture shows Davor Markovic studying the case.*

**FIGURE 7** — *(above) The dental technicians provide the photographer with a lot of very interesting material. The dies are prepared for the creation of the restorations, and the silicone matrices have been adjusted accordingly.*

**FIGURE 8** — *(above) The patient is prepared for the digital capturing of the intraoral data in the practice facilities of the ICDE in Vienna. Hajný, the dentist, and Vjekoslav Budimir, the dental technician, prefer to pursue a digital approach. As a result, scans are conducted with two different systems.*

**FIGURE 9** — *(left) Hajný and his assistant scan the patient's jaw with the CEREC Omnicam (Dentsply Sirona), an intraoral dental scanner which, like the Trios machines (3Shape), does not use powder. He takes advantage of chairside workflows to design the crowns and mill them from IPS e.max CAD MT A1.*


**FIGURE 10** — *(above) CAM software of the Wieland Zenotec select CAD/CAM system with the IPS e.max block in the block holder.*

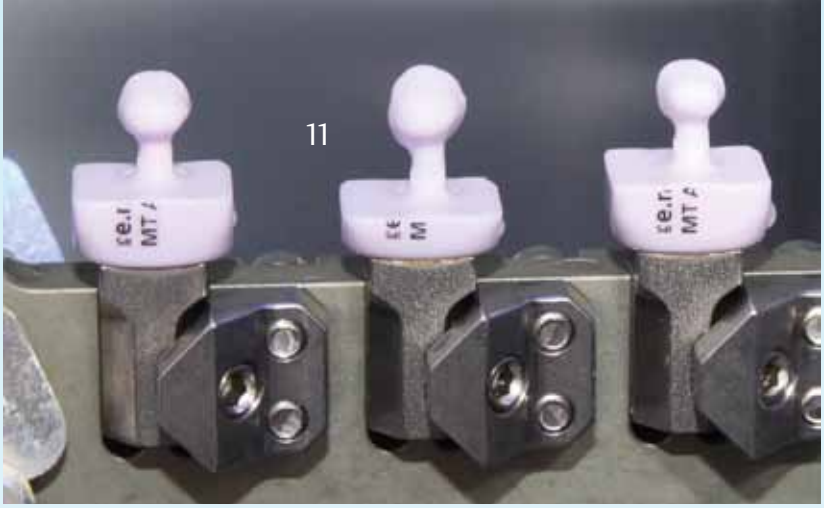



**FIGURE 11** — *(left) Completed milled crown made of IPS e.max CAD MT blocks in the CAD/CAM milling machine.*


**FIGURE 12** — *(above) Busy contestants in the training laboratory of the ICDE in Vienna. The CAD/CAM group in the front and the conventionally working group at the back.*


**FIGURE 13** — *(above) There's also time to have some fun. The contestants from the different teams and countries get on very well with each other.*



**FIGURES 14 TO 17** — *(left and below) The modeled crowns, reduced crowns, and frameworks are conventionally invested, placed in the pre-heating furnace, pressed, divested and then completed. The participants are well-versed in this technique and achieve the desired results in no time at all.*





**FIGURE 18** — *(above) "Look, I'm a human milling machine!" VelimirŽuji´c (right) jokes around with Vinko Iljadica and Alen Ali´c (left).*

**FIGURE 19 AND 20** — *(left) Manual finishing techniques: VelimirŽuji´c sprinkles dentin powder on an IPS e.max Press framework that has been coated with IPS Ivocolor® Mixing Liquid all round. In the wash firing cycle, the bond is reinforced and produces a sound base for the subsequent ceramic layers.*

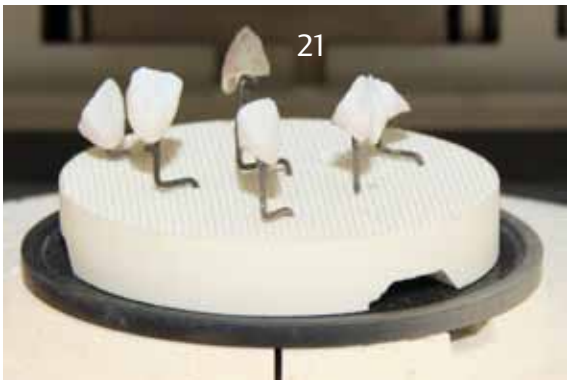
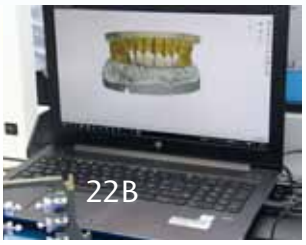



**FIGURE 21** — *(right) Irrespective of whether a conventionally or CAD/CAM-fabricated framework is used, these types of restorations, in contrast to monolithic ones, have to be manually layered and fired multiple times.*

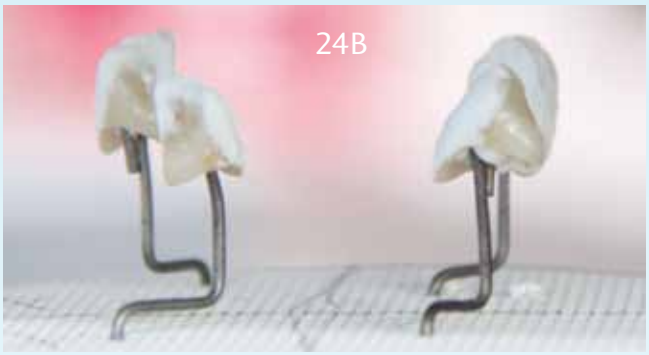

**FIGURES 22A AND 22B** — *(above) From the computer to the hand. Some of the technicians of the CAD/CAM group decided to choose the monolithic route. Nevertheless, they are doubtful about being able to outcompete the manual group. They would have to wait until the end to find out if their doubts were justified.*


**FIGURE 23** — *(above) Hajný adds fine surface details to his milled lithium disilicate crowns before he finalizes them in a modified crystallization and glaze firing cycle. His chosen workflow makes him the fastest contestant and leaves him with enough time to take care of other business.*


**FIGURE 25** — *(above) The contestants in the conventional group brought out the best in the IPS e.max materials. Here, one of the participants builds up the incisors to full contour on IPS e.max Press MO frameworks.*


**FIGURE 27** — *(above) Checking the length and alignment of the all-ceramic crowns in the articulator. The marks on the wax-up serve as a guide. It's difficult to believe that all these steps can be accommodated by a machine.*


**FIGURE 28** — *(left) Analog version of the try-in. A good first impression was obtained by just fooling around.*


**FIGURES 24A AND 24B** — *(above) The press technique is also highly efficient when the restorations are pressed to full-contour, and then minimal layers are applied to add fine details. Since only a minimum amount of layering ceramic is applied, there is hardly any shrinkage, and the results are highly predictable.*


**FIGURE 26** — *(above) Technical talk. Three members of the CAD/CAM group visit a colleague from the conventional group for a chat.*



**FIGURES 29 AND 30** — *(above and right) Ondřej Adam hard at work. To faithfully recreate the translucent edge of the lower front teeth in the upper jaw, he completely veneers the upper incisors. The result after the first firing cycle is shown in the picture.*




**FIGURES 31 TO 36** — *Not to worry, the members of the CAD/CAM group aren't spending all their time staring at their computer monitors. They're also having fun and taking care of some steps manually. In the end, it's not the method that counts, but the result, which has to look as natural as possible.*






**FIGURE 37** — *(above) Mission accomplished: Helmut Berger has incorporated his virtual creation into the picture of the patient to check the length and alignment of the teeth.*

**FIGURE 38** — *(right) The day has come to an end, and the excitement is palpable. Due to the large number of entries, the panel of experts including Christian Smaha (center), a recognized Viennese dental technician, is consulted to help with the shortlisting process.*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**FIGURES 39 - 41**

## *And the winner is …*

*the Slovakian dental technician Martin Ebringer from the conventional fabrication group. The patient immediately fell in love with his crowns. They are sparingly layered. Martin Ebringer focused on imitating the surface characteristics and the tooth shape. When he was asked about how he had managed to produce such a fantastic result, he simply said that he had talked with the patient and tried to create what she wanted. In other words, very bright, monochromatic teeth. Consequently, he tried to impart the teeth with a natural appearance by incorporating morphological details.*


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# Making Sense of DIFFERENT ZIRCONIA MATERIALS

By Alexander Wünsche, CDT

In the past, our industry was nearly flooded by an incredible amount of different zirconia materials to use for dental restorations with different indications requiring different materials. Today, modern zirconia can satisfy a wide range of different indications. From single-crown restorations up to full-arch implant reconstructions to highly-esthetic cases to functional rehabilitations, the list is endless.

## Differentiating Zirconia Materials

To make it as simple as possible, we are most often working with three different zirconia materials.

1. **Low-Translucent Zirconia —** Our longest available zirconia, which allows a flexural strength of 1,200MpA to 1,500MpA. It's mainly used for titanium-based abutments and frameworks for porcelain layering, especially if discolorations have to get masked.
2. **Translucent Zirconia —** The most used zirconia on the market. Flexural strength of 1,100MpA to 1,300MpA, we use this zirconia for almost all kinds of restorations — from single full-contour posterior crowns up to full-mouth reconstructions. This material delivers great esthetic capabilities with exceptional strength. The opacity is good enough to mask most discolorations, but it is still translucent for a more natural look if supported with the right pre-sinter color technique.

*Continued on page 16*

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– Anton Woolf, CEO of Argen

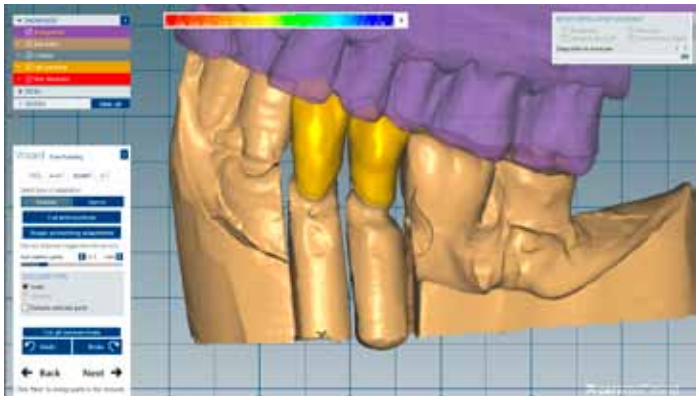
ARGEN

*Tech Tip, continued from page 14*

3. **High-Translucent Zirconia —** This one is the trendsetter in the zirconia family, but also the most tricky one to work with. Flexural strength is between 550MpA to 800MpA and its translucency is achieved by a cubical network build. The cubical build allows light to get through easier. As a result, it is more translucent. The disadvantage is, that the build is also not very positive for strength. That results in almost 50 percent loss in flexural strength, so its use for restorations is limited.

## Evaluating the Case for the Correct Zirconia

At first, the restoration type, size and esthetic expectations are critical. For full-arch bridges, we have two types available—the low translucent and translucent one. The high-translucent zirconia is not available for this restoration type because the flexural strength does not allow more than three-unit bridges in the posterior and four-unit bridges in the anterior region.



So let's evaluate the low versus the translucent zirconia. If a fully layered restoration is the type we are looking for, we certainly can use the low-translucent zirconia. If we combine full contour shapes with cutbacks for layering, we have to use the translucent zirconia just for esthetic purpose. I use translucent zirconia for almost all layered restorations so I can achieve a more natural and aesthetic look to my restorations. The low-translucent zirconia is very difficult to mask with layered porcelain, especially if the thickness is an issue.

If the case is a small restoration, or a big reconstruction divided into single units and small bridges, I can use the high-translucent zirconia. As long as the underneath color is not very dark, or metal posts have not been placed. I like to use this material more and more since my layer technique has changed in the last years more to a micro-layering. This allows me to design almost full-contour restorations and layer minimal effects if needed or I can go with full-contour and enjoy the translucent effect of it, so I can concentrate on a nice stain and glaze finish.

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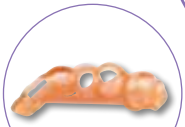

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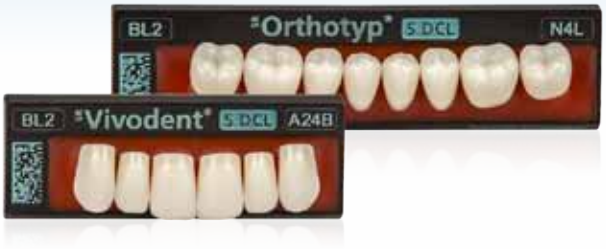



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# Southern States Symposium & Expo A Success

Southern States SYMPOSIUM & EXPO
*presented by* **FDLA**

Approximately 800 dental laboratory technicians, dentists, dental team members, manufacturers and suppliers attended the 2018 Southern States Symposium & Expo in Orlando. They had access to unparalleled continuing education, numerous networking opportunities and a tradeshow floor filled with innovative products used in stellar technical demonstrations. A huge thank you to everyone who attended and the many who helped make the symposium and expo a success. We can't wait to see you all again next year!

*Left: Lenny Herrera, CDT, FDLA President (right) with Outstanding Students Svetlana Kirsanova and Sabahat Mahmood from McFatter Technical College*

*Right: Tim Stevenson, CDT, incoming FDLA president (right) presents 2017-2018 FDLA President Lenny Herrera, CDT with the gavel plaque for his service*

*Members enjoying the convention*

*Above: Expo Hall Ribbon Cutting*

*Above: Enjoying the Friday Night Reception*

*Above: Friday Night Reception*

*Above: Expo Hall buzz*


*Above: 2018 Best of Show - XPdent Corp*


*Above: Expo Hall buzz*

*Above: Expo Hall buzz*

*Above: Hands-on workshop*

*Above: Friday Keynote Presentation*

*You can find more photos from the 2018 Southern States Symposium & Expo on pages 30 - 32 of this issue.*

By M. Reed Cone, DMD, MS, CDT, FACP


# Digital Dental Photography:

## Techniques and Tips for the Laboratory Technician

At first glance, the world of digital dental photography may seem overwhelming and intimidating, especially for those individuals without much experience behind the camera. Fortunately, all that is necessary to begin making excellent photographs are a few pieces of inexpensive equipment, a handful of core skills, a little practice and just a bit of imagination.

### Photographic Equipment

#### Camera Body

The first piece of equipment that needs to be acquired is the camera body. There are several brands to choose from, and the most popular are Canon, Nikon, and Sony. The company which makes the camera is not very important since most contemporary digital cameras today are capable of producing high-quality images. The type of camera matters more, and it is important to spend the extra money on a DSLR/system camera rather than a point and shoot model or a prosumer/bridge camera with a zoom lens permanently fixed in place (**Figure 1**). A DSLR camera will provide greater flexibility and control over the settings as well as allow for a wider variety of lenses and flash accessories to be attached. To achieve the highest resolution possible, a camera body with a full-frame sensor should be selected for dental photography. Not only is the rendering of color exceptionally accurate, but the final image on a full-frame sensor camera does not suffer from the cropping that occurs with the diminutive APS-C sensor format cameras (**Figure 2**).

**Figure 1** *(above) Camera Types: Introductory level point and shoot, advanced beginner level prosumer/bridge, and professional level system/DSLR.*


**Figures 2a - 2b** *Same subject photographed with an APS-C cropped sensor versus full-frame sensor. The cropped-sensor displays clipping of the image and less vibrant colors than the full-frame sensor. (From left to right: APS-C cropped sensor and full-frame sensor)*

## Lenses

Camera lenses, or glass, are undoubtedly the most expensive camera equipment required for digital dental photography. Most DSLRs are purchased as a package deal and include a standard zoom kit lens. These lenses are not capable of revealing the infinitesimal nuances of the many small dental laboratory objects that will be photographed, and for this reason, a dedicated macro lens is a must in the photographic arsenal of every technician. A true macro lens can focus at extremely close distances to the subject, thus allowing for the acquisition of exquisite image detail (**Figure 3**). A macro lens in the range of 90mm-105mm is recommended, and as a bonus, the 90mm-105mm focal length allows these lenses to excel at portrait photographs (**Figure 4**). It should be noted that not all lenses are created equal. For example, Canon has two different 100mm macro lenses (**Figure 5**). However, the redline L-series or luxury lens will cost roughly 25 percent more than the standard lens. The image quality from the luxury lenses is indeed sharper, but may not justify the increased cost for use in a dental setting. A wide-angle lens in the range of 10mm-22mm is quite useful and recommended in the laboratory for capturing the broader context throughout the documentation of a specific patient case or technique (**Figure 6**).

## External Flash

The key to every great photograph is the ability to control and manipulate the light. One of the benefits of a system camera is the ability to add an external flash to the hot shoe mount on top of the camera body. The saying less is more is a good general rule to follow when adding a light source to dental photographs. Too much light on the subject results in blow-out and overexposure of the image, while not enough light results in a dark and underexposed image (**Figure 7**).

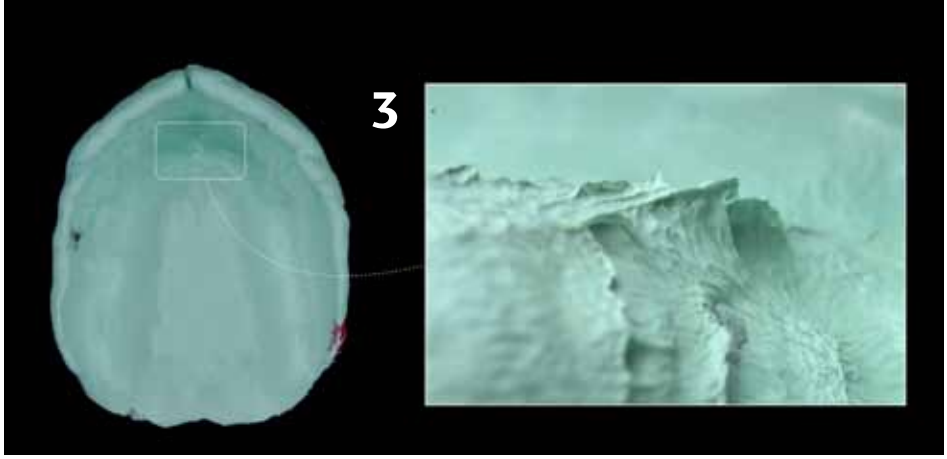



**Figure 3**
*Standard view of a maxillary denture final impression with polysulfide. Inset shows the amount of detail that can be achieved at a close focusing distance with a dedicated macro lens. (From left to right: standard kit lens image and highly-detailed macro image)*

**Figure 4**
*A macro lens in the range of 90mm-105mm also doubles as an excellent lens for portrait and profile photographs.*


**Figure 5**
*Many companies make lenses with identical focal lengths, however, the build quality and the clarity of the optics varies.*


**Figure 6**
*A wide-angle lens has the ability to place the subject within a broader context.*


**Figure 7**
*Too much light on the subject results in over-exposure and lost information (white areas). Not enough light on the subject results in under-exposure (dark, shadowy areas). Having the correct lighting set-up allows for proper contrast and image detail. (From left to right: over exposed, under exposed, correctly exposed)*

A problem typically encountered when taking intraoral photographs of patients in the laboratory is the harsh glare created by the reflection of the flash against the glossy enamel surfaces. An easy way to soften the light source in these situations is to place standard white sheets of printer paper over the flash heads (**Figure 8**). To achieve an incredibly wet and silky look on materials, such as acrylic and ceramic, an inexpensive ring diffuser over a Speedlite flash can be utilized. When small objects, such as crowns, are photographed with this lighting set-up on a standard hand-held mirror, the result is an image containing an inky-black background and a beautiful and illustrious reflection (**Figure 9, Figure 10**).


**Figure 8**
*White paper placed over the external flash heads creates a soft and diffuse look. The photo above (top right) demonstrates the harsh glare of a flash. The photo below (bottom right) demonstrates the effect of flash diffusers on the highly reflective surface of the dentition.*

**Figure 9**
*A Speedlite, flash ring diffuser, and a hand-held mirror are an inexpensive way to create stunning images.*


**Figure 10**
*Dental materials such as ceramic, metal, and acrylic appear wet and silky when the harsh glare of an external flash has been reduced with a ring-flash diffuser. A hand-held mirror creates a beautiful natural reflection of each object.*


# Core Camera Skills

Anyone can purchase expensive photographic equipment, however, without a basic understanding of the foundational camera settings that control the exposure of the final image, the investment will be time and money wasted.

## Camera Settings

There are essentially three main settings on a DSLR that will need to be understood and taken into consideration by the dental technician:

1. Aperture (f-stop)
2. Shutter speed
3. ISO

These three settings are frequently referred to as the exposure triangle, and they form the foundational basis for everything in dental photography.

## Aperture

The aperture is simply the opening inside a lens, and it controls the amount of light that enters through the lens and passes into the camera. The size of the aperture opening is represented by a value called the f-stop (e.g., f/1.4, f/16, f/32, etc.). The smaller the number, the larger the aperture, and hence, the more light will be allowed to enter the camera. Likewise, the larger the number, the smaller the aperture becomes, and, therefore, a reduction in light entering the camera results. Smaller f-stop numbers also tend to have a shallower depth of field. This means that only a limited amount of the subject will be in focus, while the rest will be blurred out. Sometimes this look has a very desirable effect and can create an artistic feel to the image. However, when the maximum detail is required, a larger f-stop number will be necessary to keep more of the subject in focus (**Figure 11**). A good starting place for many dental projects is in the range of f/16- f/22.

## Shutter Speed

Inside the body of every DSLR camera is a small mechanical curtain, called a shutter. The shutter opens and closes at various speeds, measured in seconds, and acts like a faucet valve controlling the quantity of light reaching the camera sensor. A relatively fast shutter speed, measured in fractions of seconds (e.g., 1/4000th), opens and closes the curtain at such a rapid rate that very little light can reach the sensor. Conversely, a slow shutter speed (e.g., two seconds), allows far more light to reach the sensor. The aperture and shutter speed work together and should ideally balance each other out. Faster shutter speeds, which let in less light to the camera may be more appropriate to use with wide open apertures (e.g., f/1.4), which allow a flood of light into the camera, and vice-versa. For most applications in the dental laboratory, a shutter speed between 100-200th/sec is ideal. At rates slower than this, there is a risk of blurring the final image due to slight shaky hand movements while holding the camera body. At rates faster than this, it will be difficult for the sensor to absorb enough light and the final image will often be too dark.

## ISO

ISO is not an acronym, but rather a shorthand notation for the Greek word, ISOS, which means equal. The ISO value represents the sensitivity of the camera sensor to light. The larger the number, the more sensitive to light the sensor becomes. Increasing the ISO value in a dimly lit laboratory setting, for example, will dramatically enable a greater visualization of the work environment and the subject matter. This method of enhancement does have an inherent shortcoming, however. As the ISO value increases, so does the addition of unwanted noise or grain to the image (**Figure 12**). It is recommended to keep the ISO as close to 100 as possible to maintain a clear and sharp image. However, experimentation with higher values and in combination with simultaneous adjustments to the aperture size and shutter speed are also encouraged.

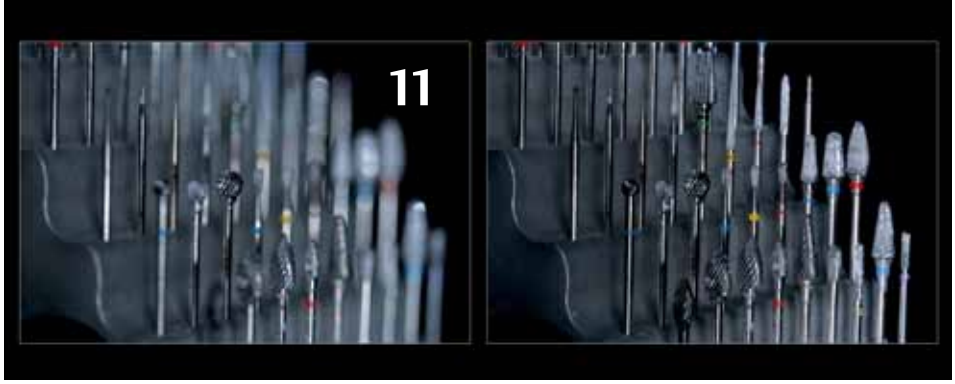


**Figure 11**
*Smaller aperture numbers result in an isolated area of focus and a blurry background, while larger aperture numbers provide greater depth of field and focus throughout the entire image. The ISO must also be increased with larger aperture numbers because less light is reaching the sensor when the aperture narrows. (From left to right: small aperture, f/2.8, ISO 100, and large aperture, f/32, ISO 640)*

**Figure 12.**
*In dimly lit environments, the ISO setting can be increased to make the sensor more sensitive to any trace amounts of light that may be present. The resulting image will be brighter, however, at very high ISO values, the photograph will show a grainy artifact. (From left to right: ISO 100 and ISO 25,600)*

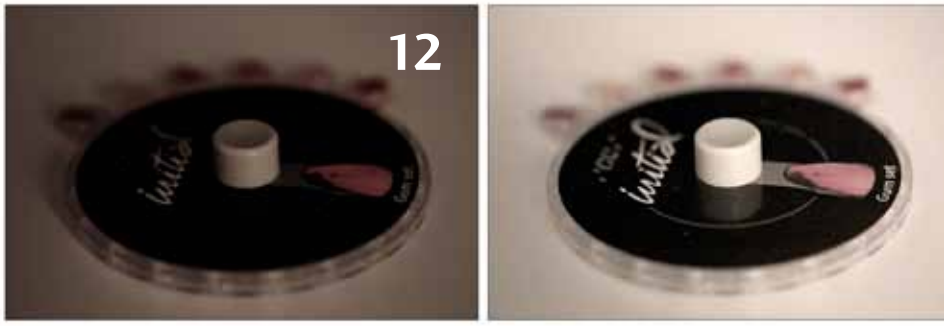


**Figure 13**
*The use of creative angles, subject framing, and lighting are all a part of producing great photographic composition. These images achieve their final touch-up during the post-processing phase in photo editing software.*


## Composition

Once the fundamental photography skills are in place, the next step is to learn composition. There are many technically sound photographers in the dental community, what is frequently lacking, however, is the creative ability to reveal the magic in the mundane. Great composition is a combination of both technical mastery and imaginative vision—and it takes practice. Finding a creative angle to take the photograph, framing the subject just right in the viewfinder, adjusting the lighting, and fine-tuning the camera settings all create the potential for extraordinary images (**Figure 13**).

# Final Touches

## Editing Software

Right out of the camera, even the best dental photographers tweak their images, and no photograph would be complete without a few modifications to the size (cropping), orientation (rotation) and adjustments to the various color parameters (exposure, contrast, saturation). Fortunately, most computers come standard with basic photo editing tools built into their slideshow presentation software (e.g., PowerPoint for PCs, and Keynote for Apple computers). Editing photos in this way is recommended based on ease of use and program availability, compared to more robust and advanced for sale image editing software, such as Adobe Photoshop. Once the image has been dragged and dropped into the slide show editing software (**Figure 14**), any unnecessary background distractions should be cropped out. Next, the image should be correctly rotated and aligned. Finally, test out the various global image adjustments (**Figure 15**) and make a note of the after effects, recognizing that increasing the contrast will create a darker background, increasing the exposure will brighten light gray areas into a uniform white color, and reducing the saturation to zero will produce a black and white image.

The equipment needed to obtain phenomenal dental laboratory photographs is minimal and inexpensive, and the skills necessary to learn this craft are few and straightforward. The camera lens further provides a remarkable outlet for the technician to tell a story and document a case from their unique point of view. For these reasons, the mastery of digital dental photography is a skill that every dental laboratory technician would be wise to endeavor towards.


**Figure 14**
*Original, unedited photograph imported into Apple Keynote. Cropping and resizing of the image are completed to remove as much unnecessary background distractions as possible.*


**Figure 15**
*Following image adjustments (levels, exposure, contrast, saturation, highlights, and temperature), the final image is ready for publication to social media, webpage, journal, or company advertisement.*

# About the Author

Dr. Cone is a graduate of Tufts University School of Dental Medicine, and completed a three-year prosthodontic residency program while serving in the United States Army before being honorably discharged as a field grade officer in the rank of major. Cone's current role revolves around his position as a clinician and founder of Nuance Dental Specialists. He is one of only three prosthodontists in the state to have achieved board certification and diplomate status within his specialty. Also of note, he is one of only two prosthodontists in the entirety of New England to have obtained additional qualifications as a Certified Dental Technician. As an active member of the local dental community in Portland, Maine, he continuously provides pro-bono treatment for Maine residents in need and takes time out from his private practice at Nuance to teach prosthodontics several days a week at the University of New England College of Dental Medicine. At the state level, Cone holds a seat on the Maine Dental Association's Council for Government Relations, and is frequently invited to present his work at study clubs and dental meetings. Nationally, Cone partakes as a guest speaker at several of the top academic institutions, with recent venues including Harvard, Iowa, Stony Brook, San Francisco, Buffalo, and Maryland. Additionally, he serves as a moderator and lecturer at numerous dental conferences, including the American Dental Association, the American College of Prosthodontists, the American Prosthodontic Society and the American Academy of Cosmetic Dentistry.

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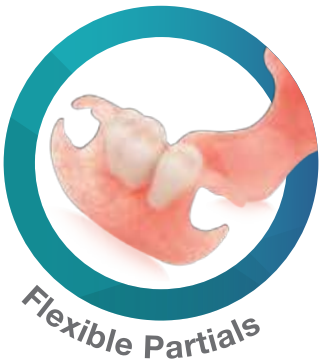


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## FDLA Supports the Foundation for Dental Laboratory Technology

At the 2018 Southern States Symposium & Expo, FDLA joined together with the Foundation for Dental Laboratory Technology (FDLT) to increase awareness of the opportunities for enhancing education in the industry. Members and vendors were encouraged to donate to the FDLT. Also, there was a Wine/Liquor Toss in the expo hall to help raise funds. A check was presented to the Foundation for Dental Laboratory Technology at the conclusion of the event.

*From left to right: Lenny Herrera, CDT, FDLA Past President and Tim Stevenson, CDT, FDLA President*

## FDLA South Florida Workshop: Esthetic Realities

*(Above)* The March hands-on workshop held in Miami was a great success. We would like to thank VITA for sponsoring the session and Peter Pizzi, CDT, MDT, FNGS, for his presentation, Esthetic Realities for Today and Tomorrow: Photography, Color Matching, Materials and Ceramic Layering. Sepcial thanks to Zahntechnique for hosting the program.

## FDLA West Coast Workshop: Making LiSi Perform

*(Above)* The April hands-on workshop in St. Petersburg was given to a full house. We would like to thank GC America Inc. for sponsoring the session and 4Points Dental Designs for hosting the program. Special thanks to John Wesley McMillan who presented, Making LiSi Perform for Your Lab Situation: From High End Aesthetics to Efficiency and Predictable Results.

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Darrel H. Kendall, CDT

**50 Years of Service**
John Porter, CDT

*Above: Robert Savage, Jr., NADL President (left) and Denise Burris, CDT, NBC Chair (right) present a 45 year CDT milestone to Darrel Kendall, CDT*

*Above: Robert Savage, Jr., NADL President (left) and Denise Burris, CDT, NBC Chair (right) present 25 year CDT milestones to Derek Pawlak, TE, CDT and Randolf Cortada, CDT*

*Above: Robert Savage, Jr., NADL President (left) and Denise Burris, CDT, NBC Chair (right) present 35 year CDT milestones to Roy Miner, CDT and Bernardo Sosa, CDT*

## Happy Retirement to James T. Ellison, CDT

In 1966, James T. Ellison, CDT, started working at Thompson Dental Lab at the young age of fifteen. He continued in the lab business, earning the title of Certified Dental Technician 44 years ago and has experience in all phases of dental technology. He has been instrumental in the dental laboratory industry and we wish him well during his retirement.

*Left: Gordon Craig, President and CEO of Sterngold (right) presented James T. Ellison, CDT with a plaque for his retirement. Also pictured is FDLA President, Lenny Herrera, CDT.*

# 2018-2019 FDLA Board of Directors

*2018 – 2019 FDLA Board of Directors installation ceremony*

*Read more about your new board members on page 30 of this issue.*

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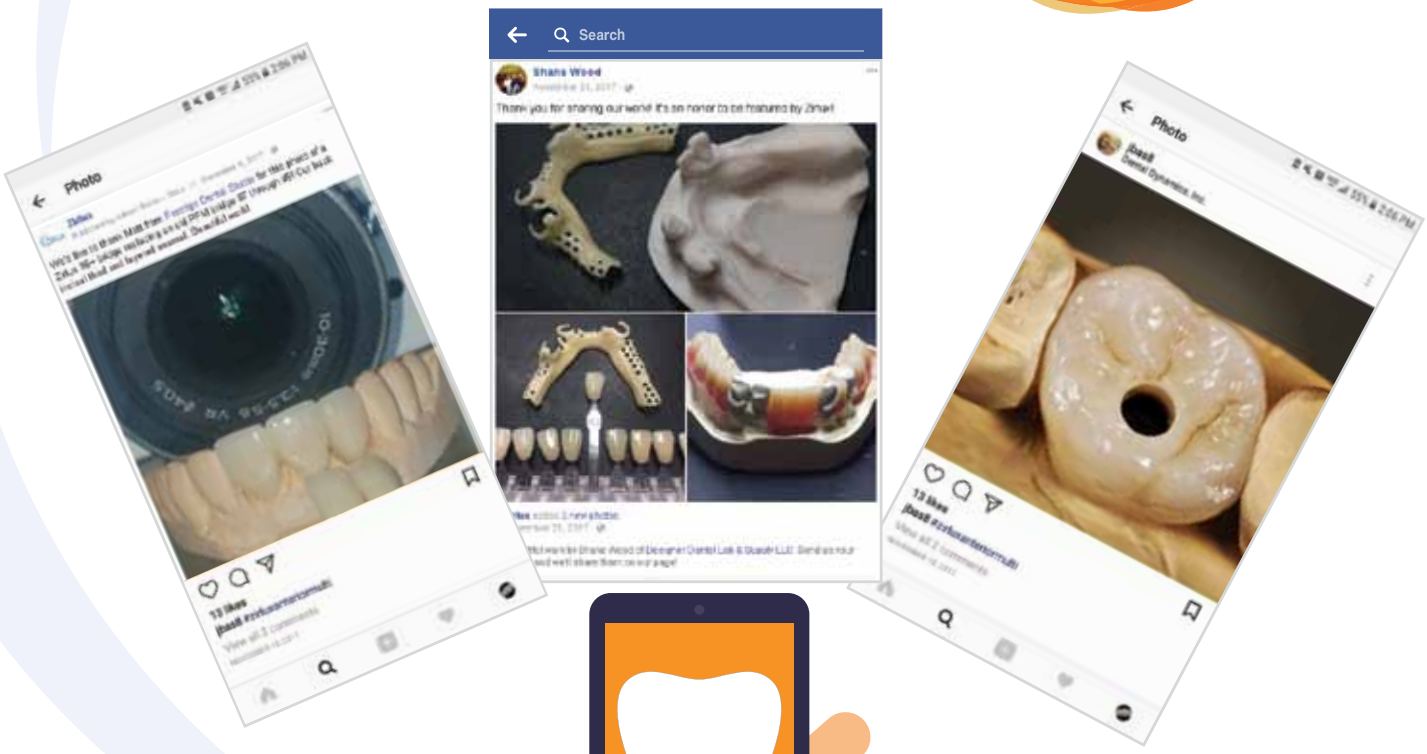


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# Meet Your New Board Members

We're excited to introduce you to the newest members of the FDLA Board of Directors, who were sworn in during the Southern States Symposium & Expo. This year, we welcome Samantha Drake, CDT, from Sorriso Dental Studio, Jenny Peterson from Peterson Dental Laboratory, and James Wells, CDT, from Inman Orthodontic Laboratories, Inc., as board members and Lynette Wiggins with Benco Dental as the supplier representative.

*Drake*

*Peterson*

*Wells*

*Wiggins*

Drake owns Sorriso Dental Studio in Sarasota. The dental lab specializes in all ceramic options and utilizes digital technology to produce exceptional restorations. Wiggins is a territory representative for Benco Dental. She graduated from Santa Fe College in Gainesville and has been with Benco since 2016. Recently, we sat down with Peterson and Wells to find out a little bit more about them and what they hope to accomplish on the board to promote the lab industry.

Peterson is the accounting controller at Peterson Dental Lab, a full service laboratory in Delray Beach, where she manages the company's accounting department and human resources.

## What do you think is the most valuable part of being an FDLA member?

Collaborating with likeminded and passionate people who are reaching for the same goal to lead and grow the dental industry in the areas of innovation, safety, recognition and leadership.

## What do you hope to accomplish as an FDLA board member during your tenure?

To provide good judgment and foresight about future challenges and opportunities the dental industry may face from a financial and human resource perspective.

James Wells, CDT began his career in orthodontics in 2003 and earned his CDT in January 2010. He is a manager at Inman Orthodontic laboratory in Coral Springs.

## What do you think is the most valuable part of being an FDLA member?

The most valuable part of being a FDLA member to me is that it keeps me involved in the industry as a whole. Every lab owner/manager knows that it is very easy to get caught up in the daily hustle of this business, where often the day has a surprise for you that is going to control a good part of your time. This causes us to get tunnel vision only focusing on our immediate responsibilities and forgetting that this profession is much broader than what we are seeing on a daily basis.

## What do you hope to accomplish as an FDLA board member during your tenure?

As an FDLA board member, my goal is to contribute towards the continual education of all technicians, certified or not. I believe that every single appliance or restoration that is going to a patient should be treated with the same care and have the same quality as any other medical device. Technicians need to understand why they are doing what they are doing so that the patient gets the best possible version of the appliance.

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