

FACULTY & STAFF PROFILES:

Vernon 'Jack' Shiner

Jack Shiner retired only recently, but he came to IU in 1952, when the faculty size was around 20 and was struggling to develop a strong research presence. Jack had just finished a year of independent research nominally under the guidance of Paul Bartlett at Harvard, and in a short period of time he became well known for his contributions to physical organic chemistry utilizing deuterium isotope effects.

In 1962, Jack became chair and began writing a proposal that would further solidify enormous research gains at IU over that period. By 1966, the faculty size was nearly 45, including administrators like Ward Schaap and Lynn Merritt, who spent most of their time at Bryan Hall. At that time, IU's research reputation had developed so that it was rated 15-20 in the country, judging by publications and grant income. What Jack and other members of the chemistry department and the physics department did was to write a proposal for a "Centers of Excellence" grant. This grant provided for the development of the IU Cyclotron Facility and for expanded hiring of faculty and staff in chemistry for a five-year period. The NSF provided \$5 million and the university was to pick up the salaries after five years. Unlike some other universities receiving this type of grant, IU fulfilled its promise. This is one of the reasons that IU's Department of Chemistry enjoys such strong support in the machine, electrical, computer, and glass shop even today.

Jack's administrative efforts extended to the Office of the Dean of the College of Arts and Sciences. He began in that position during the recession of 1973, a particularly difficult time for U.S. universities. His efforts helped preserve the very strong international reputations of not only the chemistry department, but also the English, German, psychology, and biology departments. The latter was particularly noteworthy because four different departments in Jordan Hall were combined into the current biology department during Jack's tenure. Characteristic of Jack's deep analytical sense was his statement at the time: "What you do in Hard Times is more important than what you do in Good Times."

In 1982, Jack was recruited again to be chemistry department chair when plans for a \$40 million renovation of the Chemistry Physical Plant were to be executed. Jack oversaw the building of the south and east additions, the renovation of the '64 annex, and the renovation of the original chemistry building. Among the many concerns during that effort was the air handling system, which was new for academic buildings, although more or less standard for new industrial labs. A modest, but relatively new, innovation was an ethyleneglycol heat recovery system to increase efficiency.



Vernon "Jack" Shiner

These unselfish efforts were not Jack's only contribution to IU chemistry. His research group, while never large by synthetic chemistry standards, was productive and important in their impact. Hyperconjugation as a stabilizing force for cations received its confirmation in Jack's lab. The characterization of solvolysis reactions, particularly the sequence of formation of intimate, then solvent-separated, then free ions was also confirmed and delineated for particular systems in Jack's lab. The calculation of isotope fractionation factors and the recognition that solvent isotope effects could be characterized by changes in vibrational frequencies due to hydrogen bonding came out of Jack's lab. It is particularly significant that one of Jack's students, Brown Murr, who when he began his independent research career at Johns Hopkins, utilized deuterium kinetic isotope effects to show that solvolytic generation of the 2-norbornyl cation occurred with participation by the beta C-C bond. That is, he showed that the cation was non-classical, thereby settling an important question in the '60s and '70s, long before the development of NMR and theoretical techniques that ultimately provided the same answer. One need only attend the Gordon Conference on isotope effects to witness the enormous esteem in which Jack's scholarly efforts are held. But Jack's scientific interests go well beyond isotope effects. Those of us privileged to know him over the years have profited from his many penetrating questions to seminar speakers in diverse areas of chemistry.

In addition to his scholarly and administrative activities, Jack lent his expertise to the American
(continued on page 14)

❖
*If Harry Day was
the heart of
chemistry, then
surely Jack Shiner
was its head.*
❖

Shiner

(continued from page 13)

❖
Joe Gajewski has described Vernon 'Jack' Shiner to me as a scholar, administrator, teacher, sports car enthusiast, gentleman farmer, and patron of the arts. I concur heartily, but I hasten to add one more word of description: insightful — he hired me!

— RUPERT WENTWORTH



Chemical Society, serving on the Committee for Science (and for one year as its chair) and on the Human Rights and Scientific Freedom subcommittee for the International Affairs Committee, whose chair is Zafra Lehrman of Columbia College of Chicago. Zafra, Jack, and others have collaborated on a new approach to teaching non-science majors chemistry. Zafra pioneered the integration of chemistry and the arts because her college specializes in the latter. On a few occasions, she brought a group of her students to IU to demonstrate their projects, which included a dance of the elements and interesting TV/chemistry combinations. Of all the interactions with Jack, Zafra remembers the time their van transporting students to IU broke down and Jack's willingness to drop all and become their "savior."

Jack's coming to IU had more than the usual number of twists and turns. As a student at Texas Western College of Mining (now UTEP), he developed an interest in organic chemistry, but World War II intervened. After a one-year training period as a radar technician that took him to Chicago, then to Oklahoma, then to Washington, D.C., he finished the war in the Pacific on a destroyer that he helped commission. After finishing his bachelor's degree in another semester, he went to Cornell University, where before the fall semester started he worked at the Agricultural Experiment Station in Geneva, making long chain hydrocarbons to compare with mineral oil used as insecticidal pre-emergent sprays for fruit trees. His PhD work with John R. Johnson revealed the structure of the ketene dimer, a study that involved addition of deuterio methanol to ascertain where the proton added, which then could provide information on the structure. Students might recognize that this was before NMR spectrometers were developed, so analysis for deu-

terium was particularly difficult (think gradient density techniques). It was here that his interest in isotope effects developed, and they matured in a postdoctoral with Sir Christopher Ingold at the University College London and later as a senior postdoctoral fellow in the Bartlett Laboratory.

Jack returned to London on sabbatical twice and was a frequent visitor not only to the United Kingdom, but to the continent as well. He did bring back an early silver E-type (a Jaguar XKE for the non-aficionados of sports cars), a legendary six-cylinder, three-carburetor, beautifully aerodynamic machine that could cruise at 140 mph. Ernie Campaigne swore he would never again accept a ride from Jack after a very fast trip to northern Indiana. Jack recently restored the car, and it sits almost like a museum piece in his garage, although it still occasionally sees the light of day and meets the concrete of the road.

But Jack has a somewhat more sedate side. Those driving Arlington Road between Bloomington and Ellettsville can catch a glimpse of Jack working in a very large garden or tending to fruit trees. Judy Harmony tells of stopping at Jack's place on a Sunday drive and seeing the dean in overalls, which removed him from the ranks of the officious, in her mind. At Jack's side through these many years has been his wife, Reva, who as a dancer in former years has been a patron of the Bloomington Playwrights Project and has contributed an award for writers. Her hospitality, good will, and *joie de vivre* have been enjoyed by many in the Bloomington community.

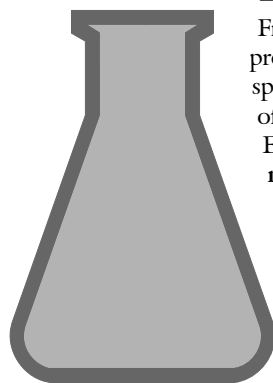
Finally, as famous as Jack is for his many efforts, he will not surpass the fame of the brew named for a small town in east Texas that bears the family name. Shiner Bock Beer is a Texas staple.

— Joe Gajewski

Faculty news

(continued from page 12)

A number of professors emeriti have also been involved in noteworthy activities over the past year. **Frank Gurd** has forwarded from Albuquerque an article in *Biophysical Chemistry*



— co-authored with Fred Richards — that provides a special perspective on the career of their mentor, John Edsall. **Marvin Carmack** has relocated from Arizona back to Bloomington, where he is a lively participant in many departmental and university social functions.

A reception honoring **Ed Bair** took place on the occasion of the dedication of the Edward J. Bair Mechanical Instrument Services facility last December. During a series of lectures on ice physics in Fairbanks, Alaska, last December, **George Ewing** had the misfortune to be in an automobile accident involving a moose, but he has recovered from this incident and is back at work in the lab, doing NSF-sponsored research on the properties of thin-film water and ice. **Lee Todd** recently completed the construction of a fully functional laboratory on his farm in Monroe County, where he plans to pursue some new research ideas.

Evelyn Jabri has left IU to become an assistant editor for *Nature Structural Biology*. **Joe Zwanziger** has relocated to Dalhousie University in Nova Scotia.

— Jack Crandall