

# Plant Science Says



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## Promotion and Tenure

Faculty members Jennifer Britton, Li Huang, and Tracy Dougher went through the process of Promotion and Tenure this past year. Jennifer was retained, Li received a promotion to Associate Professor with Tenure, and Tracy received a promotion to Professor. Congratulations to each of you!



## Farewell to Lucy Cooke



*Lucy Cooke analyzing pea sprout for viability.*

Lucy Cooke is retiring from the Montana State Seed Testing Lab May 31. After graduating with a degree in zoology from MSU and applying for everything remotely scientific, she accepted the position of seed analyst in the Seed Lab in 1980 thinking it would be short term.

Lucy and her husband Brian are looking forward to having more time for skiing, biking, hiking and hunting. Lucy commented, "It's been great working with everyone; hope to see you out there on the trails!"

## PSPP Graduation

All PSPP faculty and staff are invited to attend a Graduation Reception and Awards Ceremony honoring Spring 2013 graduates on Friday, May 3, from 3:00-5:00 p.m. in 108

Plant BioScience Building/Mathre Courtyard. The awards ceremony will begin at 4:00. Hors d'oeuvres will be served along with beer and wine.

## 2013 CELA Annual Conference by Jennifer Britton

Every March educators in Landscape Architecture and Design gather for CELA's (Council for Educators in Landscape Architecture) annual conference. For more than 90 years, CELA has been integral to the content and quality of education in landscape architecture and it represents programs of higher learning in the United States, Canada, Australia and New Zealand. The annual conference focuses on research and scholarship in the field of landscape architecture with papers and poster presentations.

This year more than 400 people attended the four day conference hosted by University of Texas at Austin. The theme this year, *Space and Time, Place and Duration* explored our relationship with land over time. The conference also has several theme tracks



*University of Texas. Photo courtesy of Jennifer Britton.*

including Communication & Visualization; Design Education & Pedagogy; Design Implementation; History, Theory & Culture; Landscape Planning & Ecology; People-Environment Relationships; Research & Methods; Service Learning & Community Engagement; Sustainability; and Urban Design.

My presentation explored social constructivism and fell into the pedagogy track on the last day of the last session and almost the last presentation. I could say they saved the best for last, but I think it was more just dumb luck! I attended some very helpful seminars including coordinating a study abroad to Germany and a critique on design and maintenance of the Lurie Garden in Chicago. Lesson learned: the devil is in the details.

To explore Austin, I also participated in an invited "Sketch Crawl." A group of 30 CELA attendees attended a real-time sketch crawl designed to unfold through Austin's urban landscape. We each received a Moleskine Japanese sketchbook (a coveted sketchbook brand) and, in an 8 hour "crawl", we sketched and painted our way through the University of Texas campus and downtown Austin. It is a great technique to observe, slow down, and see surrounding nuances. CELA exhibited our work at the conference in conjunction with Art Alliance Austin. The resulting sketchbooks and drawings were also later discussed during a panel session about the role of sketching and drawing in mapping and disclosing landscape perception.

The final night a reception took place in the University of Texas LBJ Presidential Library. This is a formidable ten story modern building of travertine and glass dedicated only a few months before I was born, and while my own father was serving in Vietnam. The center piece of the great hall is a four-story, glass-encased view of the archival collection from President Johnson's political career. Perfect red boxed folders sit in a line on black bookcases, with gold seals, behind glass, encased in stone and directly across from an exhibit of fallen Texas Vietnam Heroes. To top off the presidential homage one can visit the 10<sup>th</sup>



*The archival collection of President Lyndon B. Johnson's political career. Photo courtesy of Jennifer Britton.*

floor to view a 7/8<sup>th</sup> scale duplicate of the Oval Office. Surreal and uncomfortable, yet very different, describe my parting sentiments.

Not all experiences were

as stately; a bonus in attending conferences is exploring a new location especially when your academic pursuits happen to be looking at landscapes! Admittedly, I travelled to Austin with two premeditated missions hoping time would allow a visit to the Lady Bird Johnson Wildflower Center and to hear some seriously good music. The Wildflower Center whose mission is "to increase the sustainable use and conservation of native wildflowers, plants and landscapes," is a floriferous beacon, a must see for anyone interested in celebrating natural gardens, and I couldn't have picked a better time to bond with sweet scented lupines. However, I did watch for the tell-tale fire ant mounds, a hazard for those of us unfortunate enough to be allergic. Yes, I did pack my epinephrine. Oh and what about the music? With some excellent jazz, the Elephant Room served-up a great outing and in Austin you can find Indian food at midnight!



*Lady Bird Wild Flower Center at the University of Texas. Photo courtesy of Jennifer Britton.*

Beyond all the buzz of activity at CELA 2013, for me the highlight circles back to the beginning. Rich Haag, the 89 year old Seattle based landscape architect famous for his work on the Bloedel Reserve on Bainbridge Island and Gas Works Park in Seattle, gave the opening address. His unreserved speech summed-up his passion, humor, and left us all with more than a couple of choice quotes.

These were two of the best for PSPP...

*"The term plant materials should be banished from our vocabulary. Plants are not materials. They are living organisms"* and for the topper, when asked to talk about trees Haag responded, *"Every city should have a tree czar...or a tree czarina.... That person's obligation is the welfare of the trees."*

To this, I quite agree.

## **Why Debate Agricultural Science Issues?**

**By Florence Dunkel**

My students in BIOO 162 Contemporary Issues in Insects and Human Societies think there are a lot of reasons!

Each of the past 13 years, BIOO 162CS students have chosen a new topic to debate, taken sides, and prepared for a formal public debate the way an athlete would prepare for a public tennis match or basketball game. Generally, the class has equal numbers of seniors and freshmen, but it isn't always the seniors who do the most work. Students find public debates are opportunities to thrive, to blossom, to use their skills in research, film making, art design, public speaking, and group leadership. It is also a time to creatively develop new skills, students tell me and show me. Previous-year-students often become self-appointed informal coaches before the debate and energetic audience members on the Big Night. After the debate and the organized presentation of the issues, students say they finally see the issue in a clear light.

Like Tracy Dougher's experience (PSPP Newsletter April 2013), it all started from a

workshop on active learning strategies led by Pam Harris and Ralph Johnson in Architecture. Looking back over the 13 debate topics students chose, I think the issues really were timely ones that needed to have the air cleared about them---for example, in 2001 the topic was "Abolishing NEPA (National Environmental Protection Act); in 2005 it was "Is organic farming feasible?"; and in 2007, the topic was "The safety of GMO crops". In 2008, when students debated the feasibility of providing bednets for malaria management it led our research group to realize that given current anopheline mosquito behavior, bednets are not culturally appropriate in some human social systems in Africa (Dunkel Amer. Ento. 59:45-55).

## 2013 Contemporary Issues in Science Debate

Inspired by the surprise visit of ten 6<sup>th</sup> grade students and their biology teacher to the 2013 Bug Buffet, BIOO 162CS students chose as their debate topic "Food Service in Elementary Schools Enhanced with Edible Insects". Their proposition statement was: Resolved, insects should be introduced into the food service in elementary schools as food enhancement because they are economical, highly nutritious, environmentally sound, and culturally feasible to serve.



*The two debate teams, their student captains (Brianna Ranck, Affirmative, and Hyatt Freeman, Negative), TA Cathryn Cayton, and their professor, Dr. Florence Dunkel, pause for a photo after their formal, public debate on April 10. Photo courtesy of Suzie Taylor.*

On their own, some students organized taking the IRB preparation to serve a questionnaire to 216 elementary (5<sup>th</sup> grade) students at Belgrade Intermediate School. Other students conducted a wet weight/dry weight analysis of *Acheta domestica*, the most common commercial, edible orthopteran in the USA. Meanwhile, another student got on the phone and called the FDA in Washington D.C. to determine the FDA's specific position on food insects. Still other students combed the peer-refereed literature for strong evidence to support their team's side of the argument. Some students contacted the company producing Capul, the new cricket-based energy bar now available in Salt Lake City at 16 retail locations. All of the work was accomplished outside of class and, for the most part, with little professor direction.

This year we had an outstanding judging team:

- Suzi Taylor, MSU Communications Specialist and parent of a first and 7<sup>th</sup> grader
- Toots Tazuts, Registered Sanitarian, and MSU Food Safety Officer
- Charles Holt, organic vegetable farmer in Manhattan, Montana and manager of Towne's Harvest, also a grad student in LRES

Judges ruled the debate a close tie (I thought the Negative team brought stronger evidence!). Students decided it was very fun and team friendships flourished. The local TV captured the essence of the debate on the 10 p.m. news that evening.

Thanks to B100 162CS seniors in Film and TV, you too can enjoy the event on dvd or read the position papers and debate summary in the 2013 Anthology of the Issues of Insects and Human Societies. Contact: F. Dunkel 994-5065, fdunkel@montana.edu

### **It's a Miracle Growing Career Fair!**

**By Tracy Dougher**

For the HORT 105, Miracle Growing (MG), final exam week, students were treated to a visit from horticulture industry folks from Montana, Wyoming, and Oregon - 17

companies in all. Horticulture students from other courses were invited as well. This was an experiment on my part to engage students with the horticulture industry and it met with great success! MG students were required to ask a set of questions of three owners from different horticultural fields. The fields included nursery/landscape management, turfgrass management, arboriculture, landscape architecture/planning, extension, greenhouse management, and organic farming. The room was abuzz for two hours with more than just the required questions, particularly from the non-majors who learned a great deal about horticulture's connection to their chosen majors. Owners were excited to learn more about the students in our program and potentially recruit for this summer. Since MG is moving to the fall semester, the horticulture career fair will be moving to December.



*Toby Day, MSU Extension, chats with Student Chase Johnson about the expectations of a career in Extension. Photo courtesy of Jill Scarson.*



*Jennifer Robinson from the City of Bozeman, Department of Forestry, shares the ins and outs of arboriculture with a student. Photo courtesy of Jill Scarson.*



*Student Whitney Bretz questions Jerry Cashman, Cashman Nursery, about the nursery and landscaping business. Photo courtesy of Jill Scarson.*



*Steve Lehenbauer, president of the Montana Nursery and Landscape Association & owner of River Ridge Landscaping, discusses issues concerning landscaping with student Will Wright. Photo courtesy of Jill Scarson.*

## **2012 - 2013 Entomological Society of America meeting**

### **By Anuar Morales Rodriguez**

The 2012 – 2013 Pacific Branch of the Entomological Society of America met in Tahoe, Nevada, April 7-10. The theme for this year's meeting was, "A Sustainable Science for a Sustainable Future". The program included student competitions for undergraduate, Masters and Ph.D. programs, general sessions, and eleven symposia. The Pacific Branch includes entomologists from the Pacific coasts of Canada, the United States and Mexico. This year, about 450 scientists attended the meeting, the second highest attendance on record for a branch meeting.

For the student competition, Charles Hart, a Master's degree candidate in Mike Ivie's lab, presented his talk "A checklist of the Cerambycidae (Coleoptera) of Montana with distribution maps" and Anuar Morales, a Ph.D. student in Kevin Wanner's lab, presented a poster "Monitoring dingy cutworm, *Feltia jaculifera* (Guenée), with pheromone traps in Montana".

Anuar Morales and Kevin Wanner also organized the symposium "Wireworms in the west: What is known, what has been done, and what needs to be done". Ten speakers were invited to share their views and experiences as producers, industry representatives, and academic scientists. We invited speakers from Washington, Idaho, Montana and British Columbia, Canada. The speakers from Montana State University were Frank Etzler, Master's student in Mike Ivie's lab, "Evaluating the Taxonomy of Wireworms in Montana", Michael Ivie, "The Taxonomic Impediment to Progress in Managing Wireworms", Kevin Wanner, "120 Years after Comstock, the Battle with Wireworms Continues", and Anuar Morales, "Wireworms in Montana wheat and barley fields".

Unfortunately, Kevin had to leave the meeting the day before our symposium and I gave his talk for him. As an organizer and moderator of this symposium, I have to say it was a great experience and I have promised myself never to do it again. Our gratitude to Ruth O'Neill for her help with the symposium and to all the speakers for their valuable contributions.

*Last fall semester, our land design students worked with the SE Group, a landscape architecture firm, to design a plan for Eagle Mount. The following is a press release from the SE group regarding this collaboration.*

### **SE Group Works with Non-Profit Eagle Mount to Create Accessible Recreation Concept Plan**

SE Group has recently completed an Accessible Recreation Concept Plan for the non-profit organization, Eagle Mount, in

Bozeman, Montana. Eagle Mount is committed to providing quality therapeutic recreational opportunities for people with disabilities and young people with cancer, and to provide support for families of participants so that "they shall mount up with wings as eagles." ([eaglemount.org](http://eaglemount.org))



The concept plan was developed in a highly collaborative manner with the Eagle Mount team, as well as with input from the Montana State University Landscape Architectural Program. SE Group assisted in crafting a user survey that identified many specific program needs for the facilities. MSU students prepared some design concept ideas based on the survey data to help flush out the programmatic needs and get important stakeholder feedback. SE Group then helped bring the various threads of the effort together into a conceptual plan that balanced the need for accessible outdoor recreational spaces, accommodations for multiple ability levels, and addressed pragmatic concerns such as parking, phasing, and proximity of facilities to operations and infrastructure. Throughout the entire effort, the concept planning was done to help focus on the needs of program participants AND their families—assuring that all those who will come here in the future will find it rewarding and fun.

*"...the plan really is phenomenal. Your approach to the amphitheater, 'Eagle Mountain,' and water feature/experience zone is brilliant. Sticking with the rounded geometries gives the whole thing an organic feel, and the placement of the playground and splash pad/fountain is now informed by all the functionality we talked about. Wow—bravo!"*

*- Mary Peterson, Executive Director*

SE Group is thankful for the opportunity to have worked with the Eagle Mount team and support their extraordinary mission.

### Former Post doc Returns



*Dr. Sebastian Kiewnick, former PSPP postdoc*

Sebastian Kiewnick, former post doc for Barry Jacobsen from 1996-1998, is here on sabbatical. He is currently a research scientist at the USDA near Zurich, Switzerland. During his time here, he will give a lecture to Alan Dyer's Field Plant

Pathology students and work on a book chapter. If you would like to contact Sebastian, his email is [sebastian.kiewnick@acw.admin.ch](mailto:sebastian.kiewnick@acw.admin.ch). He is accompanied by his wife, Andrea (former graduate student with Barry Jacobsen), and two daughters, Clara, age 11, and Johanna, age 9.

### Brazilian Government Invites Strobel to Share Fungal Research

Gary Strobel was the honored guest of a Brazilian government sponsored project dealing with the chemistry and biology of endophytes associated with the Amazon. He presented a one hour report on his efforts over the years on endophytic fungi and their bioactive natural products. The meeting was attended by hundreds of students and project people from around Brazil. The meeting was held in Belem, Brazil, which is located at the mouth of the Amazon. The overall project is a three year program involving about 30 labs whose goals are to isolate and characterize

Brazilian endophytes and the potential that they have to make novel natural products.



*Gary Strobel pictured along with students and faculty at the meeting in Belem Brazil held in early April. Faculty and students attending the meeting were from around the entire country of Brazil. Courtesy of Edson Rodrigues- Filho.*

### **Compost Happens at the PGC By David Baumbauer**

There is a shiny new dumpster out back of the PGC awaiting your contributions of compostable potting soils and plant materials. The grounds crew has offered to compost these materials, saving the university over \$4,000 in costs associated hauling waste soil to the Logan landfill. Please remove all pot tags and wire ties before placing materials in the compost collection bin. Do not place noxious weeds or herbicide treated materials in the compost bin, use the standard dumpster.



*The compost dumpster at the Plant Growth Center*

Thanks for your cooperation with this project.

### **Teaching Tips By Tracy Dougher**

#### Flipping the Classroom – Part II: Losing the Lecture

I had already started down the path of 'losing the lecture' but an article I read in 2006 struck a chord with me. Yamane (2006) wrote about a strategy for creating discussion-based courses, but in his justification he included a short history on teaching and the evolution of the lecture. Basically, and this had been my thinking all along, lectures had come into being as a way to impart knowledge to students who had no access to texts, let alone the internet, videos, and podcasts. As I stood in front of my class I found myself philosophizing on various approaches - should I be an entertainer, should I follow the outline of the book with different examples, should I give the students a sheet with blanks to fill in as I lectured, should I give them my PowerPoint slides...I didn't know. I was spending a lot of time reading the text and researching to develop my lectures and I sure learned a ton, but I felt like the students were missing so much. In the end, all I felt like I was doing was regurgitating the material in a different form, but still the same material that was so easily available to the students. And as the internet was rapidly progressing, so was the information available to the students. If all of this information was so widely available in much more entertaining forms, what was the point of me even being in the room? What is my value to the students? Now you can really ask yourself the latter question as online courses become widely available). The answer I gave myself was that my value lay in helping students make connections to their life experiences. Really, that is how we learn, based on our own past experiences and the relationships and connections we can draw to those experiences. And students do not make connections passively listening to someone else, at least not many.

So really, at this point, I was asking myself how to get students to read before coming

to class. Over the years I have found success in a multi-pronged approach. First and foremost is letting the students know about my teaching approach and that reading is fundamental to being successful (anywhere really, but particularly in the class). This includes a little history on the RIF campaign from the 1980s. Secondly, all group discussions, case studies, activities, and exercises in the classroom are based on the readings, but are not for direct regurgitation of the readings. They are, rather, a necessary extrapolation of the material. Regular quizzes at the beginning of the class are also an approach to reminding students that they should be reading the material. Third, a low-stakes online quiz (open book, of course) due the evening before coming to class nudges them to at least crack the book to find the answers. Lastly, we all know that knowledge is no longer gained solely through reading. So I have slowly been building D2L content that includes internet links to videos and interactive models (the Plant and Soil Sciences eLibrary is a good start, just ask Bill Dyer), as well as my own short podcast lectures (on a single topic), podcasts (yes, I'll share this at another time), and videos.

So, do my students really read the book? I'm sure there are a few who do not. But the conversations, discussions, comments, and questions that we have during class are not about the material directly, but the connection between the material and their lives, the plants they are growing, their relatives who ask them questions about their houseplants, and even sometimes their experiences in other courses. Makes me think they are reading.

Yamane, D. 2006. Course preparation assignments: A strategy for creating discussion-based courses. *Teaching Sociology* 34:236-248.

### **Montana Ag Live Schedule for May**

May 5 - Travis Horton, Regional Fisheries Manager, Montana Wildlife and Parks, "Agriculture and Maintaining Healthy Fish Populations".

May 12 - Anton Bekkerman, MSU Ag Economist, "The Changing Landscape of Montana's Grain Markets".

May 19 - President Waded Cruzado, MSU President, "The 2013 Legislative Session, Its Impact and the future of Montana's Grain Markets".

### **Invited Talks**

Jack Martin, "Analysis of EMS induced HMW subunit 1Dx5 and 1Dy10 alleles." Arcadia BioSciences, Davis, CA. April 4, 2013.

Mike Giroux, "Improving Wheat End Product Quality." Arcadia BioSciences, Davis, CA. April 4, 2013.

Mike Ivie, "The Taxonomic Impediment to Progress in Managing Wireworms." 2013 ESA Pacific Branch Meeting of the ESA, Stateline, NV. April 7-10, 2013.

Kevin Wanner, "120 Years after Comstock the Battle with Wireworms Continues." 2013 ESA Pacific Branch Meeting of the ESA, Stateline, NV. April 7-10, 2013.

Anuar Morales Rodriguez, "Wireworms in Montana wheat and barley fields." 2013 ESA Pacific Branch Meeting of the ESA, Stateline, NV. April 7-10, 2013.

Frank Etzler, "Evaluating the Taxonomy of Wireworms in Montana." 2013 ESA Pacific Branch Meeting of the ESA, Stateline, NV. April 7-10, 2013.

Steve Hystad, "Plant Genetic Engineering," Gallatin Empire Garden Club. Bozeman, MT. March 19, 2013.

Steve Hystad's presentation "Selection of Hard Spring and Winter Wheat with no polyphenol oxidase activity" was selected as one of six finalists in the 2013 AACCI Best Student Research Paper Competition. He will present at the Cereal Chemistry meeting in Albuquerque in October.

### **Grants**

Jennifer Britton, EFAC, 5,110.

Mary Burrows, Disaster and Emergency Services Mini-Grant. Montana Disaster and Emergency Services. \$6,000.



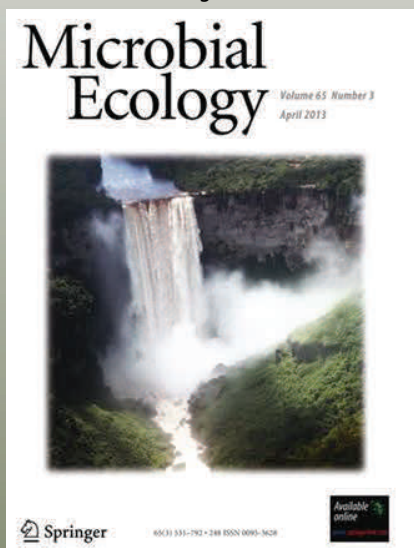
Mike Ivie, Pine Shoot Beetle Survey. Montana Department of Agriculture. \$10,500.

Colburn Field, student majoring in Plant Science Biotechnology, Emerging Scholars Grant. \$1,000. The grant is available to Colburn to cover expenses related to traveling to the Human Nutrition Lab in Grand Forks ND to test the glycemic index of the various potato plants involved in his research. Colburn is working on a low glycemic potato that can be produced in Montana as seed.

### Publications

Lonergan, E., and Skoglund, L.G. 2013. First report of powdery mildew (*Microspheera palczewskii*) on Siberian peashrub (*Caragana arborescens*) in Montana. Online. Plant Health Progress doi: 10.1094/PHP-2013-0327-01-BR.

Strobel, Gary



Gary's photo of the Kaieteur Falls in Guyana appeared on the cover of the April issue of *Microbial Ecology*.

### Growing Fennel

**By Toby Day, Extension Horticulture Associate Specialist**

When I teach new gardeners what to plant in their garden, I tell them to list the vegetables they like to eat and plant those vegetables, as long as they can be grown in our short growing season. I also encourage them to experiment in one part of the garden with a few things they don't normally eat. "You never know, you might find something you really like to grow and

eat," I explain, "This is how I learned about the wonderful attributes of fennel in both the garden and in the kitchen."



I learned about fennel many years ago while on a field trip to Gallatin Valley Botanical with several MSU Agricultural Extension agents from across the state. During the

tour, a few agents made their way over to me and asked the identification of the plant that was growing in many rows covered by spun row fabric. A little embarrassed (as I was the new Horticulture specialist!), I responded, "I don't have a clue what that is." Yep, no idea. I had never grown fennel, nor had I seen it grown. And, my parents never cooked with fennel when I grew up. As far as I knew, fennel was as foreign as anise or cardamom. After seeing it grown here in Montana, I had to try it out in my garden. What I found out was that fennel is not only easy to grow, but it is a great addition to the roasted vegetables I love to eat.

There are two types of fennel that are commonly grown – common fennel (*Foeniculum vulgare*), which is grown for its fronds and seed (which look similar to dill fronds and seed) and Florence fennel (*Foeniculum vulgare* var. *azoricum*) which is commonly grown for its bulbous base and stalks, often called the "fennel bulb." Native to the Mediterranean region, fennel seed, stalks, fronds and bulbs are used in many Italian and Greek recipes to add a "fragrant licorice flavor" to the foods. I find that if I toss in a few fennel bulbs with my roasted vegetables, there is no better taste. Now my garden is filled with fennel. There are two cultivars of fennel that are common to the home gardener – 'Zefa fino' and 'Orion Hybrid'. Because fennel grows well in an alkaline soil, it is a good candidate for Montana Gardens. Fennel prefers fertile, high organic matter soils with a pH of 6.5 to 8. They can be started indoors 4-6 weeks before the last frost and

transplanted, or they can be sown directly into warm soil after the chance of frost. Plant fennel seeds 1/4" deep, 4"-6" apart in rows 18" apart. You may want to plant in succession (a few seeds every 2-3 weeks) to ensure that you always have fresh fennel. Fennel prefers cooler temperatures much like our cole crops (cabbage, cauliflower, broccoli), so bolting or splitting may occur in hot temperatures.

Water fennel regularly and don't let the soil dry out. Usually one to two inches of water, similar to what you would water the rest of the garden is sufficient. Keep the soil moisture consistent and never let the soil dry or the fennel may split. Fennel, when grown in the right conditions will mature within 60-90 days. You can harvest and use almost any part of the plant. I prefer the bulbs. If you would like to keep the bulbs white, cover the bottom of the fennel with soil to etiolate (whiten by withholding sunlight) the base.

Fennel is a good source of calcium and magnesium (seed), as well as vitamin C and potassium. It is also very low in calories. Still skeptical? Give it a taste test this year. Cut up your favorite roasting vegetables (carrots, beets, turnips, potatoes, etc) into 3/4" to 1" pieces and cut a fennel bulb into the mix. Coat with olive oil and kosher salt and roast in the oven at 400° F until the vegetables are soft, turning periodically. I think you will like the taste. If so, try planting fennel!

## Recipe of the Month

### Baja Style Fish Tacos

#### Beer batter:

1 c all-purpose flour  
1 t salt  
1/2 t ground black pepper  
1 cup dark Mexican beer



Mix the flour, salt, and pepper in a medium bowl. Gradually add in the beer while whisking. Set aside and let the batter rest for 15 min. before using.

#### Cream Sauce:

1/3 c mayonnaise  
2/3 c Mexican crema or sour cream

1 t grated lemon zest  
2 T fresh lemon juice  
2 T water  
Salt and pepper to taste

Put the mayo and sour cream in a medium bowl. Whisk in the lemon zest, lemon juice, and water. Season to taste with salt and pepper (can be made 3 days ahead, covered, and refrigerated).

#### Fish Tacos:

Oil for frying  
1 c all-purpose flour  
1 t salt, plus more for seasoning  
2 lbs skinned halibut cut in to 5 by 1/2 inch strips  
Freshly ground black pepper  
Corn tortillas  
2 c shredded cabbage  
2 c tomatillo salsa (store bought or homemade) for garnish, optional  
Pickled jalapenos, for garish, optional

In a large skillet, over medium heat, add enough oil to reach a depth of 1-inch. Heat the oil until a deep-fry thermometer registers 350 degrees F or when the end of a wooden spoon sizzles when inserted into the oil.

On a large platter, combine the flour and salt. Season the fish pieces all over with salt and pepper and coat with flour. Working in batches, dip the fillet in the beer batter and coat on both sides. Fry in the hot oil until golden brown and cooked through, about 5 minutes. Transfer to paper towels to drain.

Make tacos with the tortillas and fish and top each with cream, shredded cabbage, tomatillo salsa and pickled jalapenos, if desired.

## May Birthdays

Mina Talajoor	6
Heather Rimel	12
Matthew Moffet	14
Chaofu Lu	16
Riyadh Al-Khafaji	17
David May	20
Mareike Johnston	22
Kim Prosek	22



Tom Blake	24
Gene Ford	29
Bob Johnston	29
Deanna Nash	31