

Department of Chemistry

# Fumes from the Hood

Winter 2014

In a career that has spanned 30 years, Judith C. Giordan, the recipient of the 2010 Francis Garvin-John Olin medalist of the American Chemical Society, has served in executive and leadership positions in R&D and operations at some of the world's top brands.

Today, Judy translates that experience into building the brands and technologies of tomorrow. Currently, she is a Partner in ecosVC, a venture development and funder; Co-founder of the Chemical Angel Network, an angel group looking for seed stage start-ups in the chemical sciences; Managing Director of Steel City Re, LLC, an intangible asset services firm; Senior Advisor to the National Collegiate Inventors and Innovators Alliance; a member of the Board of Directors of several start-up companies, and Professor of Practice in the College of Science and Technology of the University of Southern Mississippi – from which she has completed a detail to the National Science Foundation as Program Director for the IGERT Program. And we are thrilled to announce that Judy has joined us as a Professor of Practice for the Department of Chemistry, starting Fall 2014.

Her research interests are mechanisms to support and foster diversity in science, technology, engineering and math (STEM) and facilitating STEM intensive entrepreneurship, business and economic development. In addition to being a lead investigator in National Science Foundation grants in these areas, Judy has held Visiting and Adjunct professorships at North Carolina State University, Rutgers University and Dartmouth College and has served as a Member of the Board of Advisors of the University of Maryland College Of Life Sciences and the Institute for Strategic Business Markets at Penn State's Smeal Business School. Judy is the author of over 200 articles in the areas of entrepreneurship, career development and leadership, intellectual property monetization, market and operational strategy development and implementation, diversity, polymer chemistry, flavor and fragrance technology, and electron spectroscopy. She is a highly sought out speaker appearing regularly on industry panels and as a speaker at a variety of events across the country.

She has also been included in numerous internationally and nationally based Who's Who Publications, as well as books, studies, and articles on topics including women and diversity, technology, and career development.

Judy received her Bachelor's degree from Rutgers University, her PhD from the University of Maryland in chemistry, and was an Alexander von Humboldt Post Doctoral Research Fellow at the University of Frankfurt in Germany.



## Judy Giordan Joins Department as Professor of Practice

Dear Alumni and Friends,

2014 was a busy year for the Department. After much planning and hard work, the Department formally adopted our strategic plan. We appreciate the important feedback you provided to help shape this document. You will find an insert in this newsletter for the adopted version. The Department has set a long-term, generational (25 years) goal "To become a comprehensive, Top-25 Chemistry Department focused on addressing critical societal issues facing the world today." Thank you in advance for your help and support to achieve this goal!

All the best,  
Rich G. Carter  
Professor and Chair of Chemistry

**Oregon State**  
UNIVERSITY

**3**

UG of the Quarter

**4**

Blue Showcase

**5**Remcho AAAS  
Fellow Award

## Steve Huhn - Chemist 3 NMR

Steve was born a long time ago in Brooklyn NY. Moved away with the great Irish/Italian American diaspora for the safety of the suburban zone known then as NJ. Under cover of darkness they escaped NJ to become cowboys and cowgirls in the nation state called TEXAS. Repatriated back to NJ after only one year in the custody of his parents, he spent the next two decades planning his escape. Leaving NJ by sailboat he wandered up and down the East Coast of the US and Canada with another like minded refugee. Eventually they landed back in NY harbor. From there they split up, hoping to evade detection by our respective families. He then met his future spouse and they moved to MA where he was able to secure longterm employment at Bruker. Spending nearly thirty years on the East Coast they moved to the Golden State where he worked performing all kinds of NMR tasks for Genentech. Finding California just way too costly, they moved to AZ, ID and VT as his wife and he

took turns pursuing their chosen career paths. She is a Math teacher at the high school level.

He started in NMR while working for the Molecular Process group within Physical Chemistry at Nabisco, pretty important sounding job for a cookie company he always thought. When Nabisco purchased a solid state NMR system he stood still while every one else stepped back as they looked for a volunteer to run the thing and so my career was decided. He had always wanted to be an astronaut not a spectroscopist. But maybe they are not so different if you can take the greater probability of dying in the freezing cold vacuum of space, serving humanity and exploring the boundaries of reality out of the equation. Both have lots of computers and dials to turn, So, if he wears a shielded helmet when he is at the NMR it can feel like another planet.

Their luck changed as OSU looked to add a person to the NMR group. He was lucky enough to bluff his way

cont. on page 6

## Shawna Vreeke Lab Assistant

Shawna Vreeke was born and raised in Southern California. She received her Bachelor's degree in chemistry from Cal Lutheran University and moved up to Corvallis this past summer due to her interest in the Analytical Chemistry graduate program at OSU. She applied for the lab assistant position to get familiar with the university and the professors. After earning her PhD, she would like to be part of atmospheric environmental research. In her spare time, she likes to hike with her Shar Pei puppy, Nova, and sew costumes. She is an avid world traveler and has her scuba license.

## Sarah Burton Grad Coordinator

Sarah Burton was born in Gottingen, Germany, but spent most of her childhood in the area around Corvallis. She received a Bachelor of Science in Physical Anthropology with a minor in European History from Oregon State University in 2009 after spending a term in Greece. After moving from Corvallis to Seattle in 2011, she returned home in September of 2014 in order to accept the position of Graduate Coordinator for the Department of Chemistry at OSU. If you are a chemistry graduate student and you have a problem, talk to her.

During her working hours she can be found in Gilbert 153, leaning on her caffeine addiction and organizing the lives of others. In her down time, she can be found perched on a chair at a coffee shop or in a restaurant, still studying history.



## UNDERGRADUATES OF THE QUARTER

### Alex Van Scoyk

Alexandria "Alex" Van Scoyk has been named one of the Fall 2014 Undergraduates of the Quarter. She grew up in Cedar City, Utah, where she attended Cedar High School. Her chemistry instructor, Steven Stephenson (an OSU alumni) sparked her initial interest in chemistry. "He was the very first professor that actually made me work hard in class," she said of Stephenson. It was his push that made her come to Oregon State as a Chemistry major and her discovered love for the lab that has made her stay.

Her favorite class while attending Oregon State has been Physical Chemistry, with Dr. Glenn Evans. She stated that she really liked the way Glenn made you think about the concepts and work hard to get the grades and the way he really wanted the students to learn the material that he so obviously loves. She also talked about Emile Firpo as being a favorite. "He is responsible for solidifying my liking for lab work," she states. She says Emile is probably 90% responsible for getting her into research in the first place. She now works in Dr. David Williams' lab doing what she termed "general stuff."

Alex who will graduate in the Spring hopes to continue on to Graduate School in the areas of toxicology or pharmacology, then come back to academia as a Professor. Currently, Alex is the President of the Chemistry Club. She's also on the College of Science Advisory Council and in the Student Advisory Group. In her spare time, she likes to hang out with her friends, watch movies and sleep. It is students like Alex that make us the great department we are.



### Philip Nguyen

Philip Nguyen has been named our second Undergraduate of the Quarter for Fall 2014. Philip is originally from Oregon City where he attended Oregon City High School. He cites his AP Chemistry teacher, Mr. Taylor for his love of Chemistry. Philip came to OSU to obtain a Bachelor's degree and familiarize himself with the campus and surrounding community before continuing on to Pharmacy school. An after high school job at a Pharmacy made him realize that while he loved the pharmaceutical industry, he'd have a better foundation if he started in Chemistry first, so that's exactly what he did.

Philip's favorite class was CH 361/362: Experimental Chemistry. He said it was this class where he got his first real hands on experience with chemistry and realized that sometimes, your experiments fail. He also stated that he really liked how energetic the instructors were about their teaching and how when something did fail, they used it as a lesson for the class. He has participated in Undergraduate Research for Dr. Paul Cheong since his freshman year. He tells his friends that research is like a homework problem that you can't solve for weeks. "You go in every single day and you work at it, and work at it, and work at it. You finally get an answer, then you realize you did the math wrong, so you go back and keep trying."

Philip plans on applying to Pharmacy school this summer after graduation. He says he feels really integrated into the department and it's someplace he can call home. We're proud to have students like Philip as part of our department.





# BENTON COUNTY HISTORICAL MUSEUM SHOWCASES BLUE DISCOVERIES

Superstition says a bride needs four things on her wedding day: Something old, something new, something borrowed and something blue. Milton Harris Professor of Materials Science, Mas Subramanian provided all four of those things recently to the Benton County Historical Museum for their newest exhibit, Something Old, Something Blue. Something old came in the form of a piece of lapis lazuli shipped all the way from Afghanistan; something borrowed was a reproduction of a cover article written about Mas and his discovery for National Geographic Magazine. Something new and something blue both came in the form of samples of his blue pigment.

This extraordinary blue pigment, discovered by happy accident in 2009, has led to, at last count, two paBlue Pigment Samplestents, three publications and thousands of Google hits for the OSU scientist and his research team. Created by heating manganese compounds to 2,000 degrees, this pigment is heat reflective, non-toxic (unlike other blue pigments) and much more durable and versatile than blues previously discovered. "One day, a graduate student working on a completely different project was taking samples out of a furnace while I was walking by and it was blue. I realized immediately that something amazing had happened," states Subramanian when asked how this serendipity had occurred. "The more we discover about the pigment, the more interesting it gets," Subramanian says. Maybe that's why Subramanian and his research group have decided to continue their research; attempting to make other colors using the same basic chemistry.

The Something Old, Something Blue exhibition showcases artifacts from the combined Horner Museum and Benton County Historical Society artifact collections, with an emphasis on the color blue. When

asked where the idea came from for Something Old, Something Blue, Mark Tolonen stated, "Most of our exhibitions come from our own collections, of about 120,000 objects. We go through and look for themes and we decided we had enough blue objects for an exhibit." Some of the additional highlights are Blues Traveler (international theme), blue fashion, blue in nature, the Boys in Blue (uniforms and school colors), and art.

Something Old, Something Blue will be on display November 14, 2014-October 24, 2015, at the Benton County Historical Museum. 1101 Main St, Philomath, OR 97370. They are open Tuesday thru Saturday 10:00am-4:30pm.



# VINCE REMCHO NAMED 2014 FELLOW TO THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

Three OSU faculty were elected 2014 Fellows to the American Association for the Advancement of Science (AAAS). Two faculty are in the College of Science: Professor of Chemistry Vincent T. Remcho and Professor of Biochemistry and Biophysics P. Andrew Karplus. Professor of Botany and Plant Pathology Valerian Dolja in the College of Agricultural Sciences was also named a Fellow.

The accomplishments of the new Fellows will be celebrated at the 2015 AAAS Annual Meeting on February 14, 2015, in San Jose. Election as an AAAS Fellow is an honor bestowed upon members by their peers for scientifically or socially distinguished efforts to advance science or its applications.

The three newly elected Fellows join more than 20 colleagues across OSU, who have also held this honor since 1965. Nationwide, the 2014 cohort includes 401 new Fellows, honored for their contributions to innovation, education, and scientific leadership. AAAS was founded in 1848 and is the world's largest general scientific society and a publisher of peer-reviewed journals, including Science. Election as a Fellow of AAAS is an honor bestowed upon members by their peers. The distinction recognizes notable work to advance science or its applications in areas such as research, teaching, technology, industry, government in addition to communicating and interpreting science to the public.

"I am extremely proud of Andy Karplus and Vince Remcho who were both selected this year as

Fellows of AAAS," said College of Science Dean Sastry G. Pantula. "They are not only outstanding researchers, but also outstanding teachers, mentors and citizens of science at OSU. They are shining examples of excellence at OSU."

Both Karplus and Remcho joined OSU's College of Science in 1998.

Remcho specializes in the design and fabrication of microscale devices, such as chemical analysis and synthesis for biomedical, biochemical, environmental, or nanoscale sensing applications. He co-founded three Corvallis-based research companies—Trillium FiberFuels Inc., a process technology firm that converts cellulosic feedstock into ethanol; GeneSpace Inc., a microtechnology company focused on total gene synthesis; and Lasso Metrics, a new startup founded with three OSU colleagues focusing on microfluidic analytical systems and data analysis of large, complex datasets.

This summer, Remcho made a highly significant breakthrough in healthcare research by developing a new chemical test that can determine whether or not a drug being used to treat malaria is genuine. The inexpensive, simple test can potentially save tens of thousands of lives in developing countries where counterfeit anti-malarial drugs often prove fatal.

Remcho has been recognized for his teaching and research, including the Bill and Melinda Gates Foundation Grand Challenges Awardee; Patricia Valian Reser Faculty Scholar; OSU Milton Harris Award in Basic Research; W.M. Keck Foundation Science & Engineering Program Award; NSF CAREER Award; Eberly College of Arts & Sciences Outstanding Teaching Award; and Affiliate Staff Scientist to the Pacific Northwest National Laboratory. Remcho is affiliated with the Oregon Nanoscience and Microtechnologies Institute and is an adjunct faculty in the departments of Biochemistry and Biophysics and the Materials Science Program in the School of Mechanical, Industrial and Manufacturing Engineering. He also served as interim dean for the College of Science in 2012 and previously as Associate Dean for Research and Graduate Studies.







## CHEMISTRY PARTICIPATES IN HOMECOMING... MORE TO COME!

Huhn - cont. from page 2

through the interview process with persons way smarter than he and was offered a position. The rest is history. Outside of work, if there is any thing outside of work, he still like to sail, they are moving their boat to Newport in the near term, and generally participate in any outdoor activity from climbing and snowshoeing to hunting and fishing. He studied martial arts for 15 years and has a really fast motorcycle he does not ride nearly enough. But most of his free time is spent helping his kids with home work, watching cartoons with them and generally guiding them so they can make significantly less mistakes in life than he has.



The 2014 Homecoming Parade saw a new arrival this year: the Department of Chemistry made an appearance for the first time, ever. "The decision to join the parade was really last minute," says Media and Event Coordinator, Luanne Johnson. "We're lucky to have such amazing support from our faculty, staff and grad students, or we'd never have been able to pull it off." Chemistry Department Chair, Rich Carter, said, "The Department of Chemistry values its central role at the University. Homecoming is an important annual activity that brings the OSU Community together. We felt it was key to be a part of that activity. We also want to continue to spread the message of encouraging people to consider careers in chemistry."

Graduate student volunteers gathered in the courtyard between Gilbert Hall and GBAD on a cold, damp afternoon to decorate the vehicle rented from OSU Motor Pool. Lights were strung, graduated cylinders containing glow sticks dotted the top of the cab and Chemistry spelled in periodic table letters decorated the bed of the pick-up.

Later that evening, a different group of Graduate Students showed up to walk the one mile parade route, in the pouring rain, and hand out candy to onlookers. "Our grad students were real troopers! We're so proud of them," commented Chemistry Student Worker, Caitlyn Ortega, who helped with planning, decorating, and driving during the parade. Chemistry stand-by of Nerds and Smarties candies were a bigger hit with the adults watching the festivities, than the kids. Several parents commented that it was a great joke.

The Chemistry Department plans on participating in the parade next year as well. Initial plans are already underway for a bigger and better submission. All the volunteer Graduate Students were full of ideas for next years float, so keep an eye on the calendar and come out and see what we came up with. Go Beavs!



Keep up with everything happening in the Chemistry Department... Follow our Social Media pages





## FOCUS ON ECAMPUS

### NEW E-CAMPUS COURSE

The OSU Ecampus Chemistry program continues to grow in reputation, classes offered, and student credit hours taken. Students all over the United States as well as overseas are finding that our rigorous online chemistry classes are helping them to reach their academic and career goals.

One challenge that Ecampus Chemistry is stepping up to face is the transfer articulation problem between semester and trimester schools. As you know, OSU teaches 3 terms per academic year, while more than 80% of higher education in the US utilizes the semester system. This creates challenges for students that:

- Have taken some chemistry at another school, but want to complete their chemistry series with OSU, or
- Only need “one semester” of chemistry, so are reluctant to take 2 of our classes to meet that need.

Many of the students that need “one semester of chemistry” are in the health professions—nurses,

physician assistants, nutrition, etc. For this reason, starting in Fall 2013, OSU Ecampus Chemistry offers a new class called CH 140, General, Organic, and Biological Chemistry that is worth 6 quarter credits. This will transfer to a semester school as 4 semester credits, including online labs. Response to this class has been good, with enrollment growing every term as awareness spreads; during Fall 2014, 30 students completed their chemistry requirements with this class.

Another large potential student population that needs semester-equivalent classes are those that need General Chemistry. Our Ecampus faculty is actively developing a modular approach to meeting the needs of these students; we hope to begin offering these courses Fall 2015. We expect that this offering will allow OSU Ecampus Chemistry to attract even more distance students to our well-respected program.

### JOHN SHELBY - ECAMPUS STUDENT REFLECTS ON HIS EXPERIENCE

John Shelby is a high school Chemistry teacher in New York City. We asked John, “Why did you take an online class from OSU’s Chemistry department?”

“I am fascinated by the details of how the world works, and this is what led to my interest in chemistry. In my work as a naturopathic physician, I used knowledge about the composition and interaction of different compounds on a daily basis. When I decided to shift gears to devote myself to teaching high school in the poorest congressional district in the country, I was instantly drawn to teach chemistry. Sometimes it is hard to feel that I am making a difference, but every now and then a graduated student will return and tell me they have done

well in their college chemistry class, thanks to what we studied together. That experience really goes a long way.

When I needed to accumulate a few more chemistry credits for my New York teaching license, I had a very difficult time finding classes to take. It was easy enough to find General Chemistry or Organic Chemistry being offered on evenings or weekends so that I could work around my teaching schedule, but more advanced classes did not seem to be available. For two years I tried to find courses that would satisfy the requirements, to no avail. I was very happy, therefore, to find Oregon State’s Ecampus Chemistry program. I had concerns about online classes because of a bad experience in the

past, but after corresponding with Professor Lerner, I was reassured that his Inorganic Chemistry class would be different.

I was extremely pleased with the level and quality of instruction provided by Professor Lerner. In his classes, each lecture was available through audio download and the lecture slides were also provided. I found the course to be quite challenging and very interesting. I can honestly say that I see the world differently as a result of this sequence of classes. I ended up taking both CH 411 and CH 412 from Dr. Lerner.

Outside of teaching, I enjoy spending time with my wife Lucia and my cat Pushkin. I play guitar and harmonica and I really like spending time in Central Park.”





# SUCCESS TAS AND CH 199...

by: Luanne Johnson

Recently, I sat down with Instructor, Margie Haak to discuss the Success TA program and Chemistry 199. The Chemistry Department started utilizing Success TA's in Fall 2013, to help those first year students who are struggling in General Chemistry courses and didn't know what resources were available to them in terms of tutoring and educational assistance. She said, "First year students are often intimidated by the idea of going to a faculty members office." This program helps alleviate that intimidation by having Graduate Student TA's reach out to the students. "It's been useful to reach those students who really want to try but are just lost, especially in their first term."

**LJ:** Where did the idea for the Success TA program come from?

**MH:** It came out of the First Year Advising Council. We were tossing around ideas, we divided that group into three and we were looking at first year student classes. What could we do? Especially in large classes, the feeling was the faculty member really didn't even know who was struggling. They had names, but they didn't know faces. We needed to find a way to reach those students so the idea of using the graduate student, because they're less threatening than us "scary people," to reach out to them and to be actively looking for students who were in trouble and offering help. One of the things they could offer help was in Chem 199 which is related to this, but it really came about just by a bunch of us sitting in a room thinking how do we reach these people that are failing that we don't even know?

You have more time to work with students one on one, which means throughout the term you watch them grow and learn skills that will help them succeed not just in chemistry, but in all their college courses.

*-Breland Oscar*

The best part of working in CH 199 is seeing students improve in their problem solving and ability to understand chemistry concepts.

*-Josh Flynn*

**LJ:** What is CH 199?

**MH:** CH 199 is one of the ways these students can get extra help. So this again came about throwing around ideas what do we do now that we have contacted these students, we really ought to offer them some help. And what do they need? Well, many of them are coming in with no actual study skills, some of them have math deficiencies, and some of them are just overwhelmed. But they needed some kind of organized support system and some extra help. So CH 199 is our attempt to provide them with help. We do chemistry stuff, but we also spend a significant amount of time on successful student skills like effectively studying, effectively reading a textbook, how do you organize your life, how do you become a successful student because a lot of these students have not gotten that out of high school. They never had to study, everything just kind of happened and they were fine. And now they are just literally lost. They failed a test and they've never failed a test ever in their life and they don't know what to do. So this is a way to give them some skills that they can take on to other classes as well. Hopefully, pull themselves up.

**LJ:** Who are the success TAs?

**MH:** Success TAs are regular TAs but part of their duty is to look for students who are struggling, and they do that by looking in the beginning of the term for students who haven't registered for electronic homework because that's a warning flag right there. They do it after the midterms by looking at midterm grades and seeing who earned below a C- and then contacting these students to let them know of options that are available to help them find out why they didn't get on







I really enjoy being an integral part of the success of students. We often take students from desperate need for help to being able to work independently. Its quite exciting seeing the progress of some students.

*-Colin Harthcock*

the electronic homework. Sometimes it's financial, sometimes they couldn't figure out how to do it, but they're basically looking for students who are in danger of not doing well and offering them help.

**LJ:** How many TAs do you have per term?

**MH:** 7 or 8.

**LJ:** Why has CH 199 been so successful?

**MH:** One of the reasons that CH 199 has been successful is we have what's called a scale up room, actually we don't have one, but the physics department has one. This is a very student centered room, it's a large room with round tables that seat 9 students at each table and there's no real discernible front to the room so it doesn't look like someone's going to stand up and talk at you in this room and that's where we do all this work. It's really important to have a room that's set up for student interactions because that's really what's important out of all of this, and that they are not expecting someone to stand up and give them a lecture, because that's just not going to happen. The Chemistry Department needs a room like this. We have a space for one but it needs to be totally gutted and renovated. And the reason we need it so badly right now, now that we've started using the Physics scale up room, they've decided that it's a really good room and they're also using it more. So we're having more and more trouble getting time in that room. And literally that is the only room on campus set up for this type of

work, oddly enough. So we really need to get our room going. Also, if we don't do it pretty quickly, we may lose the space that we have available right now; it may get turned into something else. So that would be huge for keeping this going.

**LJ:** Who else is involved in the CH 199/Success TA program?

**MH:** Mostly, Paula Weiss. She is a major player in this and she will probably take it over and make it her own, because she's heavily invested in student success. It's absolutely up her alley. And a lot of support from Rich Carter and Phil Watson, because this wouldn't be happening if they weren't supportive of it.

**LJ:** How is the program working so far?

**MH:** I think it's working well; our response rate is not great. The success TAs will send out individual emails to every student who earns below a C- on an exam, and about 20% of them will reply to those emails. There's still a lot of students who, for whatever reason, are not getting involved in this. But of the ones that do reply, many of them are students who have said, "Thank you for letting me know, for reaching out to me because I didn't know where to turn." And so this was really helpful for first year students, especially first term, they just don't know how the place works and they don't know where to go for help. So having someone say, "I'm here. I can try to help you with this," was really important to them.

It was a lot of work, yet it was fun. I was so very proud of the students after they finished the chemistry sequence. It was a privilege for me to work with them, and see their hard work and success.

*-Omni Pattawong*

...**HELPING STUDENTS SUCCEED**

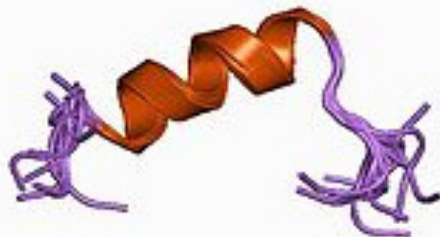


# BEAUDRY ON SAXITOXIN AND NSF FUNDING

by: Luanne Johnson

Christopher M Beaudry was born and raised in Waukesha, WI in 1978. He received his BS in Chemistry and Mathematics (double major) from the University of WI, Madison in 2000. He then moved west to the University of California, Berkeley for graduate school. He was one of Dirk Trauner's first graduate students. His graduate work was centered around the biomimetic total synthesis of SNF4435C and SNF4435D. After leaving Berkeley, Chris joined the group of Larry Overman at the University of California, Irvine. In Irvine he worked on developing a methodology for the synthesis of macfarlandin E, a rearranged spongian diterpene. In 2009, Chris accepted a position at Oregon State University to start his independent career. "It was state schools all the way, for me," Beaudry commented with a chuckle. And the chemistry department is glad to have him.

Dr. Beaudry always knew he'd be an academic. "The idea that someone right down the hall is an expert on some really weird thing is really cool to me." He also never liked the idea of having to focus his research on something that fits into someone else's bottom line. He's constantly telling young scientists to research things that they're



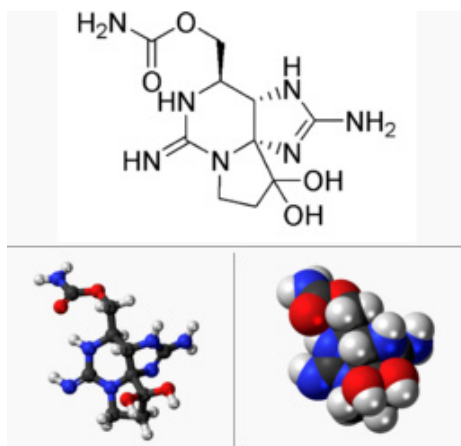
passionate about. "Science," he says, "can be very frustrating. If you're not passionate about what you're doing you'll burn out."

He is certainly passionate about his current research. This research focuses on a molecule called saxitoxin. Also called STX, Saxitoxin is a well-known paralytic shellfish toxin currently being studied. STX is a neurotoxin that is naturally produced by certain types of marine algae. Ingestion of STX (usually through shellfish contaminated by red tide events) is responsible for the human illness known as Paralytic Shellfish Poisoning or PSP. Dr. Beaudry informed us that to his knowledge, STX is the only molecule that can distinguish between two different voltage-gated sodium ion channels (Navs) in cells. The human body has ten unique Nav ion channel isoforms and those ion channels are important for mediating electrical signals in cells. One of these specific ion channels is responsible for the sensation of chronic pain, iso-form 1.7. Individuals with a non-functioning iso-form 1.7 ion channel cannot feel pain. Most can live normal lives, but they must be very careful not to injure themselves. If a saxitoxin-like molecule or an analog could be developed that would selectively inhibit Nav1.7, it could be used as a treatment for people with chronic pain.

Dr. Beaudry recently received an National Science Foundation grant to continue this line of research,

titled, Alkaloid Synthesis Using Amino Radicals. These funds will allow Dr. Beaudry and his research group to continue working on this discovery for another three years. The Beaudry Group currently contains seven graduate students, three undergraduates and one "fearless leader." He says his group are, "synthesis oriented people," making molecules that have been isolated, generally from plants and animals. His group is drawn to projects that don't have obvious solutions using current technology. "If we can look at a molecule and know exactly how to put it together, then we're not interested in making it," he continued, "we get really fired up when we see a molecule with interesting properties and we can say 'I have no idea how such a molecule could be synthesized'."

Beaudry reported that, "watching a student, whether it be a graduate or an undergraduate, transition into the leader of their project and really take ownership of it and become the driver of scientific inquiry is quite possibly, the best part of my job."



# Stephen Hawkes (1928-2014)

by: Jim Krueger and Mike Schuyler



Longtime faculty member Stephen J. Hawkes passed away on November 16 in Corvallis. Stephen and his wife Pamela were active members of our department community, an association that continued throughout retirement years.

Stephen, born in 1928, earned his BA and PhD degrees from the University of London. He and Pam moved to the US

in 1963, where Stephen taught at the University of Utah and at Brigham Young University before joining the OSU Chem Department in 1968. Stephen was a member of the Analytical Research Division where he taught both analytical and general chemistry. He retired in 1996.

Stephen's research specialty was gas-phase chromatography. The theory and practice of improving high-speed chromatographic separations was a principal goal of the research he and his students conducted. His objectives were to find ways to create more widely useable and practical means of analyzing gas samples. This involved the theory needed to extend working conditions to a wider range of temperature, flow rates, and column materials.

Stephen was an outstanding teacher who was well-known for his elegant and lucid lecture style. He introduced the Keller Method (PSI) of individualized instruction to the CH 324 (234 originally) Quantitative Analysis course in the late seventies. Originally developed to teach Psychology, Stephen adapted it to the quant course so that the TAs could focus on experiments, and students could study on their own. Over the ensuing years, study materials on separation science in quant courses leaned heavily on Stephen's work. This novel approach benefitted not only the students, but also a number of potential chemistry teachers among our graduate students.

Stephen was also active in collaborating with others interested in innovative approaches to education on the OSU campus, and was a contributor to chemical education at the national level. His articles always offered good suggestions for teaching improvement.

Stephen organized and, for many years, led the group of chemistry retirees that meet monthly for lunch.

The Department has lost a good scholar and friend. Thank you, Stephen Hawkes, for your contributions to OSU Chemistry, and for giving us your best.

# Malcolm Daniels (1930-2014)

by: Walt Loveland

When Chih Wang got the money from state and federal sources to build his Radiation Center in the mid 60s, he faced the unusual challenge of populating the Center, as there was no expertise in nuclear things on the OSU campus. He realized he could not have a Radiation Center unless he found someone who understood the chemical changes in matter upon irradiation. He reached out to the Puerto Rico Nuclear Center and recruited Malcolm Daniels to come to Corvallis.

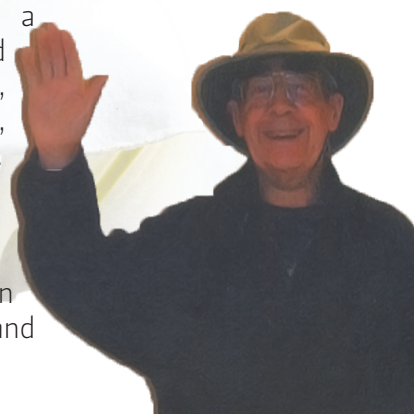
Malcolm had been part of Argonne National Laboratory radiation chemistry group where the concept of the solvated electron was developed. Malcolm came to Corvallis and started a high profile research group working on the chemical and physical processes that occur when ionizing radiation interacted with solutions of interest to the nuclear fuel cycle. His work was published in Science, Nature and other high profile journals and he was recognized as a creative member of the international radiation chemistry community.

Malcolm then changed direction and focused his efforts on understanding the interaction of UV radiation with the DNA bases. He stayed with this effort throughout his academic career, which ended with his retirement from OSU in 1994.

Malcolm set high personal standards for his work, which brought him international recognition. He produced complete, well-argued papers rather than the habit of the "least publishable unit." It can be said that Malcolm "did not suffer fools gladly" and his best work was done with a series of postdoctoral scholars who came to OSU to work with him.

He was different from many OSU chemistry faculty members in that he spent September through June in Corvallis teaching and his summers in France where he owned an apartment. He had many profitable collaborations with European colleagues fostered by sabbatical leaves in European laboratories.

Malcolm lived a rich and full life filled with music, travel, good food and wine, hiking and reading. He raised three fine children who survive him. He was a free spirit who set his own agenda in life. Hail and Farewell.







Department of Chemistry  
153 Gilbert Hall  
Corvallis, OR 97331



## You can shape the future

Oregon State University helped you become the success you are today—why not pay it forward to benefit the scientists of tomorrow?

Consider including **the OSU Foundation in your will or trust**. Your generosity helps students in more ways than you can imagine.

**Contact us to learn more.**

*Julie Irmer, Office of Gift Planning*  
800-336-8217 • [Gift.Planning@oregonstate.edu](mailto:Gift.Planning@oregonstate.edu)  
[osufoundation.org/giftplanning](http://osufoundation.org/giftplanning)



## AWARDS & MENTIONS

Dr. **David Ji** won the new UVDF (University Venture Development Fund) Award in Chemistry for his research titled, "Prototype development for high-power pseudocapacitors."

.....

**Judy Giordan** received the 2014 Henry F Whalen Jr. Award.

.....

**Myra Koesdjojo** awarded the COS Outstanding Faculty Research Assistant Award 2014.

.....

**Kevin Gable** inducted as a 2014 ACS Fellow

.....

**Chong Fang** received a 2015 NSF CAREER Award

.....

