

AAD U059
Semiannual Meeting of the
DERMATOLOGY TEACHERS EXCHANGE GROUP
7:15am – 8:45am Monday, March 23, 2015
Room 3000, West Bld, San Francisco, CA

7:15	Welcome and opening remarks	T Ferringer (Geisinger, Danville, PA)
7:17 (6 min)	Impact of a Formal Visual Thinking Strategy Curriculum on Observational Skills of Dermatology Residents	E Buzney and J Huang, (Harvard, Boston, MA)
7:23 (6 min)	Artful Observation in Dermatology--The Brown Experience	J Kawaoka and I Parulkar (Brown, Providence, RI)
7:29 (6 min)	Surgical Flap and Graft Reconstruction Workshop for Dermatology Residents	B Goodwin (University of Texas, Galveston, TX)
7:35	EXCHANGE	
7:39 (4 min)	Teaching the KOH prep: A Disappearing Clinical Art Form	J Meyerle (Uniformed Services University of the Health Sciences, Bethesda, MD)
7:43 (6 min)	Dermatology Resident Training, Experience, and Comfort Prescribing Phototherapy	K Anderson (Wake Forest, Winston-Salem, NC)
7:49 (6 min)	Improving faculty-to-resident feedback	T Chang (Mayo, Rochester, MN)
7:55 (6 min)	Patient Perceptions of Workplace Based Formative Assessment	D Baird (Penn State, Hershey, PA)
8:01 (6 min)	Perspectives on Dermatology Grand Rounds: A Survey of United States Residency Program Directors, Faculty, Trainees, and Patients	S Chen (Harvard, Boston, MA)
8:07	EXCHANGE	
8:11 (6 min)	Teaching dermatology to internal medicine	M Li (University of Calgary,

	residents: Evaluating the effectiveness of an educational intervention and its impact on long-term knowledge retention	Alberta, Canada)
8:17 (6 min)	Flipped Dermatology: Incorporating Flipped Classroom Learning Methodologies in a Second-Year Medical School introductory Dermatology Course	D Faber and J Fox (University of Miami, FL)
8:23 (6 min)	An assessment of diagnostic and therapeutic skills acquired after dermatology elective	M Johnson (UC Davis, Sacramento, CA)
8:29 (4 min)	Integrating dermatology into the first week of medical school: Total body skin exams on cadavers	J Lloyd (Northeast Ohio Medical University, Youngstown, OH)
8:33 (6 min)	Underrepresented Minorities (URMs) and Perspectives on Successful Matching to Dermatology Residency	R Vasquez (University of Texas Southwestern Medical Center, Dallas, TX)
8:39	EXCHANGE	
8:45	ADJOURN	

Impact of a Formal Visual Thinking Strategy Curriculum on Observational Skills of Dermatology Residents

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Background: Training in Visual Thinking Strategies (VTS) using fine arts media has improved clinical observational skills in studies of medical and nursing students. We sought to assess the impact of augmenting dermatology residency training with a VTS curriculum; we hypothesized that VTS training would improve the detail of image description.

Methods: 26 dermatology trainees at a single residency program participated in a 4 session course at the Museum of Fine Arts, Boston, led by art educators and dermatology staff. Before and after the course, each participant completed an image test composed of 3 medical and 2 art images, a Communication Skills Attitudes Scale (CSAS), and a modified Budner's Tolerance of Ambiguity Scale (TOAS). A crossover design employed two image sets for pre- and post course tests to control for possible learning and image differences. The detail of image description was compared pre- and post-course by averaging 2 raters' counts of the number of observations by each resident per image. A course evaluation was also completed.

Results: The number of observations described per image (mean±SD) significantly increased among residents (28.7±11.2 vs. 33.1±10.2, p=0.038). Medical image description improved significantly among males, and art image description improved significantly among females. Medical image description scores improved significantly for only senior (PGY 4-5) residents. Medical and overall image description improved significantly for only those who attended ≥3 sessions. TOAS and CSAS scores were unchanged. 71% noted that course contribution to professional growth exceeded expectations, 67% would use skills in clinical practice, and 57% requested yearly repetition.

Conclusion: A single-arm, open-label intervention augmenting dermatology residency curriculum with formal VTS training demonstrated improvement in the detail of medical and art image description; the VTS curriculum was endorsed as useful and relevant by residents.

Artful Observation in Dermatology--The Brown Experience

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Visual examination of fine art has been shown to hone observational skills of medical students, but there is a paucity of literature on its application in graduate medical education. In dermatology, visual literacy is fundamental. We designed and implemented our first session in visual training for Brown dermatology residents, focusing on two works of art. The first painting introduced formal characteristics

of art including line, shape, and color, and was designed to assess how each resident approached the evaluation. The following open-ended discussion was fascinating and focused on a number of aspects: Did they describe purely what they saw, or focus more on their emotional response? Did they make inferences right away? Did those inferences change the way they continued the evaluation? Did they look at the big picture? The second piece facilitated a great discussion of colors, but also affective responses and how they influence interpretation. The facilitator concluded by asking the group to reflect on its experience. Did they find that slowing down the observation process informed what they saw? What translated professionally and/or personally? Though the quality and quantity of the descriptions of a pre-and post-test using clinical photographs did not appreciably differ, a better scoring system measuring more descriptors or comparing descriptions over a number of sessions may be more informative. For now, our narrative responses were overwhelmingly positive, and all felt the exercise was beneficial and wanted to go back. We are currently planning future sessions at the museum and hope to expand on what the formal characteristics such as color and textures may reveal about an underlying cutaneous process. Reflecting on our personal responses to pieces will be a good platform for discussing how we process our reactions to patients. Also exciting is that this work addresses multiple milestones including examination skills, communication and lifelong learning.

Surgical Flap and Graft Reconstruction Workshop for Dermatology Residents

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Background: Many surgical teaching models used in resident education emphasize learning the technical and manual dexterity skills necessary to be a surgeon, yet few focus on obtaining the theoretical and abstract skills needed for planning complex cutaneous surgical repairs with flaps and grafts. We developed and evaluated a novel surgical flaps and grafts workshop for residents through the Department of Dermatology.

Methods: Participants received a 60 minute PowerPoint lecture focusing on the basic principles of cutaneous repair with flaps and grafts, with examples and explanation of each of the four main types of flaps and grafts. The participants then received nine photocopies of Mohs micrographic surgery defects with instructions to design three repairs, focusing on functional and aesthetic outcome. Hypothetical and actual repair designs were then discussed in an open forum format. Anonymous surveys administered to 11 dermatology residents assessed their knowledge level, confidence level, and likelihood of using flaps and grafts pre- and post- workshop using Likert scales. Overall experience was also assessed. A paired sample Wilcoxon Signed Rank Test was used for analysis, since the data was non-parametrically distributed.

Results: There was a statistically significant increase in confidence performing flaps post workshop ($p=0.0469$). There was also an increase in knowledge of flaps and grafts, confidence in planning flaps and grafts, and confidence in performing grafts post workshop, but these findings did not reach statistical significance. The workshop had no effect on expected future use of flaps and grafts.

Conclusions: The surgical workshop is a novel simulation teaching tool for learning basic principles and design of flaps and grafts in cutaneous surgery.

Teaching the KOH prep: A Disappearing Clinical Art Form

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Using potassium hydroxide (KOH) preparations in the diagnosis of superficial fungal infections is a technique that has been handed down from teacher to apprentice for over 100 years. The technique is simple, accurate, and inexpensive; however, there is reason to believe it is falling to the wayside in favor of empiric treatment, especially in primary care settings. In order to continue the use of this valuable diagnostic aid, a system of teaching the KOH preparation to the next generation of doctors (medical students and resident physicians) is proposed with emphasis on facilitating the process by storing viable skin samples infected with dermatophytes for long periods of time. This technique obviates the need to find suitably infected patients before each teaching laboratory. This technique is also appropriate to refresh the skills of practicing physicians as they prepare for point of care testing assessments.

Dermatology Resident Training, Experience, and Comfort Prescribing Phototherapy

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Background: Phototherapy is underused. In-office phototherapy is underused due to cost and inconvenience. Home phototherapy may be underused due to lack of education on its use and benefits. Phototherapy is taught to residents more in Europe, but in the United States (US), resident knowledge of phototherapy is lacking. The purpose of the study is to determine the amount of training dermatology residents in the US receive on home and office phototherapy.

Methods: Residents were surveyed on their exposure to prescribing in-office and home phototherapy and their comfort level with prescribing the treatments. Botulinum toxin and radiation therapy were used as positive and negative controls, respectively. An email with the questionnaire link was sent to program coordinators asking to forward the email to their residents.

Results: 58% reported didactic training for in-office and 19% for home phototherapy, compared to 87% for botulinum toxin and 9% for radiation therapy. 58% and 7% have observed in-office and home phototherapy prescribed more than 10 times, compared to 63% and 6% for botulinum toxin and radiation, respectively. 57% and 3% have prescribed in-office and home phototherapy more than 10 times, compared to 28% and 2% for botulinum toxin and radiation, respectively. Satisfaction with their education in prescribing phototherapy is correlated with prescribing both in-office ($r = 0.71$; $p < 0.0001$) and home phototherapy ($r = 0.50$; $p < 0.0001$). 37% were comfortable prescribing in-office phototherapy, compared to 7% for home phototherapy (23% for botulinum toxin and 2% for radiation therapy).

Conclusions: Residents satisfied with the education they receive on prescribing phototherapy are more likely to prescribe office and home phototherapy, but less than one-fifth and a little over half receive didactic training on prescribing home and in-office phototherapy, respectively. To address underuse of phototherapy, programs can consider adding more training on prescribing it.

Improving faculty-to-resident feedback

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Background: Frequent and specific faculty-to-resident feedback is essential in the learning and development of residents during training. Feedback enables learners to monitor their progress and provides direction for improvement. Studies show that medical students and residents feel they do not receive enough effective feedback. We sought to demonstrate an improvement in faculty-to-resident feedback via a bundled intervention focused on faculty training.

Methods: Approval was obtained from the Mayo Clinic IRB. A survey to assess the quality of faculty-to-resident feedback was administered to the faculty and residents of the Department of Dermatology at Mayo Clinic, Rochester MN, before the intervention was implemented. The intervention composed of a presentation to the faculty on effective faculty-to-resident feedback, a compilation for each faculty of their written feedback to residents in the past 12 months, a reminder presentation at 3 months after study initiation, and daily reminders on faculty clinical calendars to give verbal feedback to residents that they worked with that day. The survey was readministered 6 months after starting the study for measurement of improvement.

Results: There were 25 faculty and 22 residents who answered the pre-survey and 28 faculty and 14 residents who answered the post-survey. Faculty who gave feedback multiple times throughout the rotation improved from 36% to 48%. Faculty who gave specific and behavior focused feedback improved from 12.5% to 25%. Verbal feedback to residents improved from 14% to 36%. Residents who felt that they were receiving adequate written feedback improved from 45% to 57%.

Conclusions: Our study demonstrated improvement in frequent and specific faculty-to-resident feedback after a 6 month intervention consisting of faculty based teaching and reminders. This experience may be beneficial for other residency programs seeking to improve feedback between faculty and residents.

Patient Perceptions of Workplace Based Formative Assessment

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Workplace based formative assessment (WBFA) is a useful clinical tool that documents residents' observable behaviors, encourages learning from clinical experiences through feedback, and brings faculty into the room with the resident and patient. Patients participating in medical student interactions feel they contribute to the students' education. However, it is unknown how patients perceive their participation during WBFA, with the attending and resident. The objective was to explore patients' attitudes, beliefs, and feelings about WBFA. All patients with WBFA performed during the visit were invited if he/she consented, was competent, and able to read and understand English. The survey instrument was developed based on the existing literature, pilot tested then revised. The final survey was an anonymous 11-item survey. Responses were collected on a 5-point Likert scale from strongly agree to strongly disagree. Completed, anonymous surveys were placed in secure box after visit. Responses were clustered into 3 groups based on rating of WBFA experience: neutral, positive or negative. Positive responses included agreement or strong agreement from positively worded items and disagreement or strong disagreement from negatively worded stems. This was reversed to ascertain negative responses. Neutral responses were unchanged. Forty-four patient surveys were collected and

98% of patients felt comfortable with WBFA. Only 2.4% felt the faculty observer was a distraction. All patients stated they would agree to be a part of WBFA at a future appointment. Only a minority of patients had any interest in contributing their opinions about the visit to assessments. This study showed that the vast majority of patients have a positive perception of WBFA. Many patients feel they are helping resident physicians by participating in WBFA.

Perspectives on Dermatology Grand Rounds: A Survey of United States Residency Program Directors, Faculty, Trainees, and Patients

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Background: Dermatology grand rounds (GR) include Patient Viewing Sessions (PVS) during which many trainees and faculty examine several patients and then discuss the cases.

Aims: We sought to understand the practices regarding dermatology GR around the US, as well as the attitudes of dermatology residency program directors, faculty, and trainees regarding the educational value of GR in learning clinical dermatology, humanism, and professionalism. We explored the expectations of patients and their perceptions of PVS before, immediately after, and 3 months after GR.

Methods: Surveys were sent to all the program directors of all ACGME accredited Dermatology Residency Programs in 2011. Patients attending GR at our institution and the PVS associated with the 2011 AAD Summer Meeting were given questionnaires immediately before and after PVS and a delayed mailed questionnaire three months later. Trainees and faculty from our institution were also given questionnaires at GR sessions.

Results: Most program directors, faculty, and trainees strongly agreed that GR is an integral part of resident education (80.9%, 96.3%, 80%, respectively). 98% of patients responded that GR met their expectations in the immediate survey and 80% continued to feel this way in the delayed survey. 83.5% of program directors agreed or strongly agreed that GR were conducted in a humanistic way, however only 47.1% responded that GR carried importance for teaching a humanistic approach to care. While no program directors responded that patients are invited to participate in the discussion after PVS and most faculty and trainees felt that patients should not be present at the discussion, the majority of patients expressed a desire to be involved in this portion of GR.

Conclusions: GR around the US have many commonalities and are generally seen as important by trainees and faculty alike. The patient surveys indicated that GR is a valuable and satisfying experience for patients.

Teaching dermatology to internal medicine residents: Evaluating the effectiveness of an educational intervention and its impact on long-term knowledge retention

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Background: Internists often encounter dermatologic issues, yet studies have shown that internal medicine trainees perform poorly at diagnosing skin diseases, and have suboptimal education in

dermatology. Specifically, there is no published data comparing different educational interventions in dermatology and its impact on long-term knowledge retention in internal medicine residents.

Objective: We aim to evaluate the impact of teaching dermatology to internal medicine trainees, and compare different educational methods on long-term knowledge retention.

Methods: A prospective, interventional study design was used. Trainees of the Internal Medicine residency program at the University of Calgary were randomized into two groups to receive didactic (n=49) or group-based education (n=46). Dermatology teaching was provided once monthly for three consecutive months, with pre- and post-tests administered for each educational intervention. A final test to evaluate long-term knowledge retention was administered three months after the last educational intervention.

Results: Improvement of scores from pre- to post-tests was observed following dermatology education. Near significant difference was found in test scores associated with the first teaching intervention (median pre-test 51% to post-test 55.2%, p-value 0.11, n=13), and a significant increase was found in test scores associated with the second teaching intervention (median pre-test 33.4% to post-test 62.0%, p value 0.02, n=7). No statistical difference in improvement of test scores was observed between didactic teaching and group-based learning methods. No statistical difference was found in knowledge retention test scores between the two educational methods.

Conclusion: This study reinforces the importance of dermatology education for internal medicine trainees. Our findings suggest that knowledge acquisition and retention were improved following dermatology teaching, irrespective of delivery method.

Flipped Dermatology: Incorporating Flipped Classroom Learning Methodologies in a Second-Year Medical School introductory Dermatology Course

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In many medical schools, the traditional curriculum in the first two years places a heavy reliance on faculty lectures followed by review and self-study. In the flipped classroom model, students review course content in advance; class time is then repurposed into interactive sessions in which students actively engage with faculty to demonstrate understanding and apply what they have learned on their own.

We applied this methodology to an introductory second-year Dermatology course, replacing 16 hours of traditional lectures with 42 videos (10-12 minutes each) in the style of Khan Academy (a voice-over explanation as writing and images appear on-screen); five written content summaries; over 200 images; and nearly 200 review questions. In four in-class, interactive learning sessions, students applied their knowledge to 12 clinical patient cases. Pre- and mid-course practice exams highlighted core concepts and benchmarked progress to questions of similar style, difficulty and length as those on the course final exam. All course materials were prepared by students, fellows, and faculty at the University of Miami Miller School of Medicine.

The performance of this cohort of students (n=197) was comparable to that of the previous year on the course final exam (91.12% vs 90.92%). A majority (~70%) of respondents indicated that they favor this way of learning to live faculty lectures and/or recordings of live faculty lectures and would be in favor of using this methodology in future courses. 60% of respondents indicated that the in-class, interactive sessions reinforced important content, clarified areas of uncertainty and proved useful to studying; 75%

indicated the patient cases reflected real-world scenarios. Here we describe the structure and content of our flipped second-year medical school dermatology course and demonstrate that this innovative approach can be an effective learning methodology for students.

An assessment of diagnostic and therapeutic skills acquired after dermatology elective

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Objective: To evaluate the diagnostic and therapeutic skills obtained after a dermatology course for second-year medical students

Setting, Design, and Participants: This single-institution, descriptive study at the University of California, Davis Medical School included 107 medical students that were enrolled from 2011-2013. Participants were recruited to answer an online image-based multiple-choice examination on common dermatologic diseases and treatment prior to the dermatology course, immediately upon completion of the course, and 3-6 months following the course.

Outcome measure: The main outcome measure was the difference in test scores prior to the dermatology course (pre-test), immediately upon completion of the course (immediate post-test), and 3-6 months following the course (3-6 month post-test).

Results: The mean scores on the pre-test and immediate post-test were 68.72% and 90.86% ($p = 0.001$). Three to six months after the dermatology course the mean score was 87.94% ($p = 0.172$).

Conclusion: The pre- and post-test scores demonstrate the effectiveness of the dermatology elective in teaching common dermatologic conditions and their treatment. Participants were able to retain the knowledge for 3-6 months following the course.

Integrating dermatology into the first week of medical school: Total body skin exams on cadavers

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Background: Very little time is dedicated to teaching dermatology in medical school yet skin is the largest organ and most easily visualized.

Objective: To create a curriculum integrating dermatology into the first year of medical school.

Methods: Permission was obtained from the anatomy department to allow a team of dermatologists and dermatology residents into the early M1 cadaver sessions to point out interesting skin findings.

Results: The exposure was such a success that we have become a permanent part of the first week of anatomy lab.

Conclusion: Incorporating cadaver skin exams during anatomy lab is an innovative way to integrate dermatology into the first year medical school curriculum.

Underrepresented Minorities (URMs) and Perspectives on Successful Matching to Dermatology Residency

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Underrepresented minorities (URMs), including African Americans, Hispanics, and Native Americans, comprise 30% of Americans but less than 15% of U.S. physicians. Additionally, recent reports show strikingly low numbers of URMs in subspecialty fields like dermatology, radiology and otolaryngology compared to primary care. The reasons for this disparity are unclear. Cohort group interviews (consisting of 15 questions) were conducted with residency applicants who applied through standardized electronic application to the dermatology residency program at the University of Texas Southwestern Medical Center. The cohort group interviews were conducted in 2014 and analyzed using grounded theory. Fourteen residency applicants were interviewed, including four who were identified as URMs. Of the 14 applicants interviewed, 85% (n=12) successfully matched to a dermatology residency program (including 2 underrepresented minority applicants). Major barriers to becoming a successful URM dermatology applicant cited by participants included lack of mentorship, financial constraints, lack of familial support, and cultural differences in the value of education. Applicants agree that increasing the number of URMs would enhance patient-physician relationships. The need for increased and equal representation in all fields of medicine is significant, as multiple reports have shown that minority physicians increasingly provide care for the poor and underserved communities. Programs that promote early mentorship as well as provide and/or identify means to alleviate financial constraints (in the form of scholarships) may help alleviate barriers URM's face in successfully matching to a dermatology residency program.