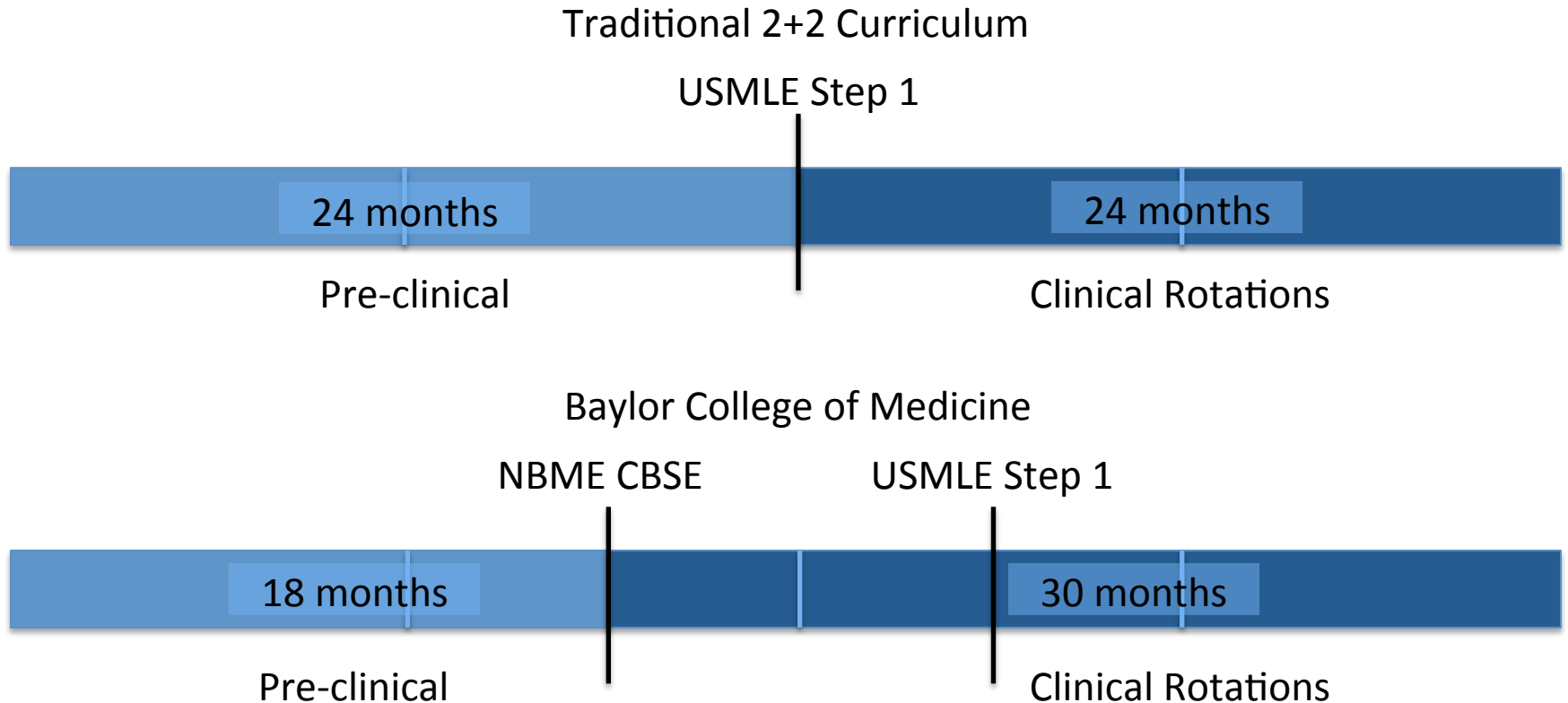


# Utilization of a Dermatologic Basic Science Extra-curricular Supplement in a Condensed Pre-clinical Curriculum

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# Traditional versus Condensed Pre-clinical Curriculum



- More medical schools are moving towards a condensed pre-clinical curriculum which allows for more rotation time
  - BCM was the only Texas medical school with a condensed pre-clinical curriculum in 2013
  - 5 of 8 Texas medical schools start clinical rotations during MS-2 year now

# BCM does not teach basic science dermatology prior to the CBSE despite that...

The Comprehensive Basic Science Examination content outline includes:

<b>System</b>		
General Principles		25%–35%
Individual Organ Systems		65%–75%
Hematopoietic & lymphoreticular		
Central & peripheral nervous		
Skin & related connective tissue		
Musculoskeletal		
Respiratory		
Cardiovascular		
Gastrointestinal		
Renal/urinary		
Reproductive		
Endocrine		
Immune		
<b>Process</b>		
Normal		25%–45%
Abnormal		30%–50%
Principles of therapeutics		15%–25%
Psychosocial, cultural, occupational, and environmental considerations		5%–10%

# AAD Basic Science Module versus First Aid

## AAD Basic Science Module

### Diseases related to dysfunction of the epidermal layers

- In [psoriasis](#), the rate of epidermal turnover is increased (thickening).
- The accelerated rate of movement through the epidermis doesn't allow adequate time for differentiation, which is recognized as scale.



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## First Aid for the USMLE Step 1 2016

### Psoriasis

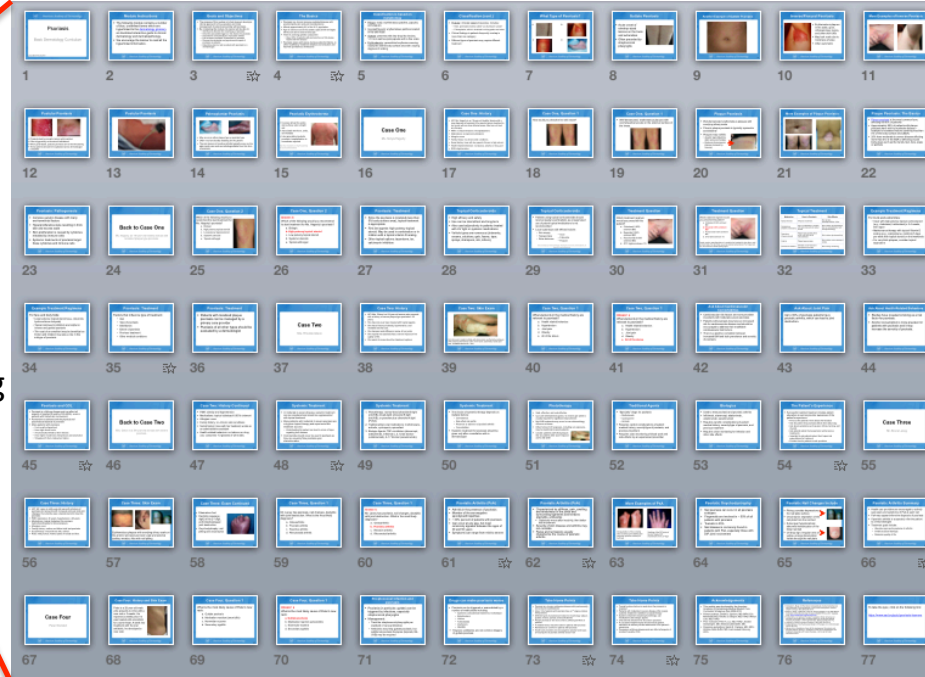
Papules and plaques with silvery scaling **H**, especially on knees and elbows. Acanthosis with parakeratotic scaling (nuclei still in stratum corneum), **Munro microabscesses**, ↑ stratum spinosum, ↓ stratum granulosum. **Auspitz sign** (arrow in **I**)—pinpoint bleeding spots from exposure of dermal papillae when scales are scraped off. Can be associated with **nail pitting** and **psoriatic arthritis**.

# AAD Basic Dermatology Curriculum

1. Acne and rosacea
2. Actinic keratosis and squamous cell carcinoma
3. Adult fungal infections
4. Advanced pediatric bacterial skin infections
5. Atopic dermatitis
6. Bacterial skin infections
7. Basal cell carcinoma
8. Basic science of the skin
9. Benign skin lesions
10. Blisters
11. Blotches: Dark rashes
12. Blotches: Light rashes
13. Contact dermatitis
14. Cutaneous hypersensitivity reactions in children
15. Dermatologic therapies
16. Dermatoses in pregnancy\*
17. Drug reactions
18. Erythroderma\*
19. Evaluation of pigmented lesions
20. Genetic skin disorders
21. HIV dermatology\*
22. Infantile hemangiomas and vascular malformations
23. Infestations and bites
24. Melanoma
25. Molluscum contagiosum
26. Morphology
27. Newborn skin disease: birthmarks
28. Newborn skin disease: rashes
29. Pediatric fungal infections
30. Petechiae, purpura and vasculitis
31. Psoriasis
32. Red scaly rash: The papulosquamous eruption
33. Stasis dermatitis and leg ulcers
34. Sun protection
35. The red face
36. The red leg
37. The skin exam
38. Urticaria
39. Viral exanthems
40. Warts

Two or Four Week Curriculum  
40 Modules

Psoriasis module: 77 slides



# Objectives

- Create supplementary material focused on dermatologic basic science topics that are of highest yield for CBSE or USMLE Step 1
- Create the resource in a way students could utilize it in future years
- Goal: Comprehensive, yet digestible

# Methods

- Supplementary review session
  - December 1, 2015 6-8 pm
    - Optional attendance; outside of normal class hours
  - One hour of topics on dermatology
  - One hour of topics on rheumatology
- Microsoft PowerPoint slide set
  - 61 slides
- Peer-to-peer teaching

# AAD Basic Science Module versus First Aid

## AAD Basic Science Module

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## First Aid for the USMLE Step 1 2016

### Psoriasis

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# Our Presentation



## Psoriasis

- Papules and plaques with **silvery scaling**, esp. on knees and elbows
- ↑ stratum spinosum, ↓ stratum granulosum
- Pinpoint bleeding spots when scales are scraped off = **Auspitz sign**
- Skin lesions on lines of trauma = **Koebner phenomenon**
- Can be a/w nail pitting and **psoriatic arthritis (HLA-B27+)**



# High Yield Clinical Images

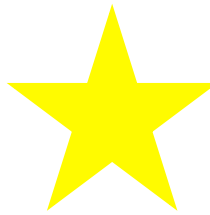
## Dermatomyositis



## Basal Cell Carcinoma



# Rashes of Infectious Diseases



<b>Parvovirus B19</b>	“slapped cheek” → reticular on body
<b>Measles</b>	Koplik spots in mouth, face → body
<b>Rubella</b>	Forchheimer spots on soft palate, face → body
<b>Acute rheumatic fever</b>	Trunk, upper arms, legs, almost never face
<b>Varicella</b>	Itchy vesicles on body
<b>Zoster</b>	Painful, dermatomal distribution
<b>Herpes</b>	HSV 1 – face, HSV 2 – genitals
<b>Syphilis</b>	Chancre: initial painless ulcer Secondary syphilis: trunk, palms, soles
<b>Chancroid</b>	<i>H. ducreyi</i> , painful genital lesion
<b>Lyme disease</b>	Erythema migrans, “bull’s eye rash”
<b>Rocky Mountain Spotted Fever</b>	Ankles and wrists → palms and soles → limbs → trunk

# Erythema Migrans of Lyme Disease



## Cause?

*Borrelia burgdorferi* (spirochete)  
transmitted by infected Ixodes  
tick

## Treatment?

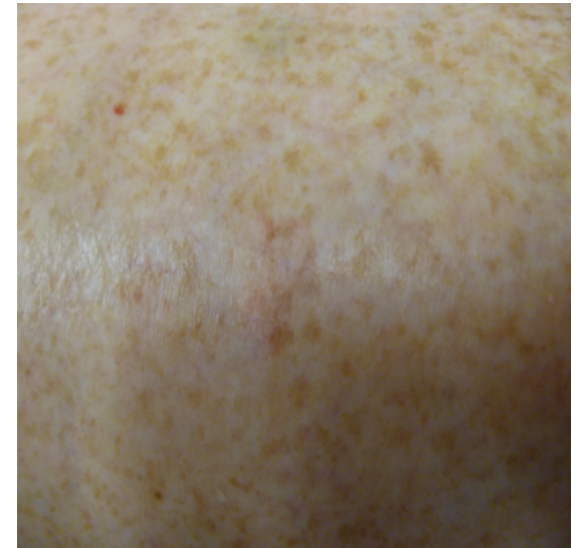
Doxycycline\*, amoxicillin, or  
cefuroxime

\* Contraindicated in pregnant women &  
children <8 years

# Clinical Vignette Questions

A 30 year old woman presents with numerous light brown macules concentrated on her bilateral cheeks and dorsal arms. She reports that the lesions have been present since childhood and slightly fade in the winter months. Past medical history is significant for atopic dermatitis. Her uncle was recently diagnosed with melanoma, which caused her to be concerned about her skin lesions. What is the mechanism of hyperpigmentation in this patient's condition?

- a) Sun-induced melanin production by a normal number of melanocytes in the basal cell layer
- b) Melanin production by hyperfunctional melanocytes stimulated by estrogen
- c) Benign linear hyperplasia of melanocytes in the basal cell layer
- d) Proliferation of nevus cells within the epidermis
- e) Increased melanin content within keratinocytes due to *NF1* gene inactivation



# Conclusion

- Attendance: 84 of 185 students in the Class of 2018
- Review session was well received
- All MS-2 students were provided the slide set afterwards for review purposes
- This year: pre- and post-test surveys

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