

# KACS Newsletter Special Edition: Kalamazoo National Historic Chemical Landmark Dedication Event

## Part 1: Introduction:

As reported in KACS Newsletters last year, we're excited that ACS is awarding National Historic Chemical Landmark (NHCL) designation to the 1950-1990 steroid chemistry work of Kalamazoo scientists.

Information about this designation is available in our 2018 news release:

[https://www.prweb.com/releases/kalamazoo\\_valley\\_museum\\_to\\_display\\_american\\_chemical\\_society\\_s\\_national\\_historical\\_landmark\\_plaque/prweb15794300.htm](https://www.prweb.com/releases/kalamazoo_valley_museum_to_display_american_chemical_society_s_national_historical_landmark_plaque/prweb15794300.htm).

And information about the ACS NHCL program is available on the ACS website:

<https://www.acs.org/content/acs/en/education/whatischemistry/landmarks.html>.

To celebrate this achievement, the Kalamazoo NHCL Organizing Committee has been planning a Kalamazoo NHCL Dedication Event for April-May 2019. The committee has been hard at work putting together a quality event program. Details of the program are shown on the KACS Event webpage here:

<https://www.kalamazooacs.org/event/2019/05/16/chemistry-landmark-dedication.html>.

This KACS newsletter special edition was prepared as a program guide.

NATIONAL HISTORIC CHEMICAL LANDMARK

**Kalamazoo  
National Historic  
Chemical  
Landmark  
Dedication Event  
2019**

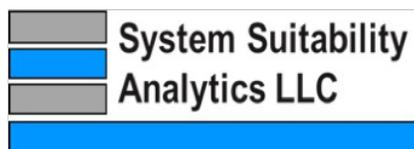
American Chemical Society

**Part 2: Thank You Sponsors:**

Many thanks go to our sponsors, whose generous contributions are making the Kalamazoo National Historic Chemical Landmark Dedication Event possible.



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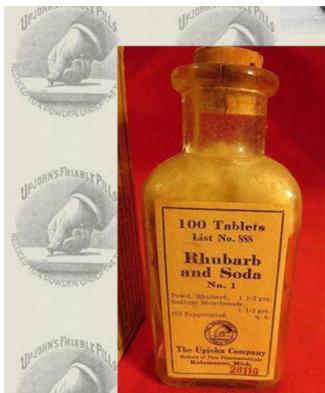
Kalamazoo**VALLEY**™  
community college

### **Part 3: Kick-Off Events**

**14 April 2019, 1:30pm**

**Jeremy Winkworth**

**Most Unusual Products of the Upjohn Company  
Kalamazoo Valley Museum**



Jeremy is a former Upjohn Company scientist, and webmaster of the historical Upjohn website [www.upjohn.net](http://www.upjohn.net). A great deal of the historical steroid chemistry information that was researched for our Kalamazoo NHCL submission came from Jeremy's website. Jeremy's presentation is part of the KV Museum's Sunday Series. More information is available on the museum's website: <https://kvm.kvcc.edu/theater/sunhistoryseries.html>.

**18 April 2019**

**The Story of Steroid Medicines in Kalamazoo  
Pfizer Portage Manufacturing Site**

Dr. John Manski, Director, Process & Product Technology, is organizing a mini-symposium for Pfizer colleagues presenting the past, present and future of steroid chemistry in



Kalamazoo. John is an original member of our NHCL Organizing Committee. Building on the historic steroid chemistry work of Upjohn Company scientists, Kalamazoo Pfizer scientists continue today making breakthrough discoveries. Because of the proprietary nature of the work that will be presented, this symposium will not be open to the public, but all Pfizer colleagues are highly encouraged to attend. Please contact John Manski for more information.



**16 May 2019, 1-3pm**

**Open House**

**Bridge Organics Co.**

**311 W. Washington St., Vicksburg, MI 49097**

Our good friends at Bridge Organics are celebrating the NHCL Dedication by throwing an open house. Stop by their facility in Vicksburg to see the latest in chemistry R&D going on in Kalamazoo. And take the opportunity to meet and speak with some of the chemists who were involved in the landmark historic steroid work. For more information, contact Bridge by phone at: (269)649-4300 or via their website at: <http://bridgeorganics.com>.

## Part 4: Landmark Dedication Reception and Dinner

16 May 2019, 6-10pm

Recognizing the 1950-1990 Kalamazoo Steroid Chemistry Work

Kalamazoo Radisson Hotel, 100 W. Michigan Ave., Kalamazoo, MI 49007

Arcadia Ballroom

What's the first thing our NHCL Organizing Committee decided that we should do to celebrate the Kalamazoo Landmark designation? Throw a party. With opportunity to get together with friends, family and former colleagues of the Kalamazoo chemistry community, to recognize and honor this achievement.

This May 16<sup>th</sup> dinner and reception at the Radisson is that party. We will be having a buffet dinner and cash bar. And we're excited with the special guests that have agreed to make presentations.



Mr. Don Parfet:

The evening will be MC'ed/hosted by Mr. Don Parfet. Don, founder and general partner of The Apjohn Group LLC, retired Upjohn Company officer and great grandson of Upjohn Company founder, William E. Upjohn, is an original member of our NHCL Organizing Committee. In fact, he's been an enthusiastic supporter of this initiative since the very beginning, pre-Organizing Committee, and has been a major driving force for the initiative's success. We are very fortunate that he is willing and able to be the Master of Ceremonies for this event.

Dr. Peter Dorhout:

We're also fortunate to have coming to Kalamazoo, representing the ACS National Office, Dr. Peter Dorhout. Peter is the ACS Immediate Past President, having been President of the organization in 2018. Peter is also Vice President for Research at Kansas State University. He will be speaking to us about ACS and the ACS National Historic Chemical Landmark Program.





Dr. Edward J. Hessler:

We're extremely pleased that Dr. Edward J. Hessler has agreed to attend and speak about the Kalamazoo steroid chemistry work. Ed, currently President of Bridge Organics, was Vice President and General Manager of The Upjohn Company's Fine Chemicals Division in 1990. As a synthetic chemist at The Upjohn Company, he was directly involved in the steroid chemistry work in the 1980's, including synthesis of corticosteroids from 17-keto steroids. With his first-hand experience and knowledge, Ed is the perfect choice for helping us remember the landmark steroid chemistry.

Dr. Eric Matteson:

When we submitted the NHCL application in 2017, ACS asked if there were any related significant anniversaries that would be occurring about the time of our 2019 planned dedication event. The one that stood out is that 2019 is the 70<sup>th</sup> anniversary of the 1949 Mayo Clinic studies that demonstrated cortisone was a safe and effective medicine, for treating inflammatory diseases like rheumatoid arthritis. It was that medical breakthrough that sent The Upjohn Company in earnest, down the path of steroid chemistry discovery and product development. Given that anniversary, our Organizing Committee thought it would be great to have our keynote presentation come from someone familiar with the Mayo Clinic work.

Enter Dr. Eric Matteson, M.D., of the Mayo Clinic College of Medicine, Division of Rheumatology and Department of Health Sciences Research. Upon finding that Eric is co-author of a very interesting paper entitled: Rheumatology Practice at Mayo Clinic: The First 40 Years – 1920 to 1960 (*Mayo Clin Proc.*, 85(4), e17-e30, April 2010), which discusses the Mayo cortisone work of the late 1940's, we reached out to him regarding potentially being our keynote speaker. To our great pleasure, turns out Eric did a residency in Kalamazoo early in his career, and he immediately agreed.



Eric's keynote presentation will be: The Discovery and First Use of Cortisone for Rheumatoid Arthritis at Mayo Clinic. We look forward to seeing him here in the Zoo in May.

## Words of Congratulations:

A number of local chemistry community dignitaries have also kindly agreed to offer some words of congratulations at the dinner/reception, including:

Dr. Catherine Knupp, President of R&D, Zoetis,  
Mr. Ronald Perry, Kalamazoo Site Leader, Pfizer,  
Dr. Robert Gadwood, CEO and CSO, Kalexsyn,  
Mr. Bill McElhone, Director, Kalamazoo Valley Museum, and  
Dr. Tony Taraszka, retired VP, Control Division, The Upjohn Company.



The involvement of so many Kalamazoo chemistry community leaders will truly help make this a special event.

And did we mention the buffet dinner and cash bar? This event provides a great opportunity for some socializing, catching up with friends and colleagues, and making new acquaintances. Attendees will also receive special commemorative mementos.

All this for only \$20 per person (includes dinner, cash bar not included).

**Tickets may be purchased via a PayPal link on the Kalamazoo ACS webpage: <https://www.kalamazooacs.org/event/2019/05/16/chemistry-landmark-dedication.html>. We highly recommend purchasing tickets to this event soon.**

Seating is limited, ticket sales have been brisk, and we need to provide the Radisson a headcount in advance, so will not be able to sell tickets at the door.

A note for those who have already purchased tickets. Your emailed receipt from PayPal serves as your ticket. If you did not save that email, no worries. We will have a list of ticket purchasers for checking in attendees at the Radisson Arcadia Ballroom entrance.

## **Part 5: Landmark Dedication Chemistry Symposium and Ceremony:**

**17 May 2019, 7:30am-4pm**

**Chemistry in Kalamazoo - Yesterday, Today and Tomorrow**

**Kalamazoo Valley Museum, 230 N. Rose St., Kalamazoo, MI 49007**

**1<sup>st</sup> floor Atrium & Mary Jane Stryker Auditorium**

When the Organizing Committee started planning the local dedication event early in 2018, we knew right from the start that it would be a great opportunity to showcase not only Kalamazoo chemistry history, but also some of the excellent chemistry work going on in Kalamazoo today and looking into the future.

We saw a one-day symposium at the Kalamazoo Valley Museum, free and open to the public, with multiple speakers from the Kalamazoo chemistry community as a very special way to help celebrate the National Historic Chemical Landmark Dedication. Our proposal was met with great support.

The theme of the symposium is Chemistry in Kalamazoo – Yesterday, Today and Tomorrow. The morning session will focus on “yesterday”, with presentations covering different aspects of the Kalamazoo 1950-1990 steroid chemistry work. The afternoon session will focus on “today and tomorrow”, with presentations highlighting current and future chemistry work going on in various Kalamazoo industrial and academic organizations. In between the two sessions will be the formal Kalamazoo National Historic Chemical Landmark dedication.

Dr. Thomas Runge

Symposium Organizer and Moderator:

Tom has been involved in the Landmark initiative right from the beginning, helping write our Landmark proposal, providing a letter of support, and recruiting others to write support letters. He has co-lead the NHCL Organizing Committee. And was named the 2019 Kalamazoo ACS Local Section Volunteer of the Year. He is a well-respected chemist and group leader from the Upjohn-Pfizer Chemistry Divisions, who now has his own consulting firm. Tom has put together a high-quality program, with speakers from local chemistry industry and academia.



Symposium Morning Session, 7:30 – 11:00 am

The theme of the morning session is “Chemistry in Kalamazoo - Yesterday”, with speakers focusing on the 1950-1990 steroid chemistry work being honored with the ACS Landmark designation. This session truly has an all-star line-up of speakers.

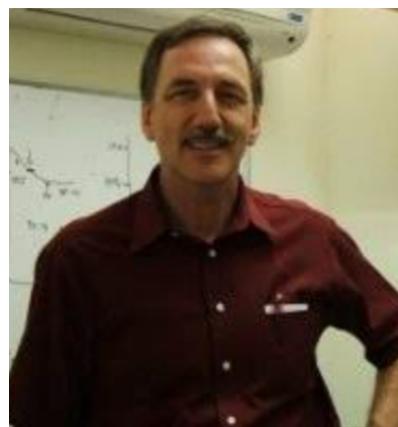


Dr. John McCall:

We are very fortunate that John is willing and able to participate in this symposium, speaking about the historic steroid medicinal chemistry. John was a part of the Upjohn Medicinal Chemistry group in the 1980's responsible for developing next generation steroid medicines. He went on to positions of increasing responsibility with Pharmacia and Pfizer before starting his own consulting firm. John holds 54 US patents and has over 60 technical publications.

Dr. J. Greg Reid:

We're also fortunate that Greg can participate. Greg worked in Chemical Development at Upjohn, then co-founded American Advanced Organics, before moving on to his current position, Principal Consultant at ChemDev Solutions. Greg's expertise in solving important technical problems in chemical processes makes him who we want to speak about the historic steroid process chemistry.



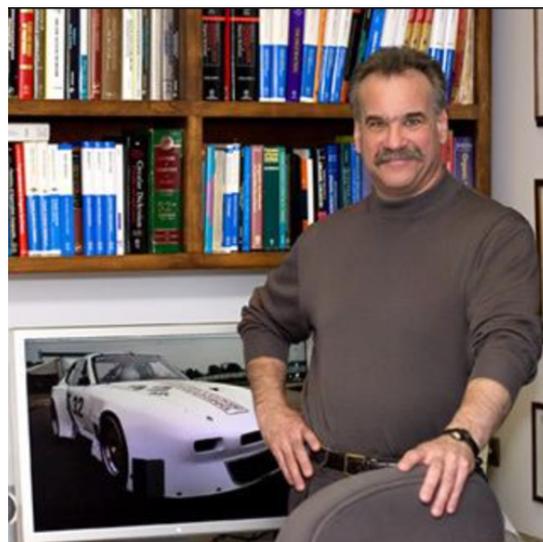
Dr. William Kovats:

We're also happy that we were able to convince Bill to speak about the historic steroid process engineering. Bill was a chemical engineer in the Upjohn Fine Chemicals group, and most recently just retired from his position as Director, Process & Product Technology at the Pfizer Kalamazoo (Portage) Site. Bill has been involved in this landmark initiative from the start, helping prepare our submission to ACS. Check out Bill in 1990 helping install the hydrocortisone sculpture outside Building 91 at the Portage site.



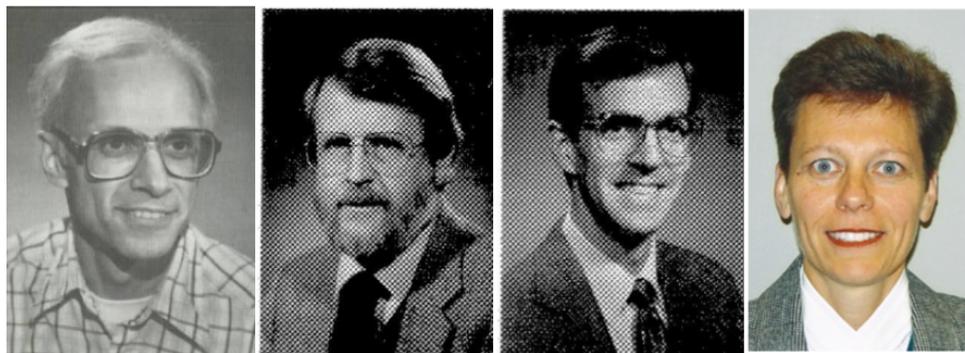
Prof. Scott E. Denmark:

From the very beginning of planning this symposium, we knew who we wanted as the keynote speaker. And we're very pleased that Scott accepted our request. Scott, who is a Fellow with the American Chemical Society, the Royal Society of Chemistry and the American Academy of Arts and Sciences, has a long, connected history with the steroid chemistry work being recognized. He worked as a consultant for Upjohn during the 1980's making valuable contributions to synthesis of new steroid medicines. He got involved in this landmark initiative right from the start, writing a letter of support for our nomination package. The importance of steroid chemistry to the field of organic chemistry in general is discussed in Scott's recent paper: Organic Synthesis: Wherefrom and Whither? (Some Very Personal Reflections) (*Isr. J. Chem*, 58, 61-72, 2018). We look forward to Scott's presentation entitled: The Gleanings and Impact of Steroid Research on Chemistry and Society.



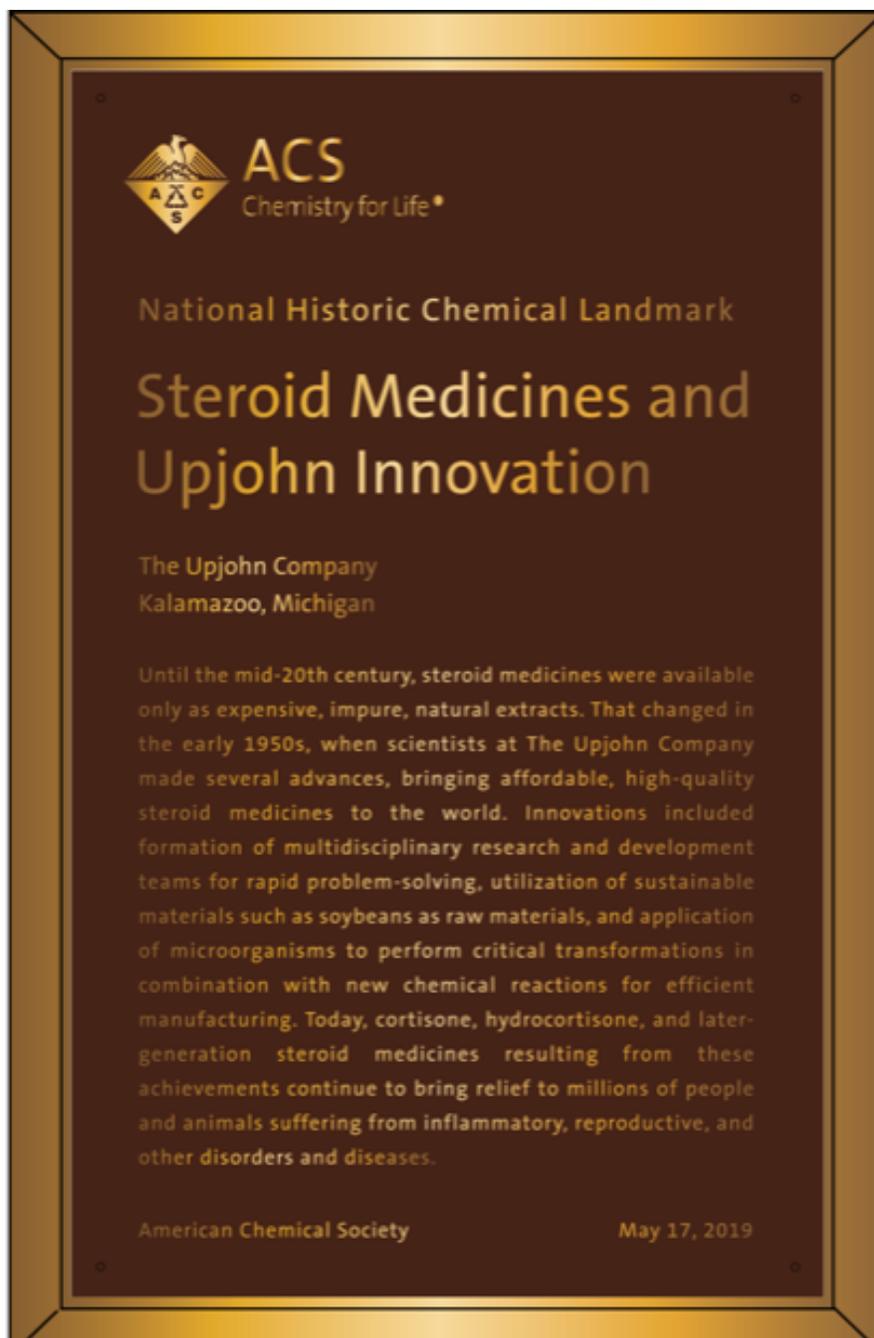
Dr. Frederick J. Antosz, Dr. Tom Miller, Dr. Verlan VanRheenen, Dr. Jay Campbell, Doris Scheffel Symonds:

Among the innovations being recognized with this historic chemical landmark designation is the formation of multidisciplinary research and development teams for rapid problem-solving. We will be finishing out the symposium morning session hearing from five scientists who were involved in those teams in the 1970's and 1980's. This panel discussion on analyst, chemist, microbiologist, engineer & business team culture, courtesy of Fred, Tom, Verlan, Jay and Doris, is entitled: Steroid Stories.



Official National Historic Chemical Landmark Dedication, 11:00 – noon

Between the symposium morning and afternoon sessions will be the formal National Historic Chemical Landmark dedication ceremony, with dignitaries from the American Chemical Society and the Kalamazoo Valley Museum on hand. And as special guests, Mayor Bobby Hopewell of Kalamazoo and Mayor Patricia Randall of Portage. The dedication will take place in the museum atrium, and will involve presentation of the NHCL bronze plaque to the museum for permanent display. This ceremony is open to the public, and it would be outstanding to have a crowd on hand.



Symposium Afternoon Session, 1:00 – 4:00 pm

The theme for the symposium afternoon session is “Chemistry in Kalamazoo - Today and Tomorrow”. With speakers showcasing current and future Kalamazoo chemistry work.

Dr. Carl Deering,  
Pfizer:

Carl is Senior Manager, Process & Product Technology and Senior Research Advisor, at the Pfizer Kalamazoo (Portage) site. Among his wealth of chemistry research experience has been involvement with recent and current steroid chemistry development in Kalamazoo, such as Enviero™, Pfizer’s new green chemistry progesterone.



Kristi Tullis,  
Western Michigan University:

Kristi is a chemistry graduate student at WMU, where she is President of the Chemistry Graduate Student Association. Earlier this year, Kristi was a presenter at the Emerging Researchers National Conference in STEM, in Washington, D.C.

Dr. Timothy Stuk,  
Zoetis:

Tim is a Research Fellow in the Pharmaceutical Sciences Chemistry Department of Zoetis R&D. Tim, a recognized leader in the area of pharmaceutical chemistry research and development, is co-author and co-inventor of numerous chemistry-related technical papers and patents.





Bridget Lorenz Lemberg,  
Forensic Fluids Laboratories:

Bridget is Founder, Laboratory Director and Forensic Toxicologist at Forensic Fluids Laboratories, which specializes in oral fluid drug testing. She is a pioneer and recognized authority in the application of LC/MS/MS for oral fluid sample matrix testing, with numerous published papers on the subject.

Prof. Dwight Williams,  
Kalamazoo College:

Dwight is the Roger F. and Harriet G. Varney Assistant Professor of Chemistry at Kalamazoo College. He is a very popular research advisor and author of numerous papers on natural product and green chemistry applications, his main research interests. Dwight is also a very active member of the Kalamazoo ACS Local Section having graciously served as a Project SEED student mentor annually.



Dr. Donald Berdahl,  
Kalsec:

Don is Executive Vice President of Research Strategy and Chief Technical Officer at Kalsec. He is a well-published, recognized leader in the area of lipid oxidation and antioxidants, and is co-inventor for numerous patents related to food preservation.

Mr. Lloyd Simons,  
Kalexsyn:

Lloyd, who worked previously as a Medicinal Chemist for Pfizer, is currently the Associate Director of Chemistry for Kalexsyn. Lloyd, has been involved in and co-authored papers on numerous synthetic chemistry projects, such as fluoroquinolone antibiotics.



Dr. Tom Nanninga,  
Bridge Organics:

Tom is currently a Senior Scientist at Bridge Organics, and previously worked for Pfizer Chemical R&D. His areas of expertise include process/scale-up research chemistry and route-scouting. And his optimization specialties include organometallic chemistry, precious metal catalysis and symmetric synthesis.

Upon concluding the afternoon session, we're thinking we should all head over to a local establishment, yet to be named, for socializing and networking.

Never before has there been this opportunity to learn about, in one day, the diverse and exciting chemistry research, development and application going on right here in Kalamazoo.

We see this May 17th Kalamazoo Chemistry Symposium being of interest to everyone in Kalamazoo, not only chemists, and hope for a good turn-out. The symposium is free and open to the public. A specially designed pin will be available for all attendees to commemorate the event.

## Part 6: Kalamazoo National Historic Chemical Landmark Organizing Committee:

The journey to gaining National Historic Chemical Landmark recognition for Kalamazoo steroid chemistry work, began in the spring of 2017 when two events coincided unexpectedly.

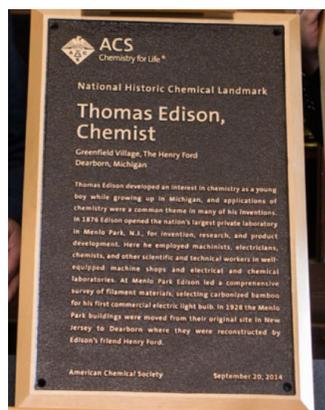
First, was the discovery of a paper published in 1992 in the scientific journal *Steroids* (volume 57, pages 593-616), entitled - *Steroids, the steroid community, and Upjohn in perspective: a profile of innovation*. This well-written article by Dr. John A. Hogg, who retired in 1981 from The Upjohn Company as Director of Experimental Sciences and Therapeutics, reads like a novel explaining in detail the truly innovative, world-class chemistry that was discovered and developed in Kalamazoo from the 1950s to the 1990s.

### Steroids, the steroid community, and Upjohn in perspective: a profile of innovation

John A. Hogg\*

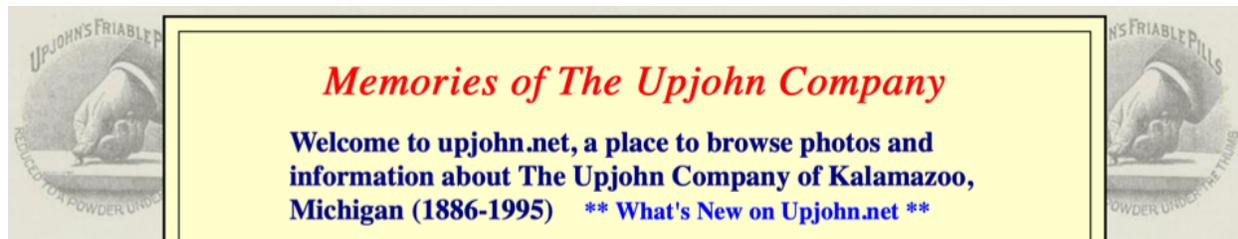
Experimental Sciences and Therapeutics, The Upjohn Company, Kalamazoo, Michigan, USA

The announcement in 1949 at the Mayo Clinic of the dramatic effect of cortisone in alleviating the symptoms of rheumatoid arthritis triggered a competitive worldwide research and development effort directed toward a single goal, the practical synthesis of the rare corticosteroids. The confluence of an extraordinary coalescence of multiple events and circumstances in the growth of the Upjohn Company with the Mayo discovery, inclusive of a pioneering role in the steroid field, conspired to create an environment ripe for innovation. The breakthrough, which gave Upjohn an early competitive edge, followed with startling swiftness. A common mold of the genus *Rhizopus* was found to introduce enzymatically an 11 $\alpha$ -hydroxyl group directly into the female hormone progesterone, which had just been synthesized from the soybean sterol stigmasterol—a one-step solution to the known multistep alternatives for 11 $\alpha$ -oxygenation. Retrospective analysis of this event in perspective with other key developments before and after at Upjohn and in the steroid community reveals a striking profile of ongoing innovation. A parallel scenario in kind was repeated at Upjohn a quarter century later. The sister soybean sterol sitosterol was radically degraded microbiologically and concurrently oxygenated in ring C to produce 9 $\alpha$ -hydroxyandrostenedione, an alternative key intermediate for corticoid synthesis. New chemical processes, highly integrated with existing processes, assured the continuation of Upjohn's leading role in steroid hormone production. (*Steroids* 57:593-616, 1992)



Then second, while viewing the Thomas Edison Menlo Park Lab exhibit at the Henry Ford museum, the ACS National Historic Chemical Landmark bronze plaque there honoring Edison's work was spotted, and curiosity drove learning more about the ACS Historic Landmark program.

These two events happening together created the realization that the Kalamazoo steroid chemistry work should be part of the National Historic Chemical Landmark program. From there, the summer of 2017 was spent researching the past work, putting together a proposal. Much of the proposal content came from John Hogg's review article, and the wealth of historic Upjohn information made available by Jeremy Winkworth on the website [www.upjohn.net](http://www.upjohn.net). The success of the application was due in large part to them documenting and making available that history.



Also very helpful, were letters of support provided by Dr. Edwin Vedejs (University of Michigan) and Dr. Scott E. Denmark (University of Illinois at Urbana-Champaign). The Kalamazoo Valley Museum offering to be the public landmark sponsor was also key. As was support provided by The Apjohn Group.

The application was submitted by the Kalamazoo ACS Local Section in July 2017, and it flew through the ACS National review process with first-round approval coming in November 2017 (providing a testament to the recognized importance of the work). We spent 2018 expanding our planning committee and working with ACS and the Kalamazoo chemistry community, to put together a worthy dedication event and commemorative materials. Now here in 2019, we are very proud to see this National Historic Chemical Landmark dedication recognizing the work of Kalamazoo scientists. We think that all of Kalamazoo should be proud.

Kalamazoo NHCL Planning Committee:

Luke Chadwick (Kalamazoo ACS)  
Linda Depta (Kalamazoo Valley Community College)  
Lydia Hines (Kalamazoo ACS)  
Annette Hoppenworth (Kalamazoo Valley Museum)  
Lexie Kobb (Kalamazoo Valley Museum)  
John Manski (Pfizer, Kalamazoo)  
Bill McElhone (Kalamazoo Valley Museum)  
Don Parfet (Apjohn Group)  
Tomasz Respondek (Zoetis, Kalamazoo)  
Sophie Rovner (ACS National Historic Chemical Landmark Committee)  
Tom Runge (Kalamazoo ACS)  
Steve Seceast (Kalamazoo ACS)  
Ed Thomas (Apjohn Group)  
Mike Walsh (Kalamazoo College)