

Do you carry the gene for academia?

Dermatologists weigh in on candidates skill sets and abilities

Academic dermatology faces a demographic problem, according to John E. Olerud, M.D. The average age of Association of Professors of Dermatology (APD) members is 58, he said, while the average age among all academic dermatologists is 46. "Who will train the next generation?" he asked.

Dr. Olerud presented the conundrum at the start of the Careers in Academic Dermatology forum, held during the American Academy of Dermatology's 65th Annual Meeting in Washington, D.C., earlier this year. He reminded attendees that an academic job offers intellectual stimulation, the chance to develop new knowledge, and opportunities to work with the best and brightest medical school graduates while training the next generation of dermatologists.

He acknowledged, however, that there are barriers to pursuing an academic career. It requires certain skill sets and abilities, as well as training and mentorship during a residency that is already intense. And funding to start an academic career — particularly a research-based one — often has to be cobbled together from a variety of sources.

But many organizations are working to lower these barriers, Dr. Olerud said. The National Institutes of Health offers loan repayment programs and training grants for young investigators, and several organizations, including Dermatology Foundation and the American Skin Association, offer entry-level grants for young faculty members. The Academy, the APD, and the Society for Investigative Dermatology offer programs to help young dermatologists consider-



ing academic careers to find mentors and acquire the special skills, like grant-writing, needed to be a successful academic dermatologist.

New generation, new draws

Lynn Cornelius, M.D., expanded the scope of the discussion, suggesting that these aforementioned steps are not enough — because the factors that drew current academics to their jobs are not going to entice a younger generation. As a whole, she said, people

See *Academia Gene* on p. 6

welcome

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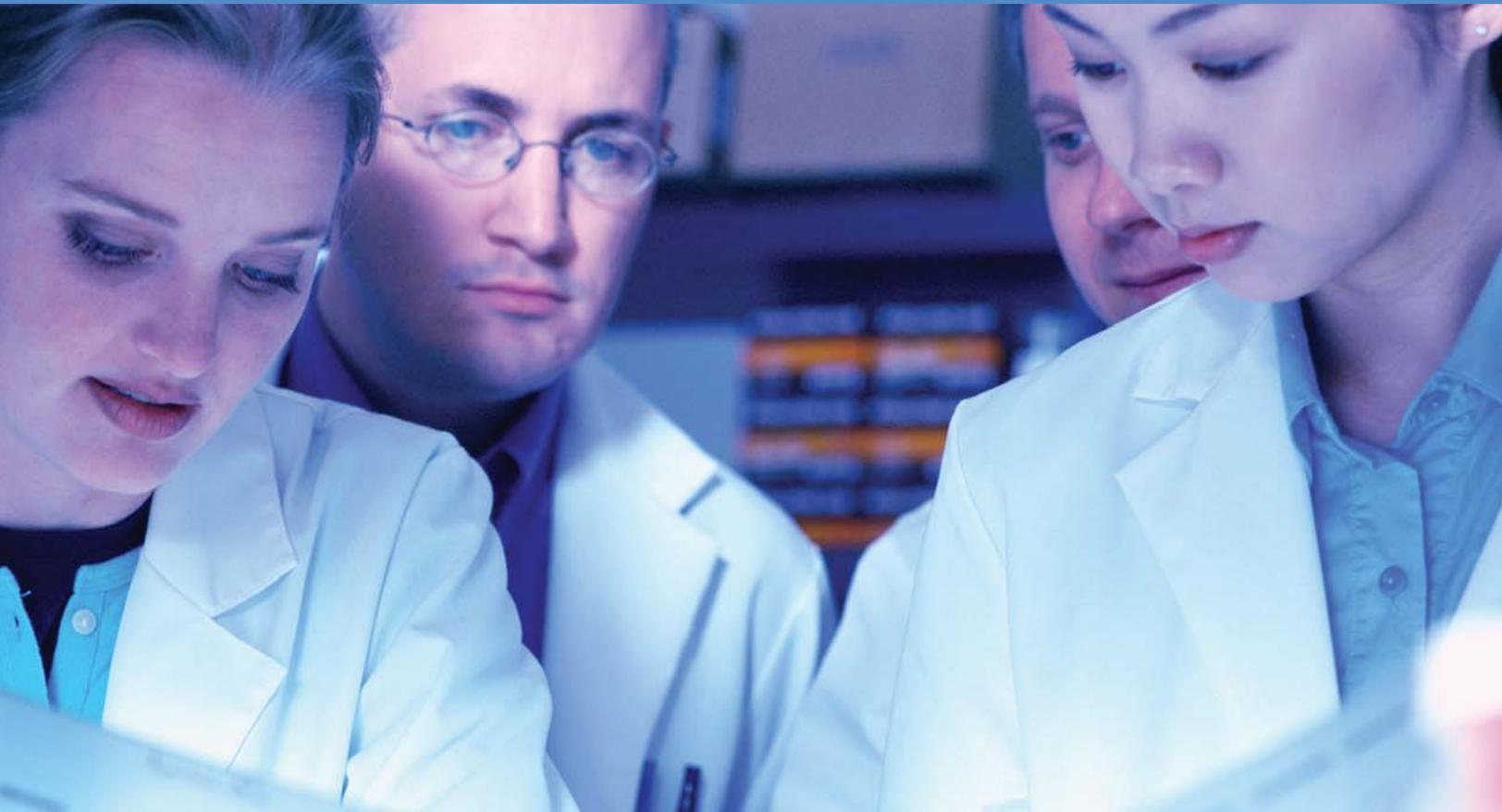
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Focused on dermatology education and treatment



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Workforce issues a concern for the world of medicine

With shortage predicted, more med schools called for

Dermatologists who have been reading their journals and attending sessions at the American Academy of Dermatology Annual Meeting in the last few years have heard much about the ramifications of a workforce shortage in the specialty. Predictions presented to the Academy's Workforce Task Force indicate that, at present training levels and given shifts in demographics, the coming decades will see a lower ratio of dermatologists to population in the United States, putting additional pressure on dermatology practices that already have some of the longest wait times of any medical practice. But even as the Academy has been tracking a workforce shortage in dermatology, the Association of American Medical Colleges (AAMC) has been looking at the situation throughout medicine. Several specialties have already declared that they need more physicians in order to meet the needs of patients (see sidebar), and AAMC predicts that by 2020 the nation will face a shortage, according to Amit Pandya, M.D., professor of dermatology at University of Texas Southwestern, who represents the Academy at AAMC.

Aging population

"There is a legitimate concern because the population of the United States is growing rapidly and especially people over the age of 65," Dr. Pandya said. "They're the ones who consume the greatest health care resources, including dermatologic care. The elderly come in for skin cancers and pre-cancers more than younger patients; that is a large percentage of what dermatologists do so we're going to be seeing more of that in the future." Dr. Pandya noted that with increasing wealth, people tend to utilize more health care services and resources. "Skin is definitely an area where people who have more wealth tend to seek more care," he said.

In the face of this upcoming increase in demand, Dr. Pandya said, "The available supply of physicians is about to decrease. For the last 20 years or so the actual number

of medical students being produced has been relatively flat compared to the increase in the population." Compounding this is the fact that one-third of the 750,000 physicians in the United States are over the age of 55, Dr. Pandya said. "So there's a quarter million doctors over the age of 55 and they're going to retire before 2020," he said. "Studies have shown that doctors in the new generation do not work the long hours that the older physicians do and they often will work only a few days a week," he said, due to factors that include child care responsibilities, the increasing proportion of women in medicine, and differing generational attitudes. "All these baby boomers are beginning to approach 75 years of age and we're going to be having a physician shortage," he said. "We could be 100,000 physicians short of what we need by 2025."

Increase recommended

To combat this projected shortage, AAMC recommends a 30 percent increase in the number of spots open to medical students each year. "That would be about 5,000 additional students per year," Dr. Pandya said. "That still would be less than the total number of matriculants right now plus the international medical graduates (IMGs) who are accepted into residency programs," he said. "Right now there are 17,000 U.S. medical school graduates per year, but there are about 27,000 residency positions available in the U.S. And those residency positions that do not get an American medical graduate get an IMG. Even if we increase the number of medical students by 5,000 that still would not fill up all of the residency spots in the nation."

An increase in medical school spots alone will not alleviate a shortage of dermatologists; indeed, on its own such an increase would result in little change for the specialty in terms of filling its residency spots. "Dermatology is a residency that is hardly ever filled by IMGs," Dr. Pandya said, and indeed fills

reflections



by Ray Cornelison, M.D.

I attended my first Academy meeting in Miami Beach in 1969. I was looking forward to hearing from the "big names" in dermatology. I held them in esteem usually reserved for rock stars.

I was at one of the symposiums and after a speaker finished, the room almost emptied before the next speaker got to the podium. I was shocked to see everybody leaving when one of the best-known speakers was scheduled to appear. As he began to speak, however, I knew why everyone had left. He gave his address in a dreadful, lifeless monotone that befitted a presentation that was ultimately boring. I left after 10 minutes.

I learned a couple of things that day. For one, you can't always put your idols up on pedestals — they may end up disappointing you. Second, not everyone is a seasoned speaker. You may have something important to say, but it's equally important to learn public speaking skills so that people will listen to what you're saying. The other valuable lesson I learned was that you should pay attention to those more seasoned around you. Those who left the symposium that day had "been there and done that" and knew when to leave.

Dr. Cornelison did his dermatology residency at Baylor and Oklahoma and was president of the American Academy of Dermatology in 2003. 

Reflections features prominent dermatologists providing memorable stories from their residency.

nearly every available slot through the Match process every spring. (See sidebar on page 7 for this year's Match data.) "If we increase the number of medical students in the U.S., then the AAMC is also calling for Medicare to lift its cap on graduate medical education reimbursed by Medicare so that we can have more residency spots as well," Dr. Pandya said. "That's a good idea for dermatology because our specialty only has a certain number of residencies and that's not enough to fulfill the skin care needs of the United States."

See *Workforce* on p. 7

Autoimmune bullous disease

Mariana A. Phillips, M.D.

Disease	Immunology/ Autoantigen	Primary Lesion	Distribution	Distinctive Pathology	Associated Disease	Associated Drugs
Bullous Pemphigoid	BPAg 1(230 kDa) BPAg2-NC16A (180 kDa) IF: Linear C3 & IgG at BMZ IgG4>IgG1	Tense blister on normal or erythematous base Urticarial plaque	Lower abd, inner/ anterior thigh, flexor forearms; may be anywhere 10-35% with oral mucosal involvement	Subepidermal blister with superficial dermal infiltrate with EOS 50% with Eosinophilia	No increase in cancer; age appropriate screening	Furosemide Captopril Enalapril Nalidix Acid PCN Penicillamine Sulfasalazine
Cicatricial Pemphigoid	BPAg2- NC16A & a more distal site Laminin 5- a3 LAD1, a6b4 Type VII collagen IF: Linear IgG and C3 at BMZ	Tense vesicle bulla on erythematous or urticarial base, rupture easily	Mucous membranes Oral & conjunctiva most common; Esophageal, rectal, genital, nasopharyngeal ***1/3 develop skin lesions****	Blister in lamina lucida with mixed infiltrate — may see Plasma cells, EOS, PMNs		Penicillamine Clonidine
Epidermolysis Bullosa Aquisita	IgG to NC1 of Type VII collagen (Anchoring fibrils) a-chain- 290kDa 145 kDa- NC1 domain IF: Linear IgG at BMZ	Blister on non-inflamed skin Scarring and milia cyst formation	Classic – acral with alopecia & nail dystrophy BP-like – widespread with accentuation in skin folds Brunsting-Perry – head & neck involved Mucosal form	Subepidermal blister in the sublamina densa PMN predominant May see blister in the lamina lucida because that is the weakest point	Inflammatory bowel disease Diabetes Thyroiditis Myeloma Bullous SLE Lymphoma	
Herpes Gestationis	IgG1 & C3 BPAg2 NC16A domain C3 is the main factor! IF: Linear C3 at BMZ	Erythematous papules Papulo-vesicles Urticaria Tense Bulla Extremely pruritic	Peri-umbilical, abdomen, may involve palms, soles, chest, back Mucosa spared	Necrosis of basal cells with vacuolization Bulbous teardrop shaped blister Edema of dermal papilla	Grave's disease Hydatidiform mole, choriocarcinoma Usually in 4th to 7th month of pregnancy or in post partum period No increase in maternal mortality May recur at delivery, oral contraceptive use, menstruation, and subsequent pregnancy	
Chronic Bullous Disease of Childhood	Linear IgA1 + C3, IgG	Pruritic tense blister on inflammatory base	Perineum, perioral region, "collarette of blister" Lower trunk and thighs +oral lesion		HLA B8	



Mariana A. Phillips, M.D., is currently an assistant professor at the Virginia Commonwealth University in Richmond, Virginia.

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Disease	Immunology/ Autoantigen	Primary Lesion	Distribution	Distinctive Pathology	Associated Disease	Associated Drugs
Linear IgA Dermatosis	Linear IgA1; antigen unknown LAD-1 (97kDa, 120 kDa); Type VII collagen. IF: Linear IgA at BMZ + IgG/C3	Annular/ grouped papules, vesicles, bulla, urticaria	Pruritic, symmetrical, extensors — elbows, knees, buttocks. 70% with oral lesions	Subepidermal bulla, neutrophils along BMZ; perivascular lymphocytic infiltrate	Lymphoid malignancies Thyroid disease	Vancomycin Lithium Diclofenac
Dermatitis Herpetiformis	IgA1 + C3 granular deposits at BMZ. IF is + in normal appearing skin (IgA & C3 deposits not affected by treatment with dapsons, does decrease with glutamine free diet)	Papulovesicle +hemorrhagic Urticarial plaques	Symmetrically on extensor surface; elbows, knees, buttocks, sacral, shoulders	Blister in lamina lucida Neutrophilic microabscesses in dermal papilla + EOS Accumulation of PMN in BMZ Late – necrosis of keratinocytes	Gluten sensitive enteropathy Increased GI lymphoma DM, SLE, vitiligo, non-Hodgkin's, Sjogren's HLA-B8 HLA-DR3 DQ-w2	Iodides aggravate
Pemphigus Foliaceus	IgG to 160 kDa Desmoglein 1 IgG4- complement independent IF: intercellular IgG throughout epidermis Pemphigus Erythematosus: +ANA; +lupus band test, IgG and complement intracellular and at BMZ	Scaly crusted erosions on erythematous base	Seborrheic distribution — face, scalp, trunk Rarely Mucosa inv. Fogo selvagem- endemic to Brazil	Blister just below stratum corneum in granular layer with acantholysis Exocytosis of EOS Perivascular infiltrate with EOS	Myasthenia gravis Thymoma	Penicillamine Captopril Piroxicam
Pemphigus Vulgaris	IgG to Desmoglein 3 in mucosal predominant IgG to both Desmoglein 1 and 3 in mucosal and cutaneous disease IgG4- complement independent	Painful, not pruritic flaccid Blisters on normal skin	Occur anywhere In majority of pts, mucous membrane involvement will be the presenting symptom	Suprabasilar blister with acantholysis and acantholytic cells in the blister cavity Pemphigus vegetans – intraepidermal eosinophilic abscesses	Myasthenia Gravis Thymoma	Penicillamine Captopril (drugs are not implicated as often as in pemphigus foliaceus)
Paraneoplastic Pemphigus	IgG and C3 Dsg 1, DSG 3, Plectin, BPAg1, Envoplakin, Periplakin 250, 230, 210, 190, 170 kDa proteins involved IgG and C3 IF: IgG and C3 intercellular and linear along BMZ	blisters on erythematous skin	Severe oral and conjunctival involvement	Dyskeratosis, suprabasilar acantholysis with basal cell vacuolar change and exocytosis	Non-Hodgkin's Lymphoma Leukemia (CLL) Thymoma (6%) Waldenstrom's macroglobulinemia Castleman's disease (HHV-8)	

If you would like to contribute to this popular, widely-read feature, please contact the editor, Dean Monti at dmonti@aad.org.

graduating from residency today are more self-reliant and results-oriented than previous generations. They assimilate technology, hope to be judged on merit, and expect their boss to know them personally, she said. Dr. Cornelius argued that academics can meet all of these needs as long as residents who become young dermatologists take time to choose a position that fits.

The session then turned to a panel of academic dermatologists with different areas of focus discussing how they chose their academic career and why they have chosen to stay with it. Jeff Miller, M.D., a clinician teacher in the Hershey Medical Center's department of dermatology in Pennsylvania, characterized academics as a fun environment. "Every day you get to do new things," he said, noting that the job allows for a great deal of mixing and mingling, participation in journal clubs, travel, and meeting new people. "Mentors make a huge difference," Dr. Miller said.

Andrew Blauvelt, M.D., a physician scientist at Oregon Health and Sciences University, suggested that there is a gene for academia. Those who are homozygous for it will enter academics without any prodding, he said; those who are heterozygous need to be mentored into it, but will reap great rewards. He suggested eight questions to ask to determine whether a person has the academic gene (see sidebar).

Susan Ailor, M.D., a dermatologist at the University of Missouri, moved to academics after 14 years in private practice, she said, proving that the choice can be made later in a career. Her choice, she said, was

Do You Have the Academic Gene?

Andrew Blauvelt, M.D., suggests there is a gene for academics. Answering yes to more than a few of the following questions may indicate the presence of the gene:

- Is grand rounds your favorite day of the week?
- Do you enjoy writing?
- Do you identify favorably with a dermatology academician?
- Do you enjoy teaching and giving talks?
- Do you like the idea of becoming the expert in something?
- Do you love the idea of being a lifelong learner?
- Are you eclectic, well-rounded, and a happy traveler?
- Are you highly materialistic? (This last question needs a no, Dr. Blauvelt said.) 

made easier by having an institution and a chairperson who offered her the flexibility she needed. "You need to decide what's important to you," she said.

Marcy Neuburg, M.D., a dermatologic surgeon at Medical College of Wisconsin in Milwaukee, told the story of starting the dermatologic surgery program there, and noted that 16 years later she still loves her job. She also pointed out that academics has allowed her to develop important relationships and partnerships with other physicians. The cultivation of these relationships allows her to provide better care to her patients, Dr. Neuburg said.

Practical considerations

After the panel took questions from the audience, S. Wright Caughman, M.D., chair of the dermatology department at Emory University School of Medicine, discussed practical considerations in structuring an academic package. Academic employers, he said, seek recruits with intellectual curiosity, intelligence, character, passion, commitment, and a desire to be a team player. In his experience, job-seekers look for many of the same

things in potential employers, along with respect, room for growth, a commitment to career development, and financial security. This last consideration is important, Dr. Caughman said, but noted that "money gratifies, but it rarely sustains excitement."

There are many resources available from which to assemble an academic package, he said. Researchers can ask for startup packages; institutions understand that it takes time and money to get a research lab up and running. Clinicians can develop a practice, work with the Veteran's Administration, and receive funding from the local government. Educators can tap into a limited medical education budget, Dr. Caughman said, but noted that teaching by physicians is an underfunded mandate. Mission-based budgeting and transparency are changing this, he said. Dermatologists who want to enter a salary negotiation can review the American Association of Medical Colleges Report on Medical School Faculty Salaries, he added, and should remember to consider total compensation rather than just salary when considering an offer. 

boards' fodder available online

Since its inception, Boards' Fodder has been a popular addition to *Directions in Residency*.

Topics have included:

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- Bones, Eyes, and Nails
- Bugs and their Vectors
- Histologic Bodies
- Viruses

- Contact Allergens
- Drugs and Dermatologic Diseases
- Inherited Palmar Plantar Keratodermas
- Lasers
- Porphyrias
- Syphilology

You can view Boards' Fodder we have published to date

online in the Resident/Fellows section of the American Academy of Dermatology Web site. The direct link is www.aadassociation.org/residents/BoardsFodder.html/

Do you have a Boards' Fodder to share? Contact the editor Dean Monti by e-mail at dmonti@aad.org. 

International students

Increasing the number of medical school spots will also help to deal with a growing issue: American students who leave the country to attend medical school and return to complete residencies. With 5,000 more spots in the U.S., Dr. Pandya said, many of those students would be able to stay in the U.S. for medical school, saving them money and keeping them in school accredited by the Liaison Committee on Medical Education (LCME). "AAMC feels strongly that the LCME-accredited schools are really the best schools," Dr. Pandya said.

Another option being considered to ensure adequate medical education U.S.-bound graduates of international medical schools is to accredit those schools, Dr. Pandya said. "There are a lot of issues that go along with that, but the main fact is that these doctors are going to end up practicing with us anyway in the future so it would be a good idea to look into accrediting those schools," he said.

Underserved areas

AAMC also has plans to deal with location-specific physician shortages, another problem familiar to dermatologists. "Studies have shown that medical students from racial and ethnic minority groups are more likely to practice in underserved communities and to care for a disproportionate number of disadvantaged patients compared to those who are not from these backgrounds," Dr. Pandya said. To attract these students to medicine, he said, "AAMC has developed a marketing plan complete with ads and commercials that are being shown and presented to students at colleges where there are a lot of students who are from these historically underrepresented and minority groups in programs that are potentially pre-med programs, like biology, but they're not applying to medical school."

Another tactic to draw physicians to underserved areas involves loan repayment, Dr. Pandya said. "One of the problems for anyone contemplating going to medical school is the unbelievable cost. One of the concerns is why would people go to medical school when a few months after getting out of residency they're going to have a \$1,500 a month loan payment? It's predicted that it will be a \$250,000 loan for people entering medical school now and they will have a \$2,500 a month payment. That has big implications," he said. People with such a financial obligation may hesitate to go to underserved and rural areas, to go into lower-paying specialties, or to volunteer in the U.S. and abroad. To address this, AAMC is asking the government to increase funding programs that repay loans for physicians who are willing to commit to working a certain number of years in undersupplied areas, which could be targeted as specifically as a particular hospital in need of more physicians. This program would provide care to underserved populations and could lead physicians to put down roots in areas they may not have otherwise considered, Dr. Pandya said. "If you have a quarter-million dollar loan, and a government program says if you go to El Paso, Texas and practice there for three years, we will pay off your loan, by the time you've been there three years and developed friends and relationships, you might be more likely to stay there." Such a program could be especially helpful for short-

age areas in the south and west, Dr. Pandya said. "They're having an expanding population without a concomitant increase in the number of doctors there," he said.

The cost of all of these recommendations, Dr. Pandya acknowledged, will be high. But the cost to American taxpayers of allowing a shortage to occur, leading people to ignore medical needs until they become urgent, would be even higher, he said.

Specialties Facing Shortage

The following medical specialties have reported a shortage to the Association of American Medical Colleges:

- Critical care
- Pediatric subspecialties
- Endocrinology
- Geriatric medicine
- Neurosurgery
- Psychiatry
- Allergy and immunology
- Cardiology
- **Dermatology**
- Medical genetics
- Radiology 

Dermatology in the Match

Data from the National Resident Matching Program show that dermatology is consistently one of the most sought-after residencies within medicine. The data below show how dermatology's rate of positions filled compared to all of medicine in the 2007 Match. 

dermatology in the match			
	Position offered	Filled by U.S. medical students	Filled at all
Dermatology PGY-2	288	78.5%	99.7%
All medical specialites	24,685	65.9%	94.2%

32 dermatology PGY-1 positions were also offered; 78.1 percent were filled by U.S. medical graduates and all were filled. Source: National Residency Matching Program

Residents encouraged to attend Live Patient Viewing session at Summer Academy Meeting



Three new Live Patient Demonstrations have been scheduled for the Summer Academy Meeting 2007.

The Live Patient Viewing sessions at the Summer Academy Meeting 2007 (Saturday, Aug. 4), will be led by Jo-Ann Latkowski, M.D., and will be located at Mt. Sinai Hospital in New York.

"The Live Patient Viewing session is a unique opportunity for dermatologists to have direct access to patients with exceptional diseases and conditions," Dr. Latkowski said. "In addition, during the afternoon discussion period, each case will be reviewed along with the criteria for diagnosis and treatment options. It will be a good educational opportunity for participants to learn about diseases and

conditions that are not regularly seen in their dermatological practices."

The Live Patient Viewing session at the Summer Academy Meeting 2007 is expected to include cases from several local area hospitals, including the following institutions:

- St. Luke's-Roosevelt Hospital Center.
- New York Presbyterian – Cornell (also known as Weill Medical College of Cornell University).
- New York University.
- University of Medicine and Dentistry – New Jersey – Newark Campus.
- State University of New York. (SUNY) Downstate Medical Center

"Each participant will receive a bound handout with all the patient information and discussion which they could use as a dermatology reference in the future," Dr. Latkowski said. "Also, the afternoon discussion session will be a beer and wine discussion session. So it will be a relaxed setting for a lively discussion."

For more information about the session, visit the Summer Academy Meeting 2007 section of the Academy's Web site, www.aad.org, and also in the Summer Academy Meeting 2007 Program Book. 

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Reflections

Ronald G. Wheeland, M.D.