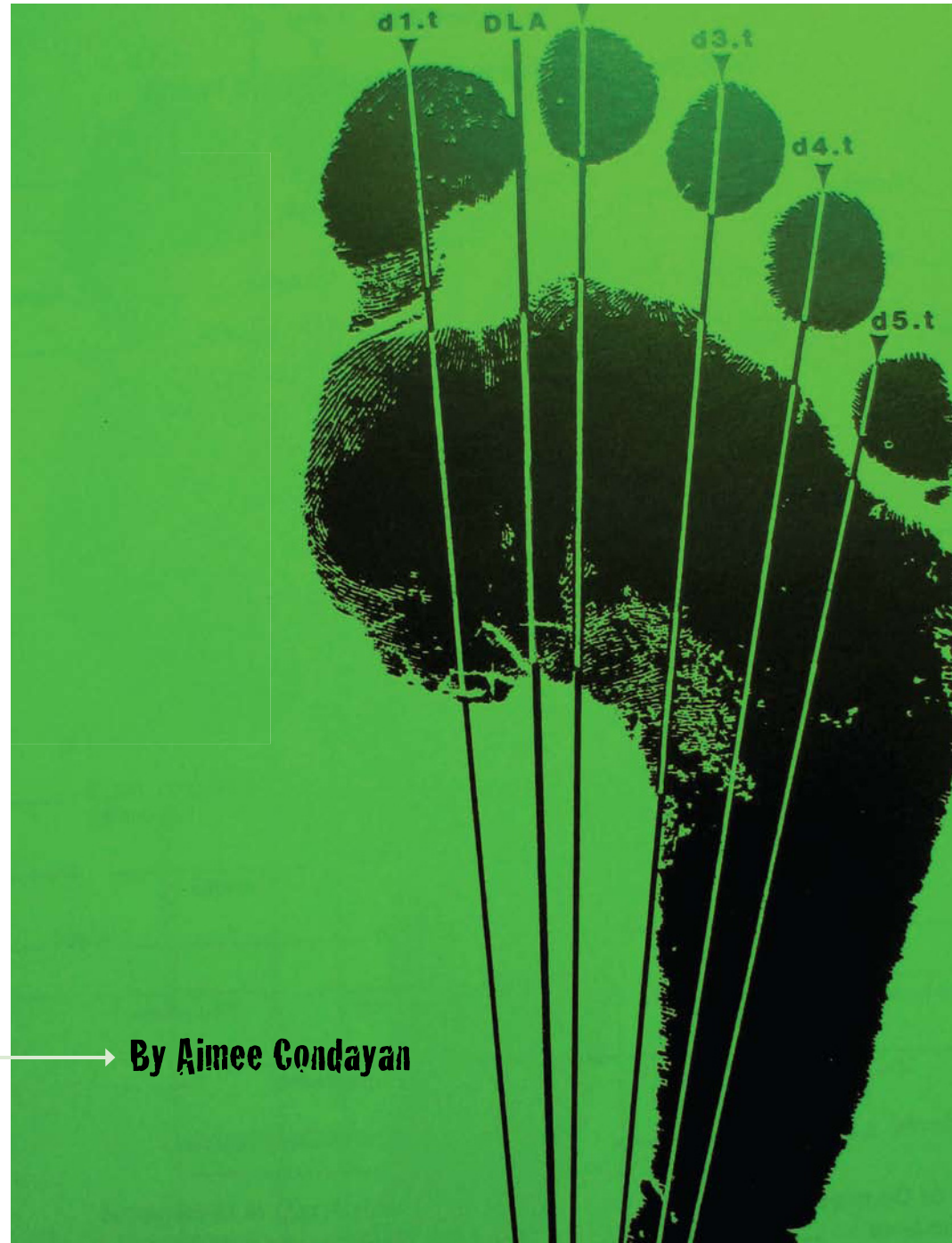


Give 'Em the Boot Print

FIGHTING ILLNESS OR CRIME?

A growing number of podiatrists are doing both. Forensic podiatry has recently gained momentum with more podiatric physicians applying their knowledge and skills to crime scene investigation, but it is something Michael S. Nirenberg, DPM, BSc, BA, of Crown Point, IN, has been studying for years. Forensic Podiatry continued on page 26

→ **By Aimee Condayan**



Forensic Podiatry

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In 1989 as a student, Nirenberg wrote a paper, "Forensic Methods and the Podiatric Physician," published in the *Journal of the American Podiatric Medical Association (JAPMA)*. In that paper, which won the Distinguished Podiatric Medical Writing Award, he said forensic podiatry needs to be its own specialty. After graduation he continued to learn all he could about forensic podiatry through reading and studying with forensic science experts.

In 2003, John DiMaggio, DPM, of Mesa, AZ, formed the American Society of Forensic Podiatry (ASFP), which currently has 20 members from the United States, Canada, and the United Kingdom, including Nirenberg, who is on the board of directors. DiMaggio's time as a reserve peace officer in Mesa allowed him to gain experience in hands-on crime scene investigation and, he feels, has given him a special rapport with law enforcement regarding forensic podiatry. But this takes time, he adds.

"ASFP has been growing slowly by choice," DiMaggio said. "We're a nonprofit scientific organization with constitution and bylaws, but we have wanted to get the infrastructure set up so that if we do take some new members, we can give them something and we can support them properly." Getting podiatrists involved has been more word of mouth or recommendation thus far, he said. "We're trying to develop a nucleus so we have people who will do the work and have time to do the work." Since many podiatrists work in private practice, participation has been mostly on a volunteer basis.

"There are a ton of studies we could do, but we don't have the people to do them, and there are a lot of projects students could do at school in the clinics," DiMaggio said.

Emily Splichal, DPM, graduated last month from the New York School of Podiatric Medicine and has been the student liaison to ASFP for the past several years. "I played this role because my Bachelor of Science degree is in forensic science, so I have that perspective, having had actual training in forensics and

CSI," said Splichal. Splichal said that other podiatric students were curious about the field, but she does not know of any other students who are pursuing it as she has.

One of ASFP's goals, said DiMaggio, is to start an undergraduate program in forensic podiatry or at least an introduction to forensic medicine and podiatry and to have graduate programs.

"We've been lecturing to podiatric groups and letting them know what's going on," he said. He, Splichal, and Nirenberg have lectured at The Midwest Podiatry Conference and at other meetings. "Initially we targeted police organizations, figuring that's where we're going to get our referrals, but podiatry needs to know about it, too. As far as students, they can join ASFP as a student, then they will get newsletters and access to lectures and contacts in the field," DiMaggio said.

The Ohio College of Podiatric Medicine (OCPM) is hosting the 2008 OCPM Footprints and Shoe Prints Seminar Saturday, June 28. OCPM students interested in this emerging field may attend free of charge (download a brochure at www.ocpm.edu/events/2008/forensicsSeminar/brochure.pdf).

The seminar will include lectures from law enforcement and forensic podiatrists, including Nirenberg. "It is going to be really fascinating to hear the non-podiatrists lecture because it's going to allow DPMs to see how non-podiatrists look at feet. We might find that some of those things can help us, or we might find that some of those things are wrong and we can help them."

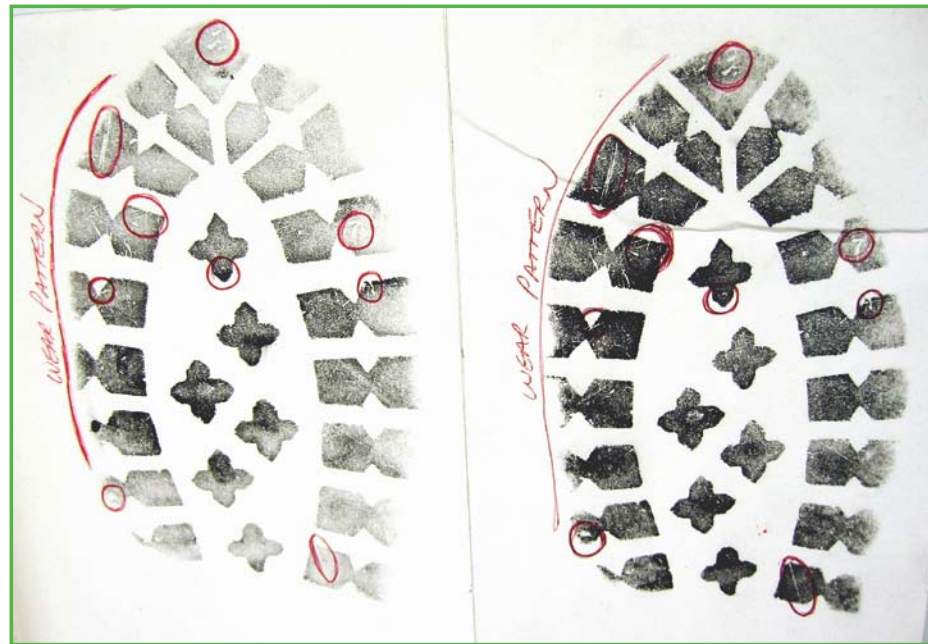
ASFP also is going to have a workshop in November in Tuscon, AZ, which will be the first hands-on forensic podiatry workshop. "It's really going to teach people how to do the work," said DiMaggio. "Once that gets some publicity I would think we are going to get a good response and additional members from it. The goal is education, research."

Nirenberg and DiMaggio are both members of the International Association for Identification (IAI), and both have lectured on forensic podiatry to law enforcement and

Forensic Podiatry



John DiMaggio, DPM



Previous page: Analyzing landmarks on a footprint. Above: Footwear examination/comparison.

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Forensic Podiatry

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podiatrists. Their reception is generally positive but is not without critics.

William J. Bodziak, retired FBI footwear and tire tread examiner who testified in cases such as the OJ Simpson trial and the Timothy McVeigh and Terry Nichols Oklahoma City bombing trials, feels that DPMs' expertise is appropriately used in forensics only on a very limited, supplemental basis, such as to create casts of feet. Bodziak, also a member and past chairman of the IAI's Footwear and Tire Track Subcommittee, said that, "We are in big disagreement with DPMs who are trying to do this work, and the footwear segment of the IAI has protested against forensic podiatry." Despite this claim, in August 2007, the IAI officially adopted forensic podiatry as a new discipline. According to the IAI's Web site, "Forensic podiatry is defined as the application of sound and researched podiatry knowledge and experience in forensic investigations, to show the associa-



Nirenberg examining a print at the scene.



Shoe prints.

tion of an individual with a scene of crime, or to answer any other legal question concerned with the foot or footwear that requires knowledge of the functioning foot."

"Podiatry has a long history of those who have been supportive of us and those who have not. Mr. Bodziak is entitled to his opinion," Nirenberg said. "However, the American Society of Forensic Podiatry (ASFP) was founded in order to assure law enforcement that forensic podiatrists will adhere to medical, forensic, and ethical standards. The goal of the ASFP is to help ensure that only those podiatrists who are qualified practice forensic podiatry. Podiatrists have a unique viewpoint and unique medical training that forensic footwear examiners lack. As a result, we are ideally suited to evaluate foot impressions, whether in shoes, on surfaces, or even on human bodies."

"This recognition by the IAI gives forensic podiatry a ton of credibility," Nirenberg said. "It's something podiatrists have been trying to do. They tried previously, and it wasn't recognized." DiMaggio added that when the IAI previously rejected the disci-

Forensic Podiatry

pline, they were actually helpful because they gave forensic podiatrists an idea of what they needed to accomplish and what skills they needed to have in order to be accepted into the organization—and they succeeded.

Furthermore, Dwane S. Hilderbrand, MEd, also an IAI member and Certified Latent Print Examiner, Certified Footwear Examiner, and Certified Senior Crime Scene Analyst, said he thinks DPMs do have a place in forensic science. He believes that the reason some footwear examiners are against forensic

FORENSIC PODIATRY IS DEFINED

as the application of sound and researched podiatry knowledge and experience in forensic investigations, to show the association of an individual with a scene of crime, or to answer any other legal question concerned with the foot or footwear that requires knowledge of the functioning foot.

podiatry is that they think one specialty threatens to invade the other rather than enhance it. He said, however, that only those properly trained in footwear examination should be a part of that aspect of the field. "I think podiatrists have to be involved in this. I believe that what forensic podiatrists are doing is a team effort with what we're doing—as long as we don't step on each others' toes."

Hilderbrand said that podiatrists' unique expertise lends itself to examination of the impressions made by the foot inside a shoe. "They are going to take the human foot, the impression inside the shoe, and compare the two together," he said.

To get impressions of suspects' feet, according to Nirenberg, the podiatrist often will take footprints—the simplest way to start—and then take a cast of the foot, which is usually court-ordered, as is apprehension of suspects' additional pairs of shoes for comparison. Photos of a suspect's feet are taken, as well. "You show a picture or mold of the suspect's foot and then say his foot made the wear marks because of these two bony problems or

Forensic Podiatry continued on page 30

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foot deformities. All this comes together to eventually persuade a jury that this is the suspect's shoe. Or if you don't find those things, then you can rule out a suspect," said Nirenberg. Shoe sizing issues as well as gait pattern also are examined by forensic podiatrists to assist police in identifying a suspect. "There's a lot you can infer from their gait. Even from a footprint, you can make an estimate of the height of a person. You don't want to convict someone on estimating; however, that information can help law enforcement when they are looking for the suspect. You can say this person is between 5 ½ and 6 ½ feet tall," Nirenberg said.

Nirenberg's paper on a new high-tech method he developed of forensically examining footwear ran in the May 2008 issue of the *Journal of Forensic Identification*, the IAI's scientific journal.

Up until this point, Nirenberg said the method that forensic scientists used to examine footwear was to put a mirror inside it—often a dental mirror to see the impression of the foot on the shoe and on the upper of the shoe—then carefully cut apart the

NIRENBERG SAYS THAT HE FEELS HE NOW IS A BETTER PROBLEM SOLVER for his patients than he was before he got into forensic podiatry. "I'm now looking at the effect of that foot on a surface on the shoe, the way the shoe deforms to the foot. I spend a lot more time looking at footwear, and when a patient has a problem, a lot of times I'm able to see things I didn't see 10 years ago."

shoe. "I thought there had to be a better way to look inside a shoe," Nirenberg said. One day after performing arthroscopic surgery, and after the camera was cleaned, he put it in his shoe

and got an image of the impression of the foot inside the shoe, which became the basis of his paper.

This method enables high-definition, 360-degree images and video of the shoe that can be presented to a jury. "Even if you take apart the shoe," Nirenberg said, "the jury can see the relationship with that impression of the suspect's foot, because a lot of times in crime scenes, particularly a rape, a shoe will get kicked off and left at the crime scene. So, what the forensic podiatrist needs to do is make a link between the shoe and the suspect; is it the suspect's shoe or not? It's just as important to exclude a suspect as to say this is definitely his shoe. You look at the foot, and you have to match up all the bony deformities, the specific structure of that person's foot to the wear pattern and marks inside the shoe."

Nirenberg says that he feels he now is a better problem solver for his patients than he was before he got into forensic podiatry. "I'm now looking at the effect of that foot on a surface on the shoe, the way the shoe deforms to the foot. I spend a lot more time looking at footwear, and when a patient has a

problem, a lot of times I'm able to see things I didn't see 10 years ago."

"The biggest and best thing about FP is it's another way for podiatrists to contribute to society. I really feel there is a potential here for DPMs to really make a difference," Nirenberg said. "There's a lot of talk about DPMs becoming MDs and different things, and here's an aspect of our profession where we really should celebrate that we are podiatrists, and we're the ones most qualified to examine footwear and footprints. I hope forensic podiatry grows as a specialty and becomes something really beneficial to society." ■

More information about the Forensic Podiatry discipline of the IAI can be found at www.theiai.org/disciplines/podiatry/index.php. The IAI has a reduced fee for full-time students (\$35/year). Further specialized training opportunities are available through the organization. Visit Nirenberg's Web site at www.americaspodiatrist.com. The ASFP plans to create a Web site soon.

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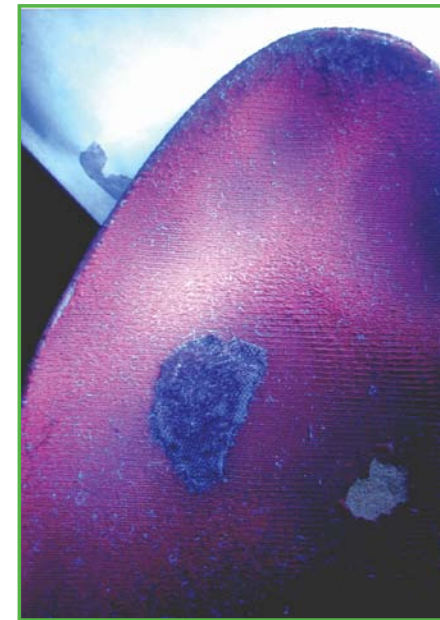
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