



Gill Raker Gazette

The Newsletter of the Idaho Chapter of the
American Fisheries Society

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Editor: Tim Copeland

President's Message - "Making the Most of It"



I just got back from an ice fishing trip with some family and friends. There's a spot close to my home where the perch fishing has been good for the last month. I have gone by myself, and had a good time, but I was reminded on this latest trip how much more enjoyable it is to share these cool experiences with others. That point was made clear watching my six-year-old niece catch her first fish, followed by several more. The catches usually started with a squeal, followed by lots of laughter while she reeled them up. Fishing by myself would have been okay, but I sure was glad my brother and his kids were able to make it. I haven't laughed that much during a fishing trip for quite some time!

Much like fun fishing trips, we are all about to have a great experience next month, which is our annual meeting. I hope we all take the opportunity to make sure we include others while at the meeting so that we all might get more out of it. Whether you know it or not, some might find us AFS-type folks a little intimidating. Maybe it's the other way around as most biologist types tend to be a little introverted. Either way, sometimes it can be difficult for some to take advantage of the networking opportunities that the AFS meeting provides. So if you find yourself in a situation where you have chance to meet someone new, or introduce someone to your group of friends and associates, go out on a limb a little and please do. You just might make a life-long friend, a new research partner, or co-worker. The content of the presentations and the things we will learn will definitely be of benefit to us, but if we don't take advantage of the networking opportunities the meeting provides, then we are not getting everything out of our meeting that we can. I can't wait for the meeting. We have an excellent Plenary Session lined up, and a great composite of contributed talks and posters. I'm excited to catch up with old friends and hopefully meet some new ones, and hear the latest and greatest in the realm of Idaho fisheries.

See you soon in Coeur d'Alene!

-Brett High



2020 ICAFS Annual Meeting Is Coming!

Coeur d'Alene Resort in Coeur d'Alene, Idaho
March 11-13 - Workshops March 10, 2020

The Most UNFORGETTABLE ICAFS Meeting in History!!

Theme: Navigating the Challenges of Science Communication



Artwork: Ashley Vargas

Presenting A Star Studded Plenary Speaker List Providing Insight to Help Us Become More Effective Communicators!



2020 ICAFS Annual Meeting Is Coming!

Featuring: Ray Troll



In his studio on a hill above Tongass Narrows in rainy Ketchikan, Alaska, Ray Troll creates fishy images that swim into museums, books and magazines, and onto t-shirts worn around the world. He draws his inspiration from extensive field work and the latest scientific discoveries, bringing a street-smart sensibility to the worlds of ichthyology and paleontology. Ray will give us his spin on conveying science through art!

Hank Patterson (aka Travis Swartz)



Travis has worked in comedy and film for 20+ years. He started in the world of Shakespeare, spending many years working regional theater at Actor's Shakespeare in New York, Oregon Shakespeare Festival, Boise Contemporary Theater and many more. Simultaneously, Travis performs stand up and sketch comedy at various venues in the Northwest. In 2012, Travis created the Hank Patterson video series and has been performing as Hank. Hank Patterson has been featured in American Angler Magazine, Fly Fisherman Magazine, on the F3T Fly Fishing Film Tour, the IF4 International Fly Fishing Film Tour, and on various industry-leading blogs, podcasts and digital magazines. Additionally, Hank has been embraced and sponsored by industry-leading companies and organizations such as Orvis, Trout Unlimited, Smith, Simms, Montana Fly Company, Big Sky Brewing and more. Travis will provide insight on how to use humor in communication along with other social media to broach polarizing issues in science.



2020 ICAFS Annual Meeting Is Coming!

David Rubenson



David Rubenson is the director of the scientific communications firm Nobadslides.com. Prior to that, he was Director of Administration and Planning at the Stanford University Cancer Institute, Director of Special Projects at City of Hope Cancer Center, strategic planning consultant to the UCLA Brain Research Institute, and a member of the RAND Corporation's Engineering and Applied Sciences Department. David states that efforts to encourage better public outreach are admirable, but better communication between scientists must come first. David will share his thoughts on how we as scientists need to remember a few key things when communicating our research.

Patrick Cooney



Patrick Cooney, a fisheries professional working for Smith-Root and founder of "[The Fisheries Blog](http://TheFisheriesBlog.com)", volunteers with fish scientists from across the globe to write and publish an online open access article every Monday morning. The more than 350 articles written over the last 8 years in collaboration with University, Local, State, Federal, Tribal, Private, and Non-Government Organization scientists have been read by millions of people. Patrick will share with us how to "Cast a Wide Net" and effectively communicating our science to a broad audience.



2020 ICAFS Annual Meeting Is Coming Soon!

ICAFS ANNUAL MEETING

March 10-13, 2020 - Coeur d'Alene

Are you ready for this?!?!

We will be gathering at the world-renowned [Coeur d'Alene Resort](#) overlooking beautiful Lake Coeur d'Alene in Idaho's Panhandle. President-Elect Ryan Hardy has planned an awesome program chock-full with educational workshops, amazing plenary speakers, interesting technical sessions, engaging professional and student networking opportunities, and of course the infamous Spawning Run! Check out the program [here](#). There is a Carpool link at the bottom of the [meeting page](#) for those trying to save on travel. Those willing to accommodate passengers should also sign up.

The early registration period ends February 10. THAT'S JUST AROUND THE CORNER SO MAKE YOUR PLANS SOON!! Late registration will end on February 28. After that, you can pay at the door. Click [here](#) to make your registration.

For the first time, ICAFS is offering a single-day registration option. The entire fee schedule is as follows:

Registration Type	Student	Young Professional	Professional AFS member	Professional-Non-AFS	Retiree	Single Day
Early	\$0	\$40	\$275	\$375	\$40	\$125
Late	\$0	\$50	\$325	\$425	\$40	\$125
At the Door	\$100	\$200	\$375	\$475	\$100	\$125

A Message from the Fundraising Committee

As the 2020 Meeting draws near, the Fundraising Committee is stepping up their effort to organize our annual raffle and auction. We are always interested in donations from our members to make the event a success. If you are planning on bringing a donation to the event, please help the Fundraising Committee by letting them know in advance. If you would like to donate, please email to phil.branigan@idfg.idaho.gov describing your donation, its approximate value, and whether it will be a silent auction or raffle prize. Gift baskets, event tickets, fishing tackle and gift certificates are a great way to contribute and raise money for Chapter activities and student scholarships! Please consider donating and we look forward to seeing you in Coeur d'Alene!

-Martin Koenig



2020 ICAFS Annual Meeting

Continuing Education

Three workshops will be offered at the 2020 ICAFS annual meeting.

Gill Net Design and Gill Net Selectivity Workshop

Instructor: Dr. Zach Klein, Emporia State University

Gill nets and gill net sampling are a ubiquitous part of inland fisheries management. However, the mechanisms by which gill nets capture fish and the influence those processes can have on size selectivity in gill nets are often misunderstood. In this half day workshop, we will discuss general gill net configurations and the factors influencing capture and retention of fish in gill nets. In addition, we will take an in depth look into modeling size selectivity in gill nets using R statistical software. The workshop is designed to give attendees a better understanding of how gill nets function and how to adjust gill net data for size selectivity. Attendees should have a familiarity with the basic function of R statistical software. All data and R packages will be provided, but attendees will need to bring a laptop with the latest version of R statistical software.

Integrated Broodstock Management Multiple instructors

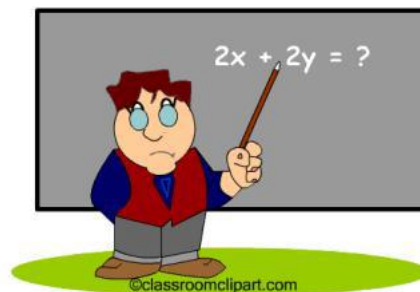
This full day workshop will focus on managing broodstock within in Idaho's diverse hatchery programs. Presenters from the University of Idaho, private sector, tribal, and federal and state agencies will discuss a variety of broodstock management subjects and applications for resident and anadromous species. Topics will include: nutrition, genetic improvement, selective breeding, fish health considerations, commercial production, spawn timing/manipulation, applied management, data tools and interagency collaboration.

Stage 0 Habitat Restoration Short Course

Instructors: Brian Cluer Ph.D., Fluvial Geomorphologist, NOAA Fisheries West Coast Region; Paul Powers, Fisheries Biologist, Deschutes National Forest

Stage 0 is a term coined by Cluer and Thorne (2013) to describe a pre-disturbance phase for alluvial river systems that is characterized by a network of anabranching channels or no channel at all (e.g. mountain meadows). This 1-day short course will give the scientific background and ecological basis for Stage 0, followed by a brief introduction to the suite of methods currently used to design and implement restoration. Methods will be reviewed but with limited time available, we will largely focus on showing examples, including construction and outcomes. The physical and ecological response in each of these projects has been quite dramatic. All these projects have resulted in an elevated alluvial aquifer, which supports a robust riparian community and increased connectivity at all discharge levels. In addition to these course monitoring metrics, researchers are taking an in depth look at physical and ecological transformations on a subset of these projects. Project monitoring is focusing on food web mosaics, fish utilization and changes to physical habitats including temperatures, velocities and nutrient retention rates.

-Carson Watkins

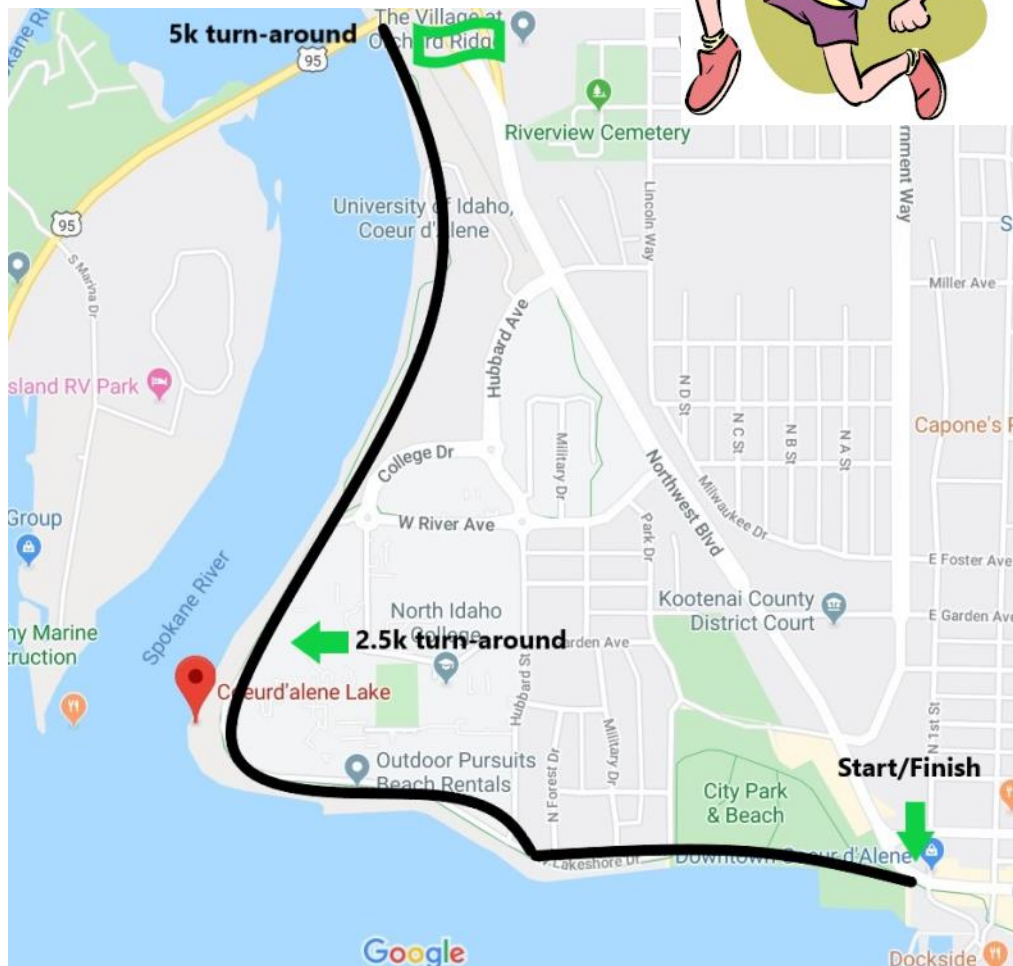


2020 ICAFS Annual Meeting

Spawning Run

Come stretch your legs at the 2020 Biomark ICAFS Spawning Run! With 5k run, and 2.5k stroll options there is something for everyone. This year's event will begin at 4:30 PM Pacific on Wednesday, March 11th. This out-and-back run/walk begins in the parking lot just west of the Coeur d'Alene Resort and follows the North Idaho Centennial Trail along the beautiful shoreline of Lake Coeur d'Alene. Register ahead of time to secure the coveted Spawning Run T-shirt. Prizes will be awarded to top finishers! See you there!

-Micah Davison



2020 ICAFS Annual Meeting Executive Committee Candidates

We owe all candidates a debt of gratitude for being willing to step forward and serve our chapter. These positions are important to the smooth functioning of ICAFS. Thanks!!! –Editor.

Vice President

Steve Anglea– Steve is currently the Director of Technical Services for Biomark, Inc. and has been a

member of AFS for almost 25 years. He grew up in Wisconsin and received a B.S. in Zoology from the University of Wisconsin-Madison. He worked at the Center for Limnology spending many nights conducting hydroacoustic and gill net surveys on Lake Mendota. He migrated west in 1990 and worked as a Fishery Observer in Alaska, conducted hydroacoustic surveys at hydroelectric facilities on the Snake River and snorkeled streams in Idaho, Montana, and Washington looking for bull trout. Steve received a M.S. in Fisheries Resources at the University of Idaho 1996 and was co-president of the Palouse Subunit of ICAFS. More recently, he was the Secretary/Treasurer for ICAFS (2014-2016) and part of the Fundraising Committee (2017-2018). He has been with Biomark for almost 18 years and during this time has had the pleasure of working with Fisheries biologists and managers in Idaho, the US, and abroad helping to design and innovate RFID monitoring systems and software to answers questions that remained unanswered or that biologists did not know existed. He looks forward to bringing his perspective and experiences to the Idaho Chapter if elected Vice President.



Rob Van Kirk– Rob Van Kirk is Senior Scientist with the Henry's Fork Foundation, a nonprofit conservation organization in Ashton, Idaho. He is also Professor Emeritus of Mathematics and Statistics at Humboldt State University in Arcata, CA. He earned a B.A. in Mathematics and an M.S. in Environmental Systems from Humboldt State University and a Ph.D. in Mathematics from the University of Utah. From 1994 to 1998, he served as founding Research Director at the Henry's Fork Foundation, establishing a widely recognized program of watershed research and monitoring. He then spent nine years on the faculty of Idaho State University and five years at Humboldt State University before returning to the Henry's Fork Foundation. Dr. Van Kirk has been active in collaborative fisheries and water-resources research and management in the Snake River basin since 1994, providing technical consulting services to agencies and nongovernmental organizations, participating in watershed stakeholder organizations, and pursuing research funded by numerous agencies. He has authored or co-authored over 30 peer-reviewed publications and dozens of technical reports. He gave his first presentation at an ICAFS meeting in 1995 and has been an active member ever since, serving as Secretary/Treasurer in 2002-2003. In 2008, ICAFS presented him with the R.L. Wallace Native Fish Conservation award for his work on the South Fork Snake River. If elected Vice President, Rob looks forward to contributing his broad interdisciplinary experience to the long tradition of strong ICAFS chapter leadership.



2020 ICAFS Annual Meeting Executive Committee Candidates

Secretary/Treasurer

Matt Corsi- Matt is a Principal Fishery Research Biologist for IDFG in Coeur d'Alene. Before coming to IDFG, Matt completed a PhD in Fish and Wildlife Resources from the University of Montana and a B.S. in Fishery Resources from the University of Idaho. Matt was spawned in temporary housing at Palisades Dam and, as an egg, was transferred to Hayspur Fish Hatchery until swim-up. Idaho fisheries and ICAFS have been part of his life for his entire existence. After surviving the juvenile life stage, Matt had temporary positions with IDFG and the USFS Rocky Mtn Research Station from 1999-2003. In late 2003, Matt began a two year stint with the University of Idaho as a research technician on the Lower Snake River, dredging mud samples and counting invasive plants. In 2005, Matt moved to Missoula to begin graduate work on the fishery management consequences of hybridization between Cutthroat Trout and Rainbow Trout in the Jocko River. While in Missoula, Matt also served as an NSF GK-12 Fellow working with elementary teachers to develop science education tools for kids. He served as consultant for Grand Teton National Park, developing a Fishery Management Plan for the Gros Ventre River. Matt returned to his natal state of Idaho in 2011, but strayed into the Clearwater basin. There he enjoyed a recruit per spawner ratio of 1.0 whilst serving as a Regional Fishery Biologist monitoring at Lower Granite Dam, serving on the Idaho Supplementation Studies wrap-up team, and dabbling in resident fish management. In Matt's current position, he supervises the IDFG Large Lakes and Reservoirs Research subsection. As an ICAFS member, Matt served as Continuing Education Chair from 2013-2018. Matt is looking forward to an opportunity to continue to give back to ICAFS and provide outstanding internal and external customer service as Secretary/Treasurer.



Lytle Denny- Lytle is a fisheries professional and Native American that wants to help diversify the ICAFS-EXCOM. Lytle attended his first ICAFS meeting in the early 2000's and quickly realized how cool it is to be a fish head. As a biologist with more than 20 years of fisheries experience, Lytle has helped the Shoshone-Bannock Tribes implement policies that work to protect, enhance, and restore native fishes of Idaho. When he's not managing multiple restoration projects, coordinating with various tribal, state, and federal agencies, working on his MS thesis, or raising four children, Lytle can be found downhill skiing, chasing big game, collecting shed antlers, or dropping birdies at the links. He is humbled to be nominated for secretary/treasurer and looks forward to advancing the mission statement of the ICAFS in addition to providing a greater foundation for Native American involvement in the chapter; an area that he believes is under-represented.



2020 ICAFS Annual Meeting Executive Committee Candidates

Nominations Chair

Keats Conley– Keats Conley is an Environmental Staff Biologist for the Idaho Department of Fish and Game's Magic Valley Region. A native of Idaho, she received her B.S. in Environmental Studies from the College of Idaho in Caldwell (Go Yotes!). She then pursued graduate school in marine biology at the University of Oregon, where she studied gelatinous zooplankton feeding mechanisms. Anadromous fish drew her back home to Idaho, where she worked on Chinook Salmon and steelhead supplementation in Panther Creek with the Shoshone-Bannock Tribes. She recently published her research on the efficacy of these supplementation efforts in the North American Journal of Fisheries Management. Still a relative newcomer to the fisheries world, Keats hopes to get the chance to serve as the Nominations Chair to get more involved in the Idaho Chapter and to help facilitate diverse representation of its Executive Committee.



Nick Porter– Born and raised in Northern Idaho, Nick was enthralled with the outdoors at an early age. This love of nature, hunting, and fishing led him to the University of Idaho where he earned a B.S. in Wildlife and a B.S. in Fisheries Resources. While attending the University of Idaho he gained field and lab experience working on various projects while assisting Dr. Mike Quist and his graduate students. After graduation from the University of Idaho Nick worked as a fisheries technician for five years at different agencies including the University of Idaho, Idaho Fish and Game in the Panhandle and Southwest regions, and Idaho Power. While this time was of great importance to build his resume and gain experience, he had a yearning to return to school and pursue a Graduate Degree. Nick was accepted to the University of Wisconsin - Stevens Point (UWSP) in 2017 where he researched maximizing capture efficiency of Lake Sturgeon at the Menominee River fish elevator. He completed this research in 2019 and graduated with his Master of Science (Natural Resources) from UWSP. While at UWSP Nick served as the student subunit secretary for the North American Sturgeon and Paddlefish Society. Here he was exposed to fundraising, meeting preparation, recruitment of new members, and outreach to the general public about conservation and fisheries science. Upon graduation, Nick accepted a job with Biomark Applied Biological Services in Boise researching juvenile Chinook salmon survival and habitat selection in the Salmon and Lemhi Rivers. Nick also is a mentor in Boise for the Mayfly Project which uses fly fishing as a catalyst to mentor children in foster care. Nick has been very fortunate to work with great people and mentors over the years and has been an active member of the American Fisheries Society since 2012. Nick's experience working for state, federal, and private agencies combined with his outgoing personality make him an ideal candidate for this position.



Palouse Student Unit Update

Fall 2019 ended up being the "Semester of the Sturgeon" for the Palouse Unit of the American Fisheries Society (PUAFS). We hosted three professional speakers that all discussed sturgeon from different parts of the country and students participated in White Sturgeon sampling on the Snake River. Students also participated in several fly-tying nights and gillnetting on Lake Pend Oreille. Additionally, PUAFS teamed up with University of Idaho's student chapter of The Wildlife Society for a "How to get to grad school" seminar that was open to all fish and wildlife students. We had 30 attendees at that seminar.

Spring semester is looking like it will be just as busy. We will have another series of speakers including Marika Dobos (Idaho Department of Fish and Game) and Jay Hesse (Nez Perce Tribe). We will be continuing fly-tying nights throughout the semester and we are busy preparing for the annual Wild Game Feed. This year the Wild Game Feed will be on April 17th at the 1912 Center in Moscow, ID. Hope to see you all there!

- Darcy McCarrick

BYU-Idaho Student Unit Update

We have had a lot of good professional presentations given to our subunit here at BYU-Idaho since our last update. We had Conor McClure, IDFG Anadromous Fisheries Biologist and BYU-Idaho alum, come and speak to our students about what his experience was graduating from BYU-Idaho and his transition to graduate school and finding a job. We also brought in John Heckel who is a new IDFG Regional Fisheries Biologist in Idaho Falls to present his M.S. project. Because we are an undergraduate-only university, John answered a lot of questions and showed our undergraduates what a master's project looks like and the kind of work it involves. Most recently, Patrick Kennedy, another local IDFG Regional Fisheries Biologist, came and spoke about the Yellowstone Cutthroat Trout conservation project with Rainbow Trout suppression in the South Fork Snake River.

For things to come, we have an ice fishing activity that IDFG is helping us put on a couple weeks from now. We want to expose some of our subunit members to ice fishing who may be new to fishing in general, or who are from warmer climates who have never had a chance to ice fish. We are also gearing up for the upcoming ICAFS meeting and we are working on our presentations and posters for everyone to enjoy. We are looking forward to seeing you all at the meeting!

- Drew Suchomel



Portneuf Student Unit Update

The students from the Portneuf Unit have had the opportunity to be a part of a couple of different activities over the last month. First, a few members of the group got together for a little winter retreat to a camp site known as Camp Taylor, which sits underneath Scout Mountain just south of Pocatello. They snowshoed into the remote cabin, shared good times, and did a little planning for the annual ice fishing derby. Second, the club held our annual ice fishing derby on January 25th, held at Sportsman's Park on American Falls Reservoir. We had 150 contestants and the winning rainbow trout was 23 1/2" (596.9 mm), while the winning Perch was 12 3/8" (314.33 mm). Everyone had a great time and most importantly everyone ended up home safe.

-Ryan Whitworth



Above- Portneuf Unit members at the winter retreat, from left to right: Ryan Whitworth, Lizzy Jossie, Anna Ringelman, Ben Kline, Brandy Smith, Rachel Brinkley, and Camden Kay

Left- The winning rainbow trout at the Portneuf Unit's annual ice fishing derby.



Student Spotlight Hannah Bluth

Hannah Bluth is currently a junior at BYU-Idaho where she is majoring in Plant and Wildlife Ecology with an emphasis in Fisheries. Hannah has taken an unorthodox path to the fisheries profession. After finishing high school in Arizona, Hannah spent five years as a hairdresser. However, she started taking classes at a community college and decided it was time to pursue other passions. Last year, Hannah transferred to BYU-Idaho and fell in love with fisheries while volunteering on a fisheries project on South Fork Teton River. Hannah then accepted an opportunity as a fisheries technician with US Forest Service with Bart Gamett as a mentor. While working for Bart, Hannah completed a project studying crayfish distribution in the lost streams of Idaho (look for her poster at the annual ICAFS meeting in Coeur d'Alene). Hannah is looking forward to getting back in the fish trap on the South Fork Teton River in March. She is also seeking a fisheries technician position for the summer to continue gaining experience and learning about the fisheries profession. After completing her undergraduate degree, Hannah is planning on pursuing a Master's degree in fisheries to help her prepare for a career as a fisheries biologist.



Student Spotlight

Rachel Brinkley

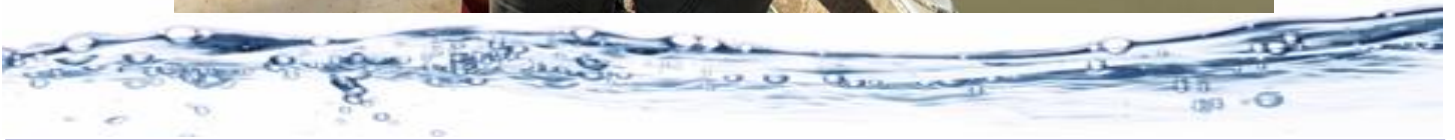
Rachel Brinkley is a graduate student currently pursuing a Master of Science in biology from Idaho State University. She is currently the treasurer of the Portneuf Student Unit, has historically served as the secretary and vice president, and has been a member since 2016. Rachel enjoys backpacking and fly fishing. Her graduate research is aimed at reconstructing historical sockeye salmon in the Sawtooth Valley Lakes.



Student Spotlight

Lynsey Harris

Lynsey Harris is a junior at University of Idaho studying Fisheries Resources. She grew up in Baker City, Oregon, where she owned and operated her own sheep farm. This is where she grew to love the outdoors. As she explored new aspects of natural resources, she discovered she was most passionate about fish. In high school, she worked on an aquaponics system that raised primarily Tilapia and Basil. She researched the interaction between the crops and the fish and how it affected the water quality. She worked for Pacific States Marine Fisheries Commission where she fin-clipped and coded wire tagged salmon and steelhead throughout Idaho. She later worked for Montana Fish, Wildlife, and Parks where she worked with a wide variety of species and broadened her experiences with gillnetting, seining, and creel surveys. Lynsey has also been actively involved in the Palouse Unit of the American Fisheries Society. She has attended every meeting and activity and will be attending this year's Idaho AFS Chapter annual meeting. After Lynsey completes her bachelor's degree, she hopes to go to graduate school for her master's degree and then become a fisheries biologist.



Idaho Chapter Student Subunit Presidents



BYU-I Student Subunit President
Drew Suchomel
suc17001@byuidaho.edu



Palouse Student Subunit President
Darcy McCarrick
dmccarrick@uidaho.edu



Portneuf Student Subunit President
Ryan Whitworth
whitrya2@isu.edu



Western Division American Fisheries Society



Save the Date!
Join us for the AFS Western Division Meeting
Hosted by the WA-BC Chapter in 2020
April 12-16, 2020
Pinnacle Harbourfront Hotel, Vancouver, BC
<https://wa-bc.fisheries.org/2020-meeting/>

Mentoring Committee Update

There have been some recent changes in the Mentoring Committee. Jessica Buelow and Lance Hebdon are retiring as committee chairs after five years of service. The Committee thanks them [*as should we all- Editor*]. The new chairs are Robert Hand and Joe Thiessen. Another change is that the Mentoring Committee now has its own email address. All mentoring-related questions should be sent to ICAFS.Mentorship@gmail.com.

The Mentoring Committee is also looking for volunteers at the 2020 annual meeting. Please consider the following opportunities to help:

- Resume reviewers: anonymously review 1-3 student or young professional resumes, provide edits via track changes, return edits in a timely fashion.
- Student mentors: get paired with a student that has similar career objectives to your current professional expertise, provide guidance and feedback to your student mentees inquiry's.
- Mock interviewer: sit on a small interview panel and conduct a 15-20 min mock interview for a student or young professional at the annual meeting.
- Publishing assistance: provide guidance to professionals looking to publish work for the first time.

-Joe Thiessen

Aquaculture Committee Update

The Aquaculture Committee will be hosting a workshop on Integrated Broodstock Management March 10th, 0830-1545 [*see page 6 for a general description- Editor*]. The detailed agenda is as follows.

0830: Welcome/Aquaculture Committee Housekeeping/Course Introduction - AQ Committee Co-chairs

0845: "Broodstock Nutrition and Physiology"- Dr. Brian Small, University of Idaho

0945: "Broodstock Fish Health Considerations"- Dr. Tim Bruce, University of Idaho

1045: BREAK - hot beverages and snacks provided

1100: "Applied Broodstock Management, Genetic Improvement and Selective Breeding"- Dr. Madison Powell, University of Idaho

1200: LUNCH - box lunches provided, please be back promptly at 12:45pm.

1245: "Every Fish Counts: Broodstock Calculator"- Steve Rodgers, Dworshak National Fish Hatchery

1315: "Integrated Broodstock Collection and Management at IDFG Facilities"- Matt Belnap, IDFG

1345: "Photoperiod manipulation for year-round spawning of Rainbow Trout at the Hayspur Hatchery" - Tom Lindenmuth, IDFG

1400: BREAK - beverages and snacks provided

1415: "Sex reversal techniques for Rainbow and Brook Trout broodstock at the Hayspur Hatchery"- Tom Lindenmuth, IDFG

1430: "Challenges with Wild Cutthroat Trout Broodstock"- Wayne Fowler, IDFG

1500: "Sturgeon and Burbot Brood Programs"- Shawn Young and Nate Jensen, Kootenai Tribe of Idaho

-Eric Pankau



WDAFS Scholarships & Grants

The Western Division AFS is pleased to announce that applications for its graduate-level student scholarships are now being solicited. The **Eugene Maughan Graduate Student Scholarship** fund provides up to \$5,000 annually to master's or doctoral students in the general area of fisheries science with one to three awards to individual students. Beginning in 2002, the Sustainable Fisheries Foundation established the **William Trachtenberg Memorial Scholarship Fund**, which augments the Western Division scholarship program. This fund provides up to \$600 annually to a graduate-level student conducting studies on fisheries sustainability. Applications for the Western Division scholarship program will automatically be considered for the Sustainable Fisheries Foundation scholarship program as well. An award committee of five fisheries scientists from the Western Division will make the decision regarding the award of scholarships from both programs. See the [WDAFS website](#) for more information.

Small Project Grants

The WDAFS is currently accepting applications for [funding of small fisheries-related projects](#) in the western USA, US territories, Mexico, and Canadian provinces represented by WDAFS. Grants usually average less than \$1,000 but can help project start-up or supplement funding from other sources. Applications must be emailed to WDAFS Past President, Jackie Watson, no later than **April 15, 2020**. Contact [Jackie](#) at (210) 663-4934 if you have any questions.



Assumptions: Scientific Leaps of Faith

Critical thinking requires that we break down our own reasoning and conclusions about the events and people we observe. Two aspects of critical thinking involve inferences and assumptions. An assumption is a belief based on one's knowledge, experience, and point of view; it may be founded or unfounded, but it is what we think is true. An inference is a conclusion arising from one's observation and the assumption that supports the conclusion. We all make inferences based on our assumptions every day. Scientific study requires leaps of faith when we make inferences about what we observe; we call them assumptions. Often, we do not question our assumptions; sometimes, we don't even think about them. But our scientific assumptions are important because they are the underpinnings of our inferences. Good assumptions lead to good conclusions; poor ones will lead us down error's path. Use of catch-per-unit effort (CPUE) is a common example in fisheries:

Observation: Calculate CPUE by dividing effort into catch.

Inference: CPUE provides an index of abundance.

Assumptions: 1. Catch has a linear dependence on effort; 2. CPUE increases with abundance.

We fisheries folk may use CPUE without much thought to the assumptions underlying our inference with CPUE. But have we tested the catch-effort assumption by plotting catch as a function of the units of associated effort? Do we know, through independent means, that changes in CPUE actually reflect changes in abundance? Our inferences based on CPUE are no better than the validity of our assumptions.

A fascinating example of inference occurred when Randy Brown (U.S. Fish and Wildlife Service-Fairbanks [Brown, R.J. 2007. Freshwater mollusks survive fish gut passage. *Arctic* 60(2): 124-128]) found that freshwater mollusks survived gut passage in Humpback and Broad Whitefish. When one performs a food habits study, we infer that eaten prey is dead prey. That assumption is a safe bet - usually. Imagine Randy's satisfaction when he confirmed living clams and snails in the guts of whitefish; he concluded that the survival might indicate a means of dispersal for the mollusks. Critical thinking might lead us to question our assumption about prey; when eaten, do they only provide food?

Observation: After preservation, examine prey in fish guts.

Inference: Analyze prey items as food content.

Assumption: All prey items die and serve only as food.

Once we think carefully - critically - about our observations, we can reflect on our assumptions and the inferences that arise from them. Take nothing for granted. Nature is a large bag of tricks! (I relied on information from *Critical Thinking: Tools for Taking Charge of Your Learning and Your Life* by R. Paul and L. Elder, 3rd Edition, 2012, Prentice Hall, Upper Saddle River, NJ, for part of this article).

During 2017-2018, Jim Reynolds wrote a series of philosophical articles for *Oncorhynchus*, the AFS Alaska Chapter newsletter. These articles revolve around the role of uncertainty in fisheries science and largely use Alaskan examples based on Jim's experiences. With approval of the Alaska Chapter Excom, these articles are being re-printed in the *Gill Raker Gazette*.

Executive Committee



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The EXCOM wants your ideas ...

Please do not hesitate to contact any EXCOM Member about questions or ideas

This is your Chapter !

