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NEW BIOLOGY LEADERSHIP



Dear Alumni and Friends,

I am delighted to write to you in my new role as Chair of Biology. In just the past decade, biological sciences has experienced unprecedented technological and intellectual advances from big data management to the sequencing of human genomes. The large data has accelerated our analyses of human disease, neurological disorders, evolutionary origins, and environmental impacts. Our goal is to ensure that the Department of Biology is up to the task with our unique and rich combination of basic and applied research as well as our central role in life sciences education at the University of Iowa. We are committed to preparing the best, most up-to-date biological scientists, healthcare professionals, technicians, and teachers while also

attracting top-flight professors and students. We also strive to obtain significant and sustainable high-value funding. This is our mission as we work to produce outstanding educational opportunities and make STEM research and outreach a university priority.

Our teaching and research are deeply intertwined. Excellence in research not only garners external funds and prestige but also brings state-of-the-art technologies and modern approaches directly into the classroom. Students in biology today have access to high-level hands-on learning in advanced lab courses and research laboratories. I will be working with the faculty and staff to map out and implement a strategy to continue to increase research productivity and innovation, to provide experiential learning opportunities, and to generate prepared and engaged students and citizens. My job extends beyond being the chair of this department and includes both basic research and teaching. As a practitioner, I am in touch with the needs and expectations of the faculty, the students, and the university administration. I am prepared to be the department's voice in all university matters and in all matters of educational outreach. I also look forward to fostering more collaborations, industry partnerships, and outreach.

In closing, I want to thank our previous Chair, Dr. Bernd Fritsch, and look forward to Bernd's contributions as a faculty member in our department. I also want to acknowledge the dedicated service of Tom Koeppel as Department Administrator from 2005-2016. Bernd and Tom helped navigate the Department of Biology through the historic flood of 2008 and an economic downturn, and we all are grateful for their leadership. I have ambitious plans for the future of this department and ask you to join me and my colleagues on this journey by sharing your experiences and insights. Please write to me directly at diane-slusarski@uiowa.edu and plan a trip back to campus if you have not been here in a while. You will be proud of the department today, the faculty, and the students who have followed in your footsteps. I look forward to meeting you when you next visit campus.

Sincerely,
Diane C. Slusarski, Ph.D.

Heidi Van Auken joined the Department of Biology as our new Administrator in March 2016. While in law school at the University of Iowa (UI), she became the Law Bookstore Manager and was later hired as the Assistant Business Manager for the College of Law. Before coming to Biology, Van Auken was the Administrator in the UI College of Liberal Arts and Sciences Division of World Languages, Literatures and Cultures for almost three years. She received a B.A. in English and a J.D. from the UI.



LETTERS OF REFLECTION

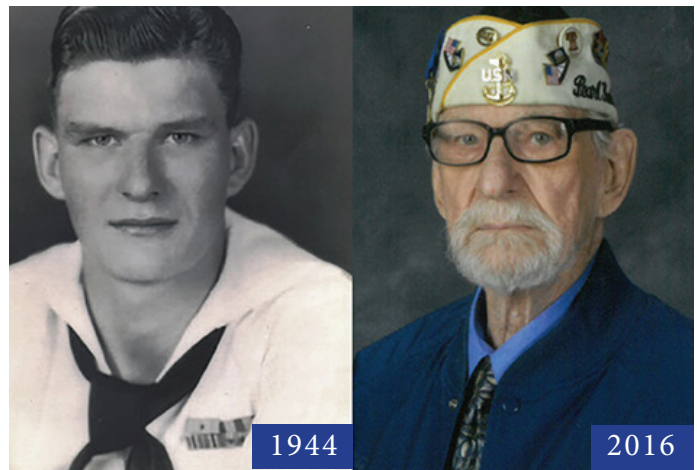
THE AMAZING JOURNEY OF DR. CHARLES SEHE FROM PEARL HARBOR TO IOWA CITY AND BEYOND

Job prospects were bleak when **Charles Sehe** graduated from high school in Geneva, Illinois. So at the age of 17, he enlisted in the Navy. Sehe was stationed on the USS Nevada when the Japanese struck Pearl Harbor on December 7, 1941, and he witnessed ships around him go down in flames. He served on the USS Nevada during other key battles — the assaults on Iwo Jima and Okinawa as well as the Normandy Invasion at Utah Beach. Sehe's WWII experiences would remain with him throughout his life.

After the war, the GI Bill transformed Sehe's life, allowing him to attend North Central College in Illinois and earn a B.S. in 1950. He started graduate studies at the University of Iowa in what was then the Zoology Department, completing his M.S. in 1953 and his Ph.D. in 1957. Sehe was thirsty for learning and as he explains in a recent letter to the department, "Oh, it wasn't ignorance that prolonged my stay at the UI, it was actually the free reign to take any courses of interest, beyond those required for graduation." Sehe remembers walking over the frozen river to attend medical courses in the winter, avoiding the old, unsafe iron bridge and describes his time at the UI as "a ball of coronation."

He benefited greatly from mentorship and guidance from faculty in the department and from members of the community. When his GI Bill benefits ended, Sehe worked for faculty in the department, including Robert King, Harold Beams, Eleanor Slifer, Emil Witschi, and Jerry Kollros. Sehe tended colonies of grasshoppers, rats, finches, and frogs. He also tutored an athletics student and worked as a lab assistant. He recalls with gratitude, "I sincerely admit that this depression-era kid, saturated with war memories, could not have completed his Ph.D. without the university's generous work-study support."

Sehe remembers Dr. Witschi as an excellent thesis advisor but notes that Dr. Kollros had the greatest influence on his life. As Sehe puts it, "Dr. Kollros shaped my life towards a career based on my own initiative and talents." Kollros, whose family emigrated from Europe to America after WWI, also understood the challenges Sehe faced as a returned vet. When survivor's guilt and the aftermath of combat made it difficult for Sehe to stay focused during lectures, Kollros lent a much needed listening ear.

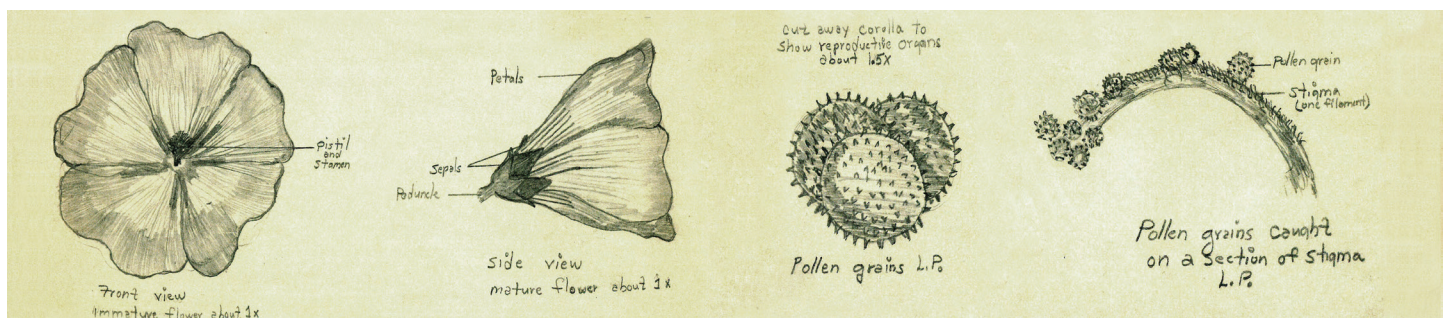


In another letter Sehe reminisces, "I would catch up on my classes by serving as night librarian in the Zoology Library room. I do miss the midnight hours at Hamburg Inn #1 just across from the Zoology Annex. Many of us would quit studying about 11pm and go to Hamburg Inn #1!" Sophia, an elderly woman who worked the Hamburg's grill, would often set aside a bowl of chili for Sehe during those lean years.

Sehe married Lillian Elaine Lysaght of Michigan in 1953. After completing his Ph.D., he taught at the University of Illinois, University of Cincinnati, and his alma mater, North Central College. From 1964 to 1967, he conducted research as a postdoc at Stanford University School of Medicine. He and Lillian returned to the Midwest in 1967, settling in Mankato, Minnesota, and raising five children. Sehe served on the Biology faculty at Minnesota State University, Mankato, until his retirement in 1990.

Sehe struggled for years with the devastation he witnessed during the war. Eventually, he found writing to be therapeutic. In 2008 he co-authored, *Battle Born: The Unsinkable USS Nevada BB-36*, with Peter Wren and is currently working on a memoir. Sehe's story is also preserved through interviews and archives housed at the Library of Congress as part of the Veteran's History Project.

Sehe has received numerous honors as a WWII vet. He was commissioned a Kentucky Colonel in 2010 for his volunteer work to educate middle school students about WWII. He was also awarded the rank of Captain by Senatorial Recognition for his service on the USS Nevada. Sehe reflects that, "This 93-year-old gentleman's homeward journey is near its end" but remains busy preparing to commemorate the 75th anniversary of the Pearl Harbor attack on December 7, 2016.



While students today generate images with high-powered microscopes and computer software, in the 1950s Charles Sehe (M.S., 1953; Ph.D., 1957) used a pen and pencils.

IN REMEMBRANCE



The Department of Biology lost its long-time heart and soul when **Professor Emeritus Eugene (Gene) Spaziani** passed away on June 30, 2016. Gene joined the Zoology Department as an Instructor in 1959, at a time when the Botany and Zoology departments were separate, and remained on the faculty at Iowa until his retirement in 2000. He was officially Chairman of the Zoology Department from 1977 to 1980, but for many of his colleagues, he was an unofficial mentor, adviser, leader, friend, and confidant throughout his and their careers. He was an exemplary citizen of the community, the department, and the University of Iowa.

Gene excelled in each of the roles assumed by dedicated faculty members. His research on the Y organ of the crab was an important model system for investigation of the mechanisms by which ecdysteroid hormones regulate metabolism, as well as the way ecdysteroid biosynthesis is, in turn, regulated by neuropeptide hormones. During his career, he published a total of 68 refereed papers in high-profile scientific journals, chapters in books, and review articles. His research was supported for nearly all of his 40 years by grants from the National Science Foundation (NSF) and the National Institutes of Health. It should be noted that the “unfunded” years occurred during and immediately following his term as chair of the department—a reflection of the responsibilities of the position and Gene’s commitment to meeting those responsibilities. He also served on NSF panels dealing with research grants in regulatory biology and on several panels focusing on the role of research in training of undergraduate biology majors.

His major teaching responsibilities were the highly regarded undergraduate course in endocrinology (002:150) and the accompanying endocrinology laboratory course (002:152). His service to the department, the university, and his profession was recognized by several university and community honors, especially his receipt in 1999 of the university’s Michael J. Brody Award for Excellence in Service. This was a particularly fitting award since Gene and Mike Brody were friends who shared a vision of what a university should be and what a personal commitment to service and research involves.

Even after he retired, Gene continued to contribute his time and energy in service to the university and the community. He served on the Board of Directors of the Johnson County Chapter of the National Alliance on Mental Illness and of the University of Iowa Retirees Association. He was an active advocate for the development of permanent housing for veterans with mental illness. Gene enjoyed playing clarinet in the New Horizons Concert Band and Clarinet Quintet, and he also played jazz with a group called Spontaneous Combustion. In addition, after he “retired,” he wrote *The Hormone Sourcebook*, which provided a user-friendly guide to human endocrinology for the general public. More recently, he wrote a very valuable history of the Department of Biology, *The History of the Biological Science Departments at the University of Iowa: 1855-2012*, which included the founding of the Zoology and Botany departments and their merger in 1992, and the profound changes in research and teaching in the 21st century.

By Gary Gussin, Professor Emeritus

AWARDS



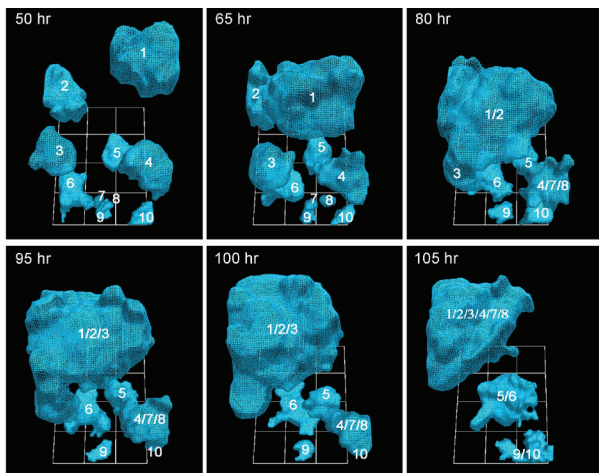
Outstanding Outreach and Public Engagement Award - **Lori Adams** was one of two winners to receive the 2015-16 Outstanding Outreach and Engagement Award from the UI College of Liberal Arts & Sciences (CLAS). This award, chosen by the CLAS Executive Committee, recognizes Adams’ commitment to the many ways she has made public engagement a hallmark of her scholarship, teaching, and service.

Adams joined the Department of Biology in 2010 as a Lecturer, research scientist, and advisor for the Biology Honors Program. In 2012, she became the Program Director of the Iowa Biosciences Academy (IBA), a program funded by NIH that provides underrepresented undergraduate students with research training and support to prepare them for entry into Ph.D. programs in the biosciences. In addition, she is the Executive Director of the Latham Science Engagement Initiative, helping undergraduate students design and implement science outreach and engagement projects. She also participates in several community outreach events through the Department of Biology’s outreach program, “Hawkeyes at the Microscope.”

Collegiate Teaching Award - **Brenda Leicht**, a Lecturer in the Department of Biology, was one of six recipients of the 2015-16 Collegiate Teaching Award from the UI College of Liberal Arts & Sciences in recognition of her exemplary performance as a teacher. This award, chosen by the College’s Teaching Awards Committee, reflects the high esteem with which colleagues and students regard the quality of teaching provided by Leicht and other recipients.

Leicht teaches the introductory Foundations of Biology course and the Advanced Teaching Internship in Biology course, which trains graduate and undergraduate teaching assistants. She is a member of the department’s Curriculum Committee and played an important role in reshaping Biology’s introductory course series. Leicht is co-author of the Foundations of Biology Laboratory Manual and has published several papers on genetics in peer-reviewed journals. Her students regularly praise her accessibility, passion for discipline, and student-centered approach to teaching.





Tumor formation imaged and reconstructed in 4D by J3D-DIAS4.1 software developed by DSHB researchers.

CANCER TUMOR VIDEOS GO VIRAL

Researchers at the University of Iowa's Developmental Studies Hybridoma Bank (DSHB) are capturing the process of cancerous tumor growth in 3-D images, in real time with continuous tracking. Videos show the difference between healthy cells and those that form tumors. These videos begin to unravel the long-standing question of how cancerous tumors form.

The DSHB research finds that cancerous tumors grow when specialized cancer cells reach out to nearby cells, both healthy and cancerous, and then draw them in to enlarge the tumor. This may explain why cancerous tumors contain mainly non-tumor forming cells.

The research also shows that just 5 percent of cancerous cells are needed to form a tumor and that tumor-generating cells move about twice as fast as healthy cells. As lead researcher Dr. David Soll explains, "These cells go out and actively recruit. It's not passive. No one had a clue that there were specialized cells in this process, and that it's a small number that pulls all the rest in."

Researchers published two papers last year, one in *PLOS One* and the other in the *American Journal of Cancer Research*. After coverage in *Iowa Now* and on KCRG-TV9, the findings and associated YouTube videos were picked-up by over 100 blogs and newspapers worldwide, including the *Huffington Post*, *Science Daily*, *Daily Mail*, *Medical Daily*, and many more. In the first two days on YouTube, there were 72,000 views.

The next step is to discover how to slow tumor growth. DSHB scientific staff are now collaborating with the University of Iowa's Holden Comprehensive Cancer Center and Mercy Hospital in Des Moines to screen the DSHB antibody collection for breast cancer and melanoma tumor growth inhibitors.

This article is modified from the original version that appeared in *Iowa Now* on January 25, 2016. For the full article and the videos described above, please visit the DSHB website at dshb.biology.uiowa.edu.