



# Portland Section Special Event

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September 2023

## Tom Dunne Memorial Symposium

Honoring Thomas G. Dunne (1930-2020)

Emeritus Professor of Chemistry, Reed College

**Saturday 23 September 2023**

### Schedule

- 3:00–5:00 Symposium in Vollum Lecture Hall (Free, open to the public.)
- [Dan Stack](#) (Reed '82), Associate Professor of Chemistry, Stanford University.  
*Imidazole Ligation Fundamentals: Biological Relevance of Cu(III)?*
  - [R. Kip Guy](#) (Reed '90), Dean & Professor, College of Pharmacology, University of Kentucky.  
*Discovery and Early Development of ATP4 Inhibitor SJ733 as an Antimalarial*
  - [Arlene Blum](#) (Reed '66), Executive Director of the Green Science Policy Institute and Research Associate of Chemistry at University of California, Berkeley.  
*The Six Classes Concept: Tackling Toxics for Healthier Products, People, and Planet*
- 5:00–6:00 No-host reception and social hour
- 6:00–8:00 Dinner ([Reservations Required](#)) in Vollum Lounge
- 7:30 Closing remarks: Arthur Glasfeld, Emeritus Professor Reed College and Chair, Portland Section ACS

Abstracts on page 2; Biography on page 3.

Reed College Vollum College Center  
3203 SE Woodstock Blvd, Portland, OR 97202

[map](#) (use East Parking Lot; Vollum College Center is number 39 on map)

# Abstracts

**Daniel Stack:** *Imidazole Ligation Fundamentals: Biological Relevance of Cu(III)?*

Tao Large, Jasper Ainsworth, William Keown, Linus Chiang, T. Daniel P. Stack

Multinuclear copper centers in enzymes that activate dioxygen such as tyrosinases and laccases are ligated predominantly by imidazoles from histidine residues and are thought to operate exclusively through Cu(I) and Cu(II) oxidation states; no spectroscopic evidence exists for Cu(III) in an enzyme to date. By contrast, synthetic Cu(I) complexes with imidazoles and/or amines react with dioxygen at low temperatures with the majority of products containing Cu(III) centers. This reactivity highlights an unanticipated role of imidazole ligation in stabilizing Cu(III) species.

**R. Kip Guy:** *Discovery and Early Development of ATP4 Inhibitor SJ733 as an Antimalarial*

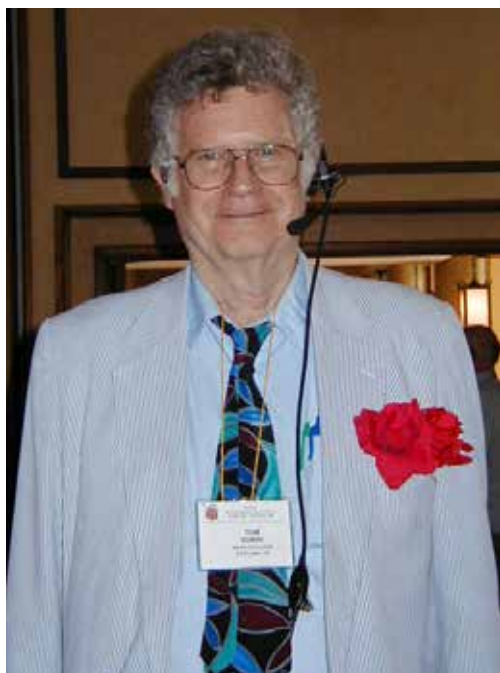
The dihydroisoquinolones (DHIQs), a novel class of antimalarials, were discovered using a phenotypic whole cell screen of erythrocytic co-cultures of malaria. A consortium of researchers in the academic, for-profit, and non-profit sectors developed the dihydroisoquinolone clinical candidate SJ733. In preclinical studies, SJ733 had good potency *in vitro* and *in vivo* and a fast rate of kill *in vivo*; was highly orally bioavailable in mice, rats, and dogs; and had mild toxicology *in vivo*. SJ733 targets ATP4, a sodium-proton antiporter critical for parasite viability in the blood stages and for gametocyte development. Phase 1a clinical studies with SJ733 revealed no serious adverse events or dose limiting toxicities; good oral bioavailability, and terminal half-life of 19 hours. Phase 1b studies in the *P. falciparum* human challenge model showed a fast parasite kill but strongly suggested that curing patients would require at least a 3-day schedule, due to metabolism by CYP3A4. A recently completed Phase 2a trial in Peru demonstrated that SJ733 monotherapy effectively cured blood stage *P. vivax* malaria in most cases at 14-days. This study strongly suggests SJ733 is well positioned to be a fast-acting component in a combination drug for treating malaria.

**Arlene Blum:** *The Six Classes Concept: Tackling Toxics for Healthier Products, People, and Planet*

Arlene Blum's career as a chemist and a climber began at Reed College where she learned chemistry and climbed Mt Hood with Tom Dunne. She is honored to participate in the Tom Dunne symposium!

Arlene is a biophysical chemist, mountaineer, and executive director of the Green Science Policy Institute, whose scientific and policy work protects human and environmental health from harmful chemicals in everyday products worldwide. Arlene also has led successful mountaineering expeditions to Annapurna I and Denali and walked 2000 miles across the Great Himalaya mountains.

In this illustrated talk, Blum shares her favorite images and dramatic stories of her climbs of beautiful high peaks as well as her Institute's scientific research and unique communication strategy to reduce the use of classes of harmful chemicals for healthier people and planet.



Tom Dunne at NORM 99 (Dibblee)

## Bio: Tom Dunne

Tom was born in Los Angeles, Calif. in Oct. 1930. He grew up in the small chemical company town of Westend, California on Searles Lake in the Mojave Desert (many older high school chemistry texts had a section on Searles Lake as a source of many inorganic chemicals including borax, potash, soda ash, sodium sulfate and alkali metals lithium and cesium.)

He went to school in the larger nearby town of Trona and graduated in 1948 from Trona High School. He then went off with three of his high school classmates to UCLA where he received a B.S. in Chemistry in 1952. He attended graduate school at the University of Washington and received his Ph.D. in 1957.



Tom Dunne receives Service Award at ACS meeting 5/9/13 (Dibblee)

Tom took a position in the Central Research labs of IBM in Poughkeepsie, NY. After a few years there he opted to seek an academic position, so took a PostDoc with Professor F. A. Cotton at MIT.

He joined the chemistry faculty at Reed College in Portland in 1963 where he taught a variety of courses, advised many thesis research students, and chaired the Department of Chemistry for several years. He formally retired from Reed in 1995, but continued to teach and advise there for several years following his retirement.

Tom was active in the Reed Emeritus Book Club and also was active in the City Club of Portland. His pastime was reading and

he would read periodicals (Science, C&EN, The New Yorker and others) cover to cover every week, as well as reading or re-reading many classics from the Library.

Tom is a 64-year member of the American Chemical Society, Portland Section. He was an active member of NOR Board, the ACS Northwest Regional Board of Directors and as Board Members Glenn and Jane Crosby said "Tom's manifold contributions to ACS and the Region often are invisible. He doggedly keeps looking for funding, and often his successes go unheralded. Moreover, he is the guy who incessantly prods the Region's officers until the NOR Board does what it should do to operate in a business-like manner. Only a few ACS members in the Northwest have left tracks as wide and deep and for as many years on the ACS Northwest Region Board."

Tom applied his fund-raising skills especially to the Section's scholarship program, which has awarded 152 scholarships since 1968 to outstanding chemistry majors for an aggregate value of over \$307,000.

Tom received the E. Ann Nalley Northwest Region Award for Volunteerism in 2011.

—Patrick Dunne and Martha Dibblee



ACS Director Bonnie Charpentier presenting Tom Dunne with the 2011 E. Ann Nalley Volunteer Award. (Dibblee)