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Editorial

The Inaugural Dermatology Entrepreneurship Conference: Dermatologists and Partners Enriching the Pipeline for Innovative Products

Innovation and technical advances in dermatology are advancing at a robust pace due to an accelerating rate of fundamental scientific discoveries, which are the substrate for fueling healthy product innovation. With dermatologic products and practices experiencing a surge in popularity worldwide, venture capitalists and financial partners are seeking opportunities to invest. This landscape beckons entrepreneurship, providing a fertile ground for those inspired to act. As asserted at the 2015 Dermatology Entrepreneurship Conference by Howard Murad, MD, FAAD, founder and CEO of Murad, Inc., for those interested in entrepreneurship there are resources available, including advice from many: "But don't listen to the naysayers, particularly if one of them is you. If you're really interested, and you have the passion to develop a product or system, give yourself permission to be successful."

Dermatology Entrepreneurship Conference

To help and encourage researchers, clinicians, and other colleagues to take advantage of this favorable climate toward dermatologic product and service innovation, an assembly of the field's top thought leaders, innovators, corporate partners, and investors came together at the Dermatology Entrepreneurship Conference (DEC) to discuss what it takes to enter and succeed in the entrepreneurial world. This inaugural conference took place on March 19 just before American Academy of Dermatology 2015 Annual Meeting in San Francisco and was organized by Advancing Innovation in Dermatology, Inc. (AID). AID is a nonprofit organization founded by dermatologists with a mission to help grow an ecosystem for creating and bringing to market an increased number of innovative and scientifically-based products that substantially improve dermatologic health.

As background on the DEC, AID created and hosts the Dermatology Summit (DS) meeting each January around the JP Morgan Healthcare Conference, where companies and investors gather to learn and exchange ideas about business opportunities in dermatology. Here innovative product ideas have typically advanced to the clinical proof-of-concept or early commercialization stages. As an important complement to the DS, AID launched this year the DEC, which specifically concentrates on what is required during the early phases of product development (Figure 1). The DEC program was structured to cover the two parallel and interacting activity streams that mutually enable progression from idea to product. First, DEC program speakers shared their experience and wisdom on elements of the **technical stream**, including scientific discovery, invention, and translation into the clinic. In addition, the **financial stream** was discussed extensively, including expert panels in the key areas of financing and intellectual property protection. In addition to these educational components, the DEC

also serves as a networking event for cultivating a supportive entrepreneurial ecosystem for its registrants, which numbered over 300 this inaugural year. About one-third of the attendees were women and about one-half were dermatologists. Women's Dermatologic Society past presidents Lynn Drake, MD, FAAD and Barbara Gilcrest, MD, FAAD served on the meeting's Dermatology Advisory Board, which also included Tina Alster, MD, FAAD, Mat Avram, MD, JD, FAAD, Alice Gottlieb, MD, PhD, FAAD, Gary Lask, MD, FAAD, Mark Lebwohl, MD, FAAD, and Ken Washenik, MD, PhD, FAAD as board members.

The Technical Stream

A more robust technical stream for dermatology is being enabled by an accelerating rate of scientific breakthroughs resulting in more in-depth, accurate, and precise understandings of mechanisms underlying skin diseases and dysfunctions. This importantly provides novel targets for product innovation. Keynote speakers featured an impressive roster of dermatologic scientific inventors, entrepreneurs, and business leaders describing the process and path to innovation. Doug Lowy, MD, DABD, Acting Director of the National Cancer Institute and whose research led to the development of the HPV vaccine, told participants that, "A good part of entrepreneurship is doing what needs to be done even when you're not comfortable with it. If you're not an expert in your field of invention, become one." Rox Anderson, MD, FAAD, Professor at Harvard Medical School and MIT and a world-renowned leader in device innovation, counseled that meaningful creation requires "kissing lots of frogs." He suggested that clinicians, though, are very good about knowing which "frogs" have the potential to become "princes".

When it comes to molding an idea into something substantive, getting feedback early on is a key step in taking an idea to a product. Camille Samuels, MBA, a partner with the venture capital firm Venrock and with multiple astute investments in dermatology, encouraged attendees to set aside the notion that your entrepreneurial "baby" must be perfect before you go out and get input. For products not requiring FDA approval Katie Rodan, MD, FAAD, co-founder of Rodan & Fields and its blockbuster Proactiv® product, advised trying to sell your product earlier rather than later to validate your idea and test your distribution channel.

By nature, academics and scientists are accustomed to working alone. However, to succeed as an entrepreneur requires thinking about a different model, which is one that involves other people and the willingness to share the credit. Seth Orlow, MD, PhD, FAAD, Professor and Chair of NYU's Dermatology Department and Senior Advisor with Pharos Advisors, stated "Academics, know your

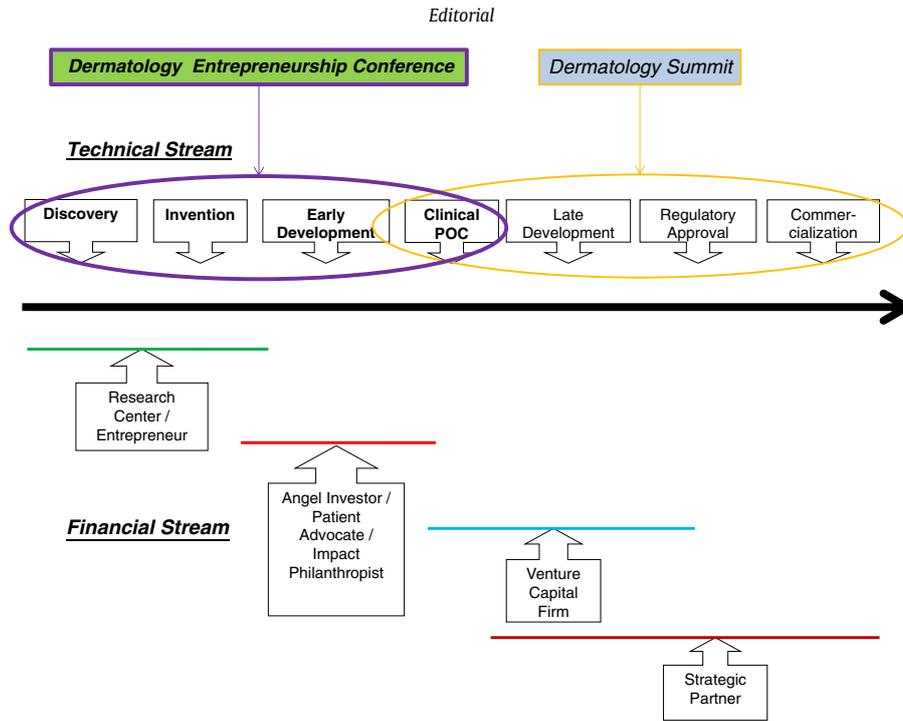


Figure 1. The product development ecosystem. Product development is a complex continuum from discovery through commercialization, which has multiple contributors and stakeholders that must effectively interact. The process involves a technical stream and a financial stream, which are mutually enabling. The *Dermatology Entrepreneurship Conference* and *Dermatology Summit* meetings focus on education and networking for the earlier stage and later stage of dermatology product development, respectively.

strengths. For what you don't know or can't do, find others who can fill your gaps." Dr. Neal Walker, MBA, FAAD, founder and CEO of Aclaris Therapeutics, Inc. added, "Your investors are partners. Choose them wisely for all of their skills and attributes they bring and not just for their money."

The Financial Stream

The financial stream fuels moving an idea to a product. Although dermatology is increasingly accepted as a high-growth area attractive for investment, entrepreneurs still need to know how to package their particular "story" in a way that speaks to and appeals to investors and corporate partners. First and foremost, there must be a case demonstrating to the investors that they can get a desired return on their money. Thus, the would-be entrepreneur must clearly convey how the idea will create value and how this value will be preserved during its product development. For example, it is frequently crucial to show intellectual property protection, and for products needing market registration to define a feasible path to regulatory approval.

The Dermatology Shark Tank

Having the idea for a product or service is only the genesis of entrepreneurship. So how do you take the idea and present the "right" criteria that investors will look at and ultimately choose to sink their capital into? Recognizing the need to educate burgeoning entrepreneurs on the structured processes that shepherd breakthrough ideas towards commercialization, the DEC gave selected applicants the platform to present their ideas in front of renowned panel of venture capitalists as judges. Applicants, who were invited to present information that they considered non-confidential and non-proprietary in this public forum, were divided into two categories based on the level of development: the Dermatology Shark Tank was for products or services at a more advanced stage and a Poster Business Competition was for those at an earlier level.

These two business competitions had submissions in five categories: devices, diagnostics, drugs, over-the-counter products, and business services. Each applicant wrote responses on five topics typically important in a pitch to potential investors. This was designed to be a valuable teaching exercise in the business and commercial aspects of medical products and services, which doctors and scientists are typically not trained to research and analyze. The response categories included the following key areas:

1. **The problem.** Define the dermatologic clinical problem worth solving, the current solutions, and the strengths and weaknesses of the current solutions.
2. **Your solution.** Describe how your solution is it different and explain why it is valuable.
3. **Clinical hypothesis.** Summarize the scientific or technical basis of what you are developing, and briefly provide evidence that supports its approach as useful and feasible.
4. **Product profile and development plan.** Describe the product (i.e. some information of what it is) and what stage it is in (e.g. concept, preclinical, prototype, closed beta, etc.). Also please include the next major milestone (and costs to achieve that milestone) in the product's development.
5. **Value of your solution.** What is your rough estimate of the yearly market revenue potential (and what are some for the basic assumptions underlying that estimate).

Four finalists were selected to "jump into" the Shark Tank for a chance at the \$15,000 cash prize. The winner was "Restoring the Skin Microbiome: Ammonia Oxidizing Bacteria in Dermatology" submitted by Larry Weiss, MD, chief medical officer with AOBiome, LLC. Sixteen finalists were selected for the Poster Business Competition. Two were chosen to each receive a \$2,500 cash prize: "Novel medical device treatment for onychomycosis (room temperature plasma gas)" submitted by Jeffrey Roe, PhD at the startup firm, DeviceFarm, Inc., and "Point of care diagnosis for Kaposi's sarcoma using portable confocal microscopy" developed by Esther Freeman, MD, PhD, FAAD,

with the Department of Dermatology at Harvard Medical School and the MGH.

In summary, this is an opportune time with dermatology well positioned for further development of impactful products. This is the result of a confluence of accelerating strong science as the basis to address unmet medical needs and the perception by investors and companies that dermatology is an attractive field to fund. Given today's environment, it is also a time to cultivate and support young entrepreneurs who have an interest in and understanding of

dermatology business innovation. This is an important concept to us at AID because robust and sustainable pipelines ultimately depend on inspired people to create and move along creative ideas that can fulfill unmet clinical needs. It is this flow of impactful product and service innovations can help ensure that dermatology remains a vibrant field that will continually have better solutions for those seeking care for their dermatologic needs.

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