UTAH DERMATOLOGY SOCIETY

## MESSAGE FOR LEADERSHIP GROUP – Giants in Dermatology

**Each of us has greatly benefitted from the mentors, advocates, and leaders we were privileged to work with in getting to our current dermatology practices. Medicine has long had the tradition of selflessly giving back to the next generation of caregivers, sacrificing time, energy, and efficiency to train those who are upcoming in the same way that the outgoing providers were generously assisted. I see so many examples of you all following this practice of lifting where you stand. Thank you for your contributions and efforts to support our amazing specialty.**

**In this edition, we get to hear from one of the true giants in dermatology. A contributor in every sense of the word, Dr. Krueger has dedicated his career to advancing our field in innumerable ways. Dr. Krueger, you are an absolute legend and leave an impact on our field too great to fully measure.**

**I think you'll greatly enjoy his words and wisdom in the spotlight section below. As you enjoy, contemplate ways you might give to the advancement of dermatology in your own way.**

**We hope you enjoy this edition of the newsletter. Please feel free to participate in the trivia question below for a chance to win the gift card (we had no participates last issue ☹)! We are looking forward to seeing many of you at our next annual meeting, April 7th-9th 2022 in Moab!**

**Warmest regards,**
**Jim Macdonald, MD**

## MEMBER SPOTLIGHT – This quarter's member spotlight is Gerald Krueger, MD – Professor of Dermatology at the University of Utah – Specialized in Psoriasis

**Tell us about a foundational experience from dermatology residency:**

My foundational experience has a very brief description: Keep my eyes and brain open to opportunities and take advantage of each that comes to my plate.

I was unable to sort out foundational experiences that came to me while I was training vs. not in training. If you are in a growth aspect of medicine, research, you appreciate that it is a continuum. What follows are some highlights of my academic career.

I was honoured by the National Psoriasis Foundation (NPF) with a Lifetime Achievement award at their 50th Anniversary Gala in New York City on June 8th 2017. This caused me to reflect on the my career. First why did I come to be associated with the NPF for a great deal of my career? Because I was asked by their new director Gail Zimmerman. I have had long association with this outstanding organization, dedicated to research and education of psoriasis. The

NPF has been a critically important part of my professional and personal life; I thank you! Basically I am being honoured for 45 years of seeing opportunity, grasping it, and taking it home. It is most humbling to be honoured for doing what I truly have enjoyed.
**TO READ MORE ABOUT DR. KRUEGER'S AMAZIMG LIFE AND CAREER PLEASE SEE PAGE 4**

## PEARLS AND GEMS

- **Ketotifen and Famotidine to treat melasma: J Eur Acad Dermatol Venereol. 2022 Feb;36(2):e123-e125**
- **Upadicitinib vs Dupilumab in Atopic Dermatitis: Head to Head RCT - JAMA Dermatol. 2021 Sep 1;157(9):1047-1055.**

## SOCIETY UPDATE – UPCOMING ANNUAL CONFERENCE

There are only TWO WEEKS left to register for the 2022 Annual Conference. Registration ends on **March 2, 2022.** Please visit utahderm.com/meeting-information to register.

We have a great line up of speakers this year featuring:

- **Luke Johnson, MD -** UofU School of Medicine Assistant Professor and Co-Host of Dermasphere: The Derm Podcast
- **Michelle Tabox, MD -** Texas Tech University Health Sciences Center Assistant Professor and Co-Host of Dermasphere: The Derm Podcast
- **Whitney High, MD -** Director of Dermatopathology at the University of Colorado School of Medicine
- **Jerry Brewer, MD -** Director of Micrographic Surgery and Dermatologic Oncology at Mayo Clinic, Minnesota
- **Kristina Duffin, MD -** Professor and Chair of the Department of Dermatology at the University of Utah

We invite you all to attend and encourage you to bring your families. Moab will be beautiful with fun things to do around the hotel and the surrounding national park.

## AAD UPDATE

**25 modifier is under threat:** The Massachusetts Joint Committee on Financial Services heard testimony prohibiting plans for reducing the payment for evaluation and management (E/M) or procedural services that are otherwise covered services solely because the provider also billed other health care services on the same day. H.4268 would preserve a patient's ability to have multiple issues treated by their dermatologist during the same office-visit. Please let us know if you have had any 25 modifiers denied.

**AADA Advocates to CMS on No Surprises Act Interim Final Rule:** The AADA objects to the Interim Final Rule interpretation of in-network rates as the sole benchmark and calls on CMS to allow the IDR entities serving as arbitrators to consider all allowable information submitted by the parties as permitted by the NSA statute.

**Legislation Provides Relief from Medicare Payment Cuts:** While this bill did not provide the relief that the AADA and the physician community had been seeking, the legislation does represent an improvement over the significant cuts originally slated for 2022.

CALL FOR VOLUNTEERS: We need a volunteer who is attending the annual AAD meeting in BOSTON to attend the State Society Advisory board general business meeting. Meet representatives from ALL state societies!

**State Society Advisory Board General Business Meeting**

**Date: Sunday March 27, 2022 from 2:00 PM – 5:00 PM (ET)**

**Location/Room: Commonwealth Ballroom ABC, Westin Boston Seaport**

## QUICK QUIZ **Please email answers to James Macdonald, MD at macdonjb@gmail.com for a chance to win.**

**Quiz Question:** Which of the JAK inhibitors has been most closely tied to the increase risk of developing nonmelanoma skin cancer? What is the purposed mechanism of this association?

## MEMBER SPOTLIGHT CONTINUED – Gerald Krueger, MD

I was born at home in rural central North Dakota, 17 miles from town. It was March of 1940 in a snowstorm, overseen by neighbor who assisted with birthing of other women in our community and by my father. Because of the ongoing snowstorm, anticipating possible problems, father brought the experienced neighbor to our house. Labor was very long, my father and mother both agree. Father had delivered many calves and lambs, his experience, patience and knowing how to slowly stretch the vaginal orifice caused him to be the "Johnny on spot". My recorded birth weight was 11 lbs 2 oz, small wonder that I made it into this world.

Two years later father bought a place with much more land, rolling hills for pastures and tillable farm land. He wanted to raise cattle, our neighbors were ranchers, he thought it best if we considered ourselves to be farmers, not ranchers. Thus our dress was a cap and lace-up boots. Some years later I learned that he felt ranchers were dumb and famers were smart. Dress accordingly! Parenthetically it wasn't until well after we moved to Utah, 1982, that I bought my first pair of cowboy boots and a cowboy hat. We did not have indoor plumbing until I was age 9 well before our neighbor ranchers. Before that it was and an out-house, weekly tub baths and toilet seats on 5 gallon buckets.

I went to a one-room school house, only 1.5 miles away, single teacher, 5 to 8 students, all grades. I was the only child in my grade. I recall that from the 3rd grade onward when the teacher was working with students ahead of me, it was always more interesting, many times when the teacher would ask the student she was instructing, a question, I would blurt out the answer. Not a good way to be well-liked.

We walked or rode a horse to school most every day unless was really cold. Many days walking was the preferred mode of transportation. Riding a horse meant, getting them from the barn or pasture, putting on a bridle, riding them to school, putting them in the barn put some hay in the manger, easier to walk. In fhe winter cold was always an issue – 100 Fahrenheit, father would haul us at - 250 we did not go to school, once this was no school for 9 days. When my older brother learned to drive we still ended up riding horses or walking but occasionally there was a vehicle that could be used to get us to school. At age 12 I was deemed old enough to take the place of a hired hand, with that my childhood ended. I also learned how to drive all the various vehicles, tractors, to trucks to cars. That year I started to drive myself and my younger brother to school each day. I went on to graduate from grade school with no idea as to what I wanted to be or do. But I was very sure that I was not going to be a farmer or a rancher. Although my older and younger brothers both became farmers, they did wear cowboy hats and boots, they too denied being ranchers, unless they were in the company of only ranchers.

I survived at least 3 life-threating farm accidents before age 16. I did well in high school, graduated as salutatorian from a small boarding school about 60 miles from home run by Seventh-day Adventists.

My first encounter with medicine came 4 weeks before graduating from high school. Classmates were getting the measles, which I already had. Classmates got better but I got sick and then sicker, vomiting and diarrhea. After about 5 days of this I went into tetany, I recall this very clearly. It happened as I was coming back from the bathroom, I collapsed, muscles in my arms, legs and abdomen start to contract. Three 3 classmate had gathered around, not sure what to make of it. They quickly concluded that I had not died, "his eyes are open". "Time to get the school nurse". One look and she also became very concerned of my impending death. She quickly drove me to doctors office 5 miles away. By the time we there the spasms had stopped I was able to talk and walk with assistance. About an 2 hours

later my mother showed up. The doctor quickly said to me, the nurse and a very frightened mother, "Gerald needs to be the hospital". That happened over the next 3 days I got sicker and sicker. On day 4 doctor said we must do exploratory abdominal surgery, he very bluntly said if we don't he is going to die. Did not then say do you have any questions. The next morning I had surgery, the Dr said I had a ruptured appendix with pus everywhere. He elected to not completely close incision because of the drains that were left in place to facilitate drainage of pus. Five days later they were removed. The surgical wound was closed. Everything was on good, I was ready to leave hospital! Unknowingly I was very weak, collapsed to the floor the first time I tried to stand. Two days later I was discharged back to the dormitory, I was very adamant that about not going home, I had final exams and graduation, I was not going to miss that. All of my teachers came to my rescue, gave me an "A" in all my classes without any final exams. After I was in medical school I learned that I had likely become hypo-calcemic secondary to the acid-base shift that went with prolonged vomiting and diarrhea.

After graduation I went on to college expecting it to not be much of a challenge. Did well in high school now, was "time to have some fun". I did sign up for the pre-requisite courses to become, for less than clear reasons, a medical technologist. My hardest course that first year was General Chemistry, at the end of the first semester I was surprised to learn that I had gotten a C. I went to my professor and told him that I needed a B average to get into the medical technology school. I wanted to drop out of college, he said "I will not sign your drop out". You should know that your "C" easily puts you the top third of your class, "well over ½ of the class got a D or less". I then realized that college was not high school, better start to study harder. I got a B the second semester and was asked to be a teaching assistant for general chemistry and did this for the next 3 years of college. Thereafter I got an "A" in all of my chemistry courses. While a teaching assistant I met Merle Pounds a pre-med major, who wanted tutoring in Organic Chemistry. One day as I was tutoring him he suddenly said I have to leave, he told me that he had a job in the hospital as a medical technologist. I said that is what I want to be. His response, "come to work with me this evening, if you still want to be a medical technologist, I need to talk to your parents". The next day I announced I am changing to pre-med; Thank you Merle!

In Medical School, I did well, AOA. My course work made it possible for me spend the last 4 months doing research with Jerald Nelson a fantastic teacher and endocrinologist who really want to be "real researcher". He asked me a question on some a laboratory finding that he did not understand. An 8 AM collection of urine for work-up for hypertension appeared be associated with low levels of 17 ketogenic steroids levels just on the day of getting an IV injection of meglumine iothalamate. Because this only occurred on the day of the IV injection, not on the days before or after and because my chemistry major I said it had to be that the iothalamate was interfering with the oxidation process needed for measurement of 17 ketogenic steroids like that of glucose, a wellknown blocker of oxidation. A few experiments proved this to be the case; the result, my first publication and my appreciation that I wanted my future to focus on academic medicine. Thank you Jerald Nelson MD!

Upon graduation I was really w/o any other specific plans, except to first do an Internship in the US Army, with two mandatory years (all physicians graduating in 1966 were drafted unless they were in the Barry Plan, my indecision cut me out of this). During internship I focused on what I could do that would keep me on an academic track, one that would include understanding molecular medicine. Much sole-searching led me to the field of radiation-oncology. I worked out a residency plan for this, MD Anderson for 2 years followed by 2 years of research at Yale University. With plans to do this after my internship while staying in the Army. In late May of 1967 I got a letter notifying me that was on orders for Viet Nam. Time was not sufficient to alter this, so I said what will be will be. After internship there three 3 weeks of "Basic Training for Doctors, July of 1967. During those 3 weeks, about 700 doctors gathered on the parade field at Fort Sam Houston, San Antonio, Tx, every morning for roll-call. Once completed we were given the command of right face and we all marched off of the parade field. Every morning when I turned right, I was facing a curly headed guy from Brooklyn, I looked him in the eye and

he reciprocated, he then squeezed each palm and that told him he had turned left. He muttered some words, did an about face and our column marched off the field. Same error, every day for 3 weeks! Events transpired to get to know this guy, he changed my life, I learned his name was Robert Katz MD a dermatologist, more on him later.

What follows are a life changing series of events. I made no secret of it I did not want to go to Viet Nam. Those who were in charge of the military strength of the US Army became aware of the fact that anti-war demonstrations were having an impact on manpower. Especially important was the fact that physicians in the ready to deploy elements, 82nd and 101st airborne divisions did not have enough medical doctors to fill the requisite needs, they were at < 50% of full strength. Congress was upset, this prompted action, US Army came to Fort Sam Houston to recruit young doctors, saying "get some excitement your life, join the paratroopers". I asked one question, "Will you cancel my orders to Viet Nam?". The answer was yes! I and about 30 others quickly had new orders, the next day – can't say this never happens in the military. In two weeks we would enter into 3 weeks of paratrooper training at Fort Benning, Ga. I had just finished my internship, heavier than had ever been, 192 lbs and so out of shape I could not believe it.

A long story short, in 3 weeks I was air-borne trained and 163 pounds. I was the ranking officer in our platoon, Captain with an early date of rank entering the US Army right after graduation from medical school, June 1966. The doctors were treated as enlisted, I was the first, in our platoon, to jump out of the airplane, on static line to deploy the parachute onto a jump zone, ≈ 1200 feet to the ground, which you meet up with in about 90 seconds, I did this 5 times in training, and 7 more over the 2 years in the 82nd this to stay current and to get the bonus pay for active duty paratroopers, $110/month. Back to Dr Katz, he got assigned to the Womack Army Hospital at the home of the 82nd Airborne, Fort Bragg, NC.

Fort Benning I was assigned to the infantry of the 82nd, Not much to do I was the officer in charge (OIC) of the Central Dispensary, we had 6 physicians to care for 1200 soldiers, each more fit than they ever had been, all had completed Advanced Infantry and then Paratrooper training. Our dispensary only had room for 4 physicians. I took on a self-assigned duty, triage sick-call everyday. to keep our sanity we arranged it so that 4 of the 5 other doctors were in the clinic 5 days/wk, one of the 5 did not have to report for duty. Sick call started at 7 AM and was over by 9 AM. It was like being a fireman, no fire, nothing much to do. The rest of the day was, for me, learning to fly an airplane, (I did get my private pilot's license), learned to play squash, had mandatory PT 5 days/wk for 1.5 hours/day, running for 40 minutes, then pull-ups, sit-ups and push-ups, and I read a lot and became very knowledgeable about the Civil War.

Shortly after I arrived at Ft Bragg I hooked up with Dr Katz who was working his ass off at Womack Army hospital caring for those on active duty, spouses and families as well as the many qualified civilians living in the area. I asked if I could be in clinic with him for ½ day twice a week. He said sure. I did not tell him that I had single ½ day experience in dermatology while in medical school. He was an enthusiastic teacher and an outstanding clinician. One day he asked me where I was going to do my Dermatology training, I said well I had to put my dream of radiation oncology on hold for at least 2 years, but I was assuming that I could get that activated and that is what I was going to do. He was taken aback. His response was "do you know that most of your patients are going to have a premature death, many as a result of your failed treatments". I responded by saying that I foresaw a quickly emerging molecular understanding in all of medicine and that cancer research would be leading that. His rejoinder was, "yes but they all die!" He went on to say, "regardless of what might come about, skin disease will always have unique advantage, you can see it with your eyes". I told him I was very, very weak relative to skin disorders and was hoping change that by working with him. In a relatively short period of time I became convinced that the ready access, visual and physical, there were genes driving disease processes and because they are going to be defined, we would be moving is now called molecular medicine. As

Bob predicted Skin disorders are leading the way. From ignorance to a career that has met all of my expectations. Thank you very much Robert Katz MD!

**How I became interested in psoriasis:**

I became interested in psoriasis while on Christmas vacation in 1972 when I learned that one could transplant xenogeneic one skin to the back of athymic mice. I immediately recognized that meant it would be possible to transplant human skin to these mice. I outlined for colleagues at Montana University how I would do this with human foreskin. That was successful, my price was that the second colony of athymic mice would be in Utah. Three years later this came about. Then it was what disease should I study? It did not take long, clearly the disease to explore was lesional and nonlesional skin of psoriasis, a genetically driven disease. Typically lesions of psoriasis exist side by side waxing and waning, if you can get them to clear they usually will come back in the same area and with the same morphology. After few years of trial and error we made a seminal discovery; transplants of nonlesional skin took on features of lesional psoriasis, while lesional skin maintained many features of psoriasis. This success caused me to focus on clinical elements of psoriasis, first I had to take good care of my patients as I wanted to take up to 5 postage sized patches 0.3 mm thick of lesional and non-lesional skin. The number of patients I was seeing with psoriasis grew. Some 40 years later a few still come to see me, I always say thank you!

Our findings were seminal, it caused me to say then, and many times since then, “nonlesional skin is psoriasis waiting to happen”. Further, it means that there are elements in the skin that prevent the take-over by psoriasis. Harnessing this knowledge would mean a molecular definition of a “natural” treatment exists right under our nose. Discovery of what this is has been a challenge. Current technology tells me that a treatment based on this concept awaits experiments, (time and money); the NPF is dedicated to supporting ideas such as this.

This observation also launched my now over 45-year career in investigative dermatology, the major focus has been psoriasis, 25 years of NIH support, over 300 scientific papers, 211 of these that are peer-reviewed, nearly 200 are on psoriasis. A major interest in clinical research evolved with this interest. We have participated in over 120 clinical trials for psoriasis, testing many approaches; ranging from heating lesions with ultra-sound, to the being the first to use a “biologic” (Amevive) in a clinic trial for psoriasis, the list is long.

In the early 80’s I met Gail Zimmerman the first full time executive director of the NPF, a relationship that flourished, from our early meeting to her retirement. Highlights are listed:

- 1985-2005, I joined a refurbished Medical Advisory Board (MAB), chair for two terms 1993-2003, now emeritus
- 1994 to 2003, Volunteered to join the NPF board, non-voting status, 2 meetings/year
- 2003 moved to current working emeritus status
- Partial list of projects for a hard working volunteer
    - o Establishing goals and objectives for the MAB with newly recruited science liaisons from the NPF Board, first Tara Rolstad, then Liz Horn and then others
    - o Organized a meeting with the FDA to come up with a better assessment tool
    - o Worked on definitions, what is recurrence, what is a flare, etc o Membership surveys and publications of same
    - o Chair the NPF Research Oversite Committee
    - o Oversight Chair of the Genetics Consortium
    - o Member of Tissue Bank Committee
    - o Assist Michael Siegel PhD, Director of Scientific Affairs NPF in guiding the Scientific and Research Advisory Committees on direction of research, funding of research and guiding the process of evaluating research proposals

Lots and lots of hours and even more professional enjoyment and enrichment.

**If you were to make an art piece to hang on your wall out of a dermatologic condition, what would the image be of (clinical, dermoscopic or histopathologic)?**

This would be a clinical montage of photographs of an evolving and resolving lesion or group of lesions as a function of treatment with first biologic drug to alter our approach to treating psoriasis.

We were very much involved in this revolution to treat psoriasis: Ellis CN and Krueger GG, Treatment of chronic plaque psoriasis by selective targeting of Memory-Effector T lymphocytes A Randomized Phase II Trial of Recombinant Human LFA-3/IgG1 Fusion Protein (Alefacept), N Engl J Med 345:248-255, 2001. This manuscript was seminal as it was the first drug that was designed to treat psoriasis.

**Which dermatologic medication would you want all your family members to take?**

A vaccine that causes warts to resolve and provide immunity, such an agent is on the market but does not alter all of the HPV variants.

**What is the future of psoriasis treatment and care?**

Given that it has a very high heritability index, over 70, is dominantly inherited and very prevalent as high 3% in the US. At this time I do not see a cure. The genes involved in the pathogenesis appear to be complex. We were the first to show that all uninvolved skin has the necessary elements to become a lesion of psoriasis, confirmed by others. It is rare to see a person where all of the skin is involved. It is also rare that there is only one lesion. Thus it is apparent there are elements residing normal appearing skin that keep lesions from forming. Discovery of these factors could result in treatments that would the equivalent of a cure. Markers will emerge that will suggest which treatment will be most effective. Better more specific treatments will come.

**Sum up each decade of your career (i.e. where you were/practice mix/memorable moments) and tell us about which skin conditions were new or memorable from each decade (i.e HIV dermatoses during the 80s):**

For 50 years attention I have focused on psoriatic disease and more recently on hair loss.

- As noted new very effective treatments have emerged for psoriasis. But not for all cases of psoriatic arthritis. More will come, not as a permanent cure, but as noted above, the upregulation of an inherent (“natural”) mediator(s).
- There will be new treatments for hair loss, all that is needed is to drive the pluripotent cells that will cause follicles to move hair out of retirement and going back to doing what they have done for years. Such a reversal will be huge, very huge!!, I predict it will come. Our showing that hair follicles from the scalp of patients alopecia universalis (No hair) for over 7 years will grow terminal hair when transplanted to athymic mice. The follicles came back to “life” the neutral setting of the nude mouse.

**What are your plans for retirement?**

On Dec 30 of 2021 I retired from patient care. I have moved to a phased retirement for all of 2022. During this year I will be mentoring my colleague Bing Feng PhD to stay out of the weeds on his finding markers that will define those patients with psoriasis and psoriatic arthritis.

I also have agreed to facilitate the creation of a research endowment for the I3 (those skin disorders that are characterized by immunology, inflammation and infection) for dermatology.

If covid will stay away and we continue to enjoy good health, we hope to travel, some make-up due us.

**Tell us about 3 pearls you've taken away from your office that apply to all aspects of life:**

One pearl, three steps

1. Discovery depends on the many opportunities, keep eyes and mind open
2. Evaluate these opportunities
3. Pursue, with vigor, the implementation of the best of these opportunities.

**What advice would you give new dermatologists?**

Enjoy the best of the subspecialties of medicine, Dermatology. To really enjoy it; take as you wish but also give back (aka $$$), i.e., make it better -- support research.

**THANK YOU DR. KRUEGER FOR ALL YOU HAVE BROUGHT TO THE DERMATOLOGY COMMUNITY!**