From the Director

Dear Friends,

As I look out of my office window, I see the first snow of 2021—a reminder to me that even with everything that is going on, there is still some normality.

Enhancing SAFS through increased diversity is an ongoing priority—the importance of which has been underscored by events this past year. On pages 2–3, read about some of our efforts and activities to advance diversity, equity, inclusion, and justice in SAFS. I also encourage you to view the seminars from this year’s Bevan Series, which are focused on diversity, equity, and inclusion. These are uploaded to our YouTube channel (youtube.com/UWSchoolofAquaticandFisherySciences).

Sadly, in late 2020, we lost two of our emeritus faculty: Bruce Miller and Glenn VanBlaricom. Bruce passed away at the end of October 2020. A brief summary of his career, along with thoughts from his friends, colleagues, and past students about his role as a mentor and marine biologist extraordinaire are on pages 6–7. Glenn passed away on Christmas Eve 2020. We will include a memoriam for Glenn in our next issue of the newsletter and invite thoughts and comments from his former students and other friends to include in our tribute.

On pages 4–5, we feature three of our long-term staff members who have recently been awarded principle investigator status. Rebecca Buchanan and Jennifer Gosselin, research scientists with Columbia Basin Research, are stepping into the role of leaders of a research group that provides managers and decision makers with the key scientific information needed for the conservation of salmonids throughout the West Coast. We also profile Jason Toft, who took over the leadership of the Wetland Ecosystem Team (WET) after the retirements of Charles “Si” Simenstad and Jeff Cordell (see page 8 to learn more about Jeff and his 40+ years at the UW). Jason and his team conduct research to support conservation and restoration efforts, with a focus on our very own backyard here in Seattle.

Many of you have asked how SAFS is handling the pandemic. Building coordinator Jon Wittouck has worked to ensure that we are able to run some labs (page 10), and some of our fieldwork has also taken place; but, like most of you, our lives are a long

—continued on page 3
Sustainability of DEI Efforts at SAFS

“I am only one, but I am one. I cannot do everything, but I can do something. And because I cannot do everything, I will not refuse to do the something that I can do.”

—Edward Everett Hale

In the midst of a pandemic, civil unrest after a democratic election, and their interconnections to our work, education, and relationships at SAFS, many in the SAFS community are pondering our roles in advancing diversity, equity, inclusion, and justice (DEIJ). These are immensely challenging tasks, which for some may invoke a state of paralysis or exhaustion, and for others a call to action. The SAFS Equity & Inclusion (EI) Committee, which has recently been raised to the status of an official school committee, strives to play a part in making SAFS a welcoming place, where people work together as a diverse and inclusive community.

Several efforts related to DEIJ are in progress at SAFS. For example, the EI Committee has hosted and sponsored several events: an Annual Open Meeting; a virtual screening of the documentary Picture a Scientist, with a follow-up discussion on gender discrimination; and two workshops led by Naheed Gina Aaftaab, assistant director, UW Center for Communication, Difference, and Equity.

In the workshop, “Dominance and difference in knowledge systems,” participants read and discussed Knowledge, Power and Decolonization: Implication for Non-Indigenous Scholars, Researchers, and Educators by Soenke Biermann. In another workshop, “Practicing anti-racism and anti-sexism in education,” participants were asked to reflect on access to certain spaces, such as higher education, and share their own experiences; they also learned practical tools for interrupting micro-aggressions and disrupting discrimination in an academic setting.

Working toward equity and inclusion is a group/community effort, and members across SAFS peer groups have contributed. We have many graduate students and colleagues to thank for proposing a line-up of speakers for the 2021 Bevan Seminar Series on “Diversity, Equity, and Inclusion in Fisheries and Aquatic Sciences,” which can be viewed through recordings on the SAFS YouTube channel.

Staci Amburgey (postdoctoral scholar) led the seminar course, “Cultivating Inclusive Conservation Practices,” which can be viewed through recordings on the SAFS YouTube channel.

The School’s DEI Book Club, facilitated by Julieta Martinelli (postdoctoral scholar), recently read and discussed Ibram X. Kendi’s How to Be an Antiracist. The next book discussion will be co-facilitated by Julieta, Kelly Mistry (graduate student), and Jennifer
From the Director
—continued from page 1

sequence of Zoom meetings, punctuated
by watching cats and other pets invading
screens.

I would like to thank all of our
supporters for their contributions during
the last year (pages 14–15). Your gifts give
the School the ability to support students
who would otherwise not be able to attend
the University of Washington as well as
research projects that are advancing
knowledge but are not yet sufficiently
well developed to be supported through
traditional funding routes. We profile one
of our long-term donors, Chuck McCallum
(CEO of the Chignik Regional Aquacultural
Association) on page 9.

Finally, I would like to highlight a new
fund that will support the Diversity, Equity,
Inclusion, and Justice and Community
Service Recognition Award, a way to
recognize those individuals who are going
above and beyond to make SAFS more
welcoming and successful.

Keep well and keep safe.

—André Punt

Students Explore Aquatic Sciences (SEAS) Open House

Gosselin and will focus on Caprice Hollins & Ilsa Govan’s
Diversity, Equity and Inclusion: Strategies for Facilitating
Conversations on Race.

The SAFS outreach program, Students Explore
Aquatic Sciences (SEAS), aims to increase access to
science for underserved students in the Seattle area; it
is volunteer run by graduate students, undergraduates,
and staff.

Many SAFS members devote time and effort to
DEIJ, and there is now a Diversity, Equity, Inclusion, and
Justice and Community Service Recognition Award to
help highlight, celebrate, and reward these significant
contributions.

There is still much work to be done to increase
DEIJ at SAFS. Based on community engagements and
co-created objectives, the School is moving forward
with a racial equity audit to provide baseline data, give
opportunities to the SAFS community to voice their
perspectives, and produce guidelines for working
toward racial equity in a way that is meaningful and
effective. This will be an important step towards
promoting many dimensions of social justice in the
School. It will be a great opportunity for increased
participation and will be a critical juncture for
maintained engagement from many at our School’s
members. Following the departure of Isadora Jimenez-
Hidalgo (see DEI article in the Spring-Summer 2020
SAFS newsletter), SAFS is in the process of hiring a new
diversity specialist, who will help support DEIJ efforts at
the School.

The EI Committee is excited to work with the entire
SAFS community (past and present) to make SAFS a
place where diversity is celebrated within a vibrant hub
of discovery and innovation. Please feel free to reach
to the EI Committee at safsinc@uw.edu, visit the
SAFS DEI website, and stay tuned for further announce-
ments of upcoming events.

—continued from page 1

Students Explore Aquatic Sciences (SEAS) Open House

Students Explore Aquatic Sciences (SEAS) Open House

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Students Explore Aquatic Sciences (SEAS) Open House

Students Explore Aquatic Sciences (SEAS) Open House
REBECCA BUCHANAN
After Rebecca earned an AB in Mathematics, she explored teaching secondary school math, but it was not a good fit. However, it was her first real experience with probability and statistics, which she really enjoyed. Since childhood, she had been interested in both ecology and the environment, so Quantitative Ecology & Resource Management (QERM) was a natural fit, a unique program that combined her two primary interests. “I found the work fascinating (and fun!) and the people friendly and supportive,” she said.

At Columbia Basin Research (CBR), Rebecca helped develop analytical tools for interpreting tag data from large salmon and steelhead studies in the Columbia and Snake river basins. She also helped develop a branching model to estimate cohort survival of juvenile fish moving out of estuaries into the mainstem river. These programs were inspired by real needs of fisheries and hydropower managers and were collaborative efforts with others at CBR—including founding PI John Skalski, programmer Jim Lady, and analyst Rich Townsend.

In recent years, Rebecca has focused on monitoring survival of juvenile salmon and steelhead through the Joaquin River Delta in California. She said that efforts to improve survival by modifying water project operations have had surprisingly little benefit for salmon coming from the San Joaquin River, although there is considerably more potential for steelhead.

Rebecca found that installation of a temporary rock barrier to block off one of two major migration routes can help steelhead get through the system—it appears that the benefit of the barrier is the diversion of water into an accessible route. Surprisingly, the barrier does not appear to help the salmon, perhaps because their survival is much lower overall.

As a new PI, Rebecca looks forward to working with students in SAFS and QERM. She and Jennifer Gosselin are also talking about how they can engage the wider public—school students and interested citizens—in learning more about salmon in their local communities. She said, “This type of outreach helps inspire future scientists and decision-makers, who we will need if we are to maintain and restore native fish populations while meeting clean energy goals to combat climate change and support our economy.”

Outside of work, Rebecca has been singing in the Seattle Choral Company (SCC) since 2001. She said, “The SCC has provided both a musical home and a warm community that I treasure.”

JENNIFER GOSSELIN
Jennifer came to SAFS for her PhD to study with Jim Anderson, working on a salmon project in the Snake and Columbia rivers. She said, “My eyes opened up to interactions across different habitats of the salmon life cycle and what part humans play in various stages.”

As a research scientist at CBR, Jennifer has been examining freshwater, marine, climate, biological, and anthropogenic indices with direct effects within life stages and carryover effects across life stages. She is also investigating which relationships may have worked...
well historically, which correlations are breaking down over time, and how one could interpret these changes in ecological research and decision-making contexts.

Jennifer noted that, “At CBR (founded by Skalski and Anderson), we make real-time data and models accessible to scientists, decision makers, managers, and the public through our website (www.cbr.washington.edu).” She now thinks deeply about access to information: who CBR aims to serve and how to do so in a respectful manner to strengthen relationships.

In her new role as PI, Jennifer co-directs CBR with Rebecca Buchanan. She is learning about how CBR has existed and adapted in the last three decades, and is thinking more broadly, given our current challenging times of the pandemic, inequities, and climate change.

Currently, Jennifer is co-chair of the SAFS Equity & Inclusion (EI) Committee. She said, “As each member [of SAFS] feels safer to give their best and their all, our School will be more fulfilled, vibrant, and richer in its scientific/educational contributions and community service. Imagine a space in which it is not only safe to ‘fail forward,’ but where we are encouraged to do so. We learn from our mistakes and innovate more quickly.” She notes that it is important to maintain our efforts (see EI article on pages 2–3).

Jennifer is fluent in English, French, and Vietnamese. Recently, through United Nations Online Volunteering, she translated a proposal about natural resource management in Burkina Faso from French to English, helping the authors reach a wider audience for potential funding. She hopes to continue connecting with people and cultures in which these languages are immersed.

JASON TOFT

Jason Toft has been a research scientist on the Wetland Ecosystem Team (WET) since he earned an MS at SAFS in 2000. His research is focused along urban shorelines and the interactions of people and nature. One change Jason noted since he first came to WET is that, “Many funders and collaborators are more concerned with topics of ‘applied science’ than when I started out.”

Over the years, Jason has become increasingly involved with funding and leading research activities. He said his new role as PI brings more responsibility for leading the lab and securing grants and “the freedom to pursue research interests, whatever they may be, and broaden WET’s collaborations with other groups.”

Charles “Si” Simenstad and Jeff Cordell were Jason’s main mentors over the years, doubling as his colleagues and friends. Jason is interested in continuing to mentor undergraduates in their capstone research, serve on graduate committees, give guest lectures, and offer research opportunities for students within WET laboratory and fieldwork activities.

Jason said shoreline restoration actions at the Olympic Sculpture Park were instrumental for WET to use as a case study to inform more recent eco-engineering shoreline restoration along Seattle’s downtown seawall. He finds it interesting to measure how different restoration actions work, and this can and is being used to inform future efforts worldwide.

Jason strives to involve volunteers from the community during fieldwork data collection. He said, “This addition of citizen scientists, in partnership with our UW students and staff, brings a perspective that is important in championing our work and building a network of concerned citizens, as well as academics and agency partners.” Jason added that WET researchers increased their collaborations with citizen scientist groups, especially as related to shoreline restoration in Puget Sound, by making monitoring protocols and data more available to non-academic scientists (shoremonitoring.org).

When asked what he does in his free time, Jason replied that he has played drums his whole life and that, “Even though my kids bang on them as much as I do nowadays, music will always be a part of me.”
On 31 October 2020, Bruce Stuart Miller, SAFS professor emeritus, passed away at the age of 84.

Born in Worcester, Massachusetts, Bruce was raised in Iowa City, Iowa, with his three brothers. He studied chemistry and biology at Grinnell College and did his graduate research at UW Fisheries (MS 1965, PhD 1969), where he studied the life history of flathead sole off Orcas Island, Washington.

Bruce was a cherished member of the SAFS faculty for 45 years. He was a professor for 27 years, retiring in 2002; he continued his passion for his field of study for 18 more years as professor emeritus. He was widely known and highly regarded for his expertise on the biology, ecology, and life history of marine fishes. Many of his students have gone on to successful careers in aquatic and fishery sciences.

Bruce's contributions to marine biology are extensive. His 2009 textbook, *Early Life History of Marine Fishes* (Arthur Kendall, Jr., co-author), continues to influence and inspire marine scientists. He published two of the School's Fisheries Research Institute's (FRI) most requested technical publications: a 1980 atlas on the geographical distribution of Puget Sound fishes (Steven Borton, co-author), and a 1987 characterization of a Puget Sound marine fishes data survey (Lawrence Moulton, co-author).

Bruce served as FRI interim director from 1984 to 1986, after FRI Director Robert L. Burgner retired. In 1987, he became director of FRI's Division of Fishery Science and Management. Bruce also spent much time—as a student and as a professor—at UW's Friday Harbor Labs (FHL) on San Juan Island conducting research, teaching marine fish biology and ecology courses, and mentoring undergraduates in FHL's research apprenticeship program. The San Juan Islands were his favorite place to work and a fantastic location to raise his family and go scuba diving.

Close friend, colleague, and collaborator Don Gunderson (SAFS professor emeritus; PhD 1976) elaborated on Bruce's work: “He was interested in early life-history stages, which led to the book he wrote with Art Kendall.” Bruce strongly influenced Don: “I had mainly studied oceanic [fishes], but he lured me to FHL and the Salish Sea, which became my major research focus.” When Don told former FRI faculty Steve Mathews (PhD 1977) about Bruce's passing, Steve put it succinctly: “A straight shooter always.”

Kerim Aydin (PhD 2000 and former SAFS postdoc supervised by Bruce) oversees the Alaska Fisheries Science Center's (AFSC) Resource Ecology and Ecosystem Modeling Program. He said “Bruce worked with AFSC’s decades-long groundfish food habits...
program. His work and support have left a legacy of one of the largest collections of groundfish food habits data in the world, consisting of over 350,000 predators sampled.” Kerim noted that Bruce was involved as recently as September 2020: “He helped review the lab’s COVID reintroduction procedures to ensure staff safety.” Bruce also supported SAFS students through AFSC projects, including groundfish reproductive biology and fish food habits studies.

Bruce was graduate committee chair and a very special mentor, colleague, and friend to two generations of the Buckley family—Ray (PhD 1997); his wife, Marta Gomez-Buckley (MS 2000); and his son, Troy (MS 1995).

Ray, SAFS affiliate faculty member with 45 years at the Washington Department of Fish and Wildlife (WDFW), remembers Bruce as first and foremost a professor for the students. Ray said: “Bruce supported us throughout our graduate careers. His expertise on marine fishes was unique at SAFS.” Ray added, “He always greeted you with a warm smile and gave freely of his knowledge.”

Marta remembers Bruce as a gentle giant “in stature and expertise.” She said, “He was someone you could trust. He listened and guided you through challenging graduate life with respect.”

Troy, recently retired from NOAA Fisheries, and his wife, Kristin, held a memorial for Bruce off the San Juan Islands: “It was a beautiful day to reflect on the quiet guidance from Bruce that I so appreciated as an undergraduate, a graduate student, and a colleague.”

Bob Lauth (MS 1987) credits Bruce with teaching him skills he applied across much of the eastern Pacific. He summed up: “Bruce’s memory lives on in my mind in all those places.”

Wayne Palsson (MS 1984) said, “He opened up doors for me, especially for marine fish research in Puget Sound and Alaska. Like many of Bruce’s students, I worked on marine fish ecology and groundfish biology throughout my career.” Wayne also worked with several of Bruce’s students, including Ray Buckley and Bob Pacunski (MS 1990) at WDFW. He summed up: “I thank Bruce for the many foundational lessons he taught me, which I apply every day.”

Bruce served on Susanne McDermott’s graduate committees (MS 1994, PhD 2003). She observed that he “understood how fish reproductive ecology and early life history shapes the behavior, distribution, and population dynamics of fish.”

Bruce at Friday Harbor, 1977

employee, added, “He was meticulous and expected the same from his students and colleagues. His down-to-earth approach and sense of humor made him a great person to work with.”

Bruce met his wife, Aase Marie, while they were working at UW Fisheries in the early 1960s. They were married for 55 years, and for both of them, family was the center of their world.

Bruce is preceded in death by his wife and survived by his brother, Bill; his two children, Catherine and Craig; and three grandchildren, Soren, Andreas, and Sarah.

Donations in Bruce’s name can be made to the Friday Harbor Labs Discretionary Fund: fhl.uw.edu/about/community/scholarship-fellowship-funds

“Bruce loved marine fishes. His teaching and research philosophy was organic and always had a foundation in field work, whether it was in, on, or near the water. Among his favorite research tools were plankton nets, scuba diving, beach seines, and otter trawls.”

— Bob Lauth (MS 1987)

“Bruce was a great advisor and mentor to me, and just an all-around wonderful person.”

— Bob Pacunski (MS 1990)

“I was Dr. Miller’s graduate student from 1983 to 1987. He was a great advisor to me. With great patience, he improved my writing for technical reports. I remember he was always a humble gentleman. He will be missed.”

— Mei-Sun Yang (MS, 1987)
When Jeff Cordell was around nine years old, he decided that he wanted to be a marine biologist. Growing up near Puget Sound, he spent many summer and weekend days at the beach and in the water, collecting and identifying all kinds of invertebrates.

Later, as an undergraduate at Huxley College of Environmental Studies, Jeff worked in a lab, sorting and identifying biota from Puget Sound beaches; he also spent three summers working in the Arctic, collecting invertebrates before oil drilling commenced there.

After graduating from college, Jeff got a job at the (then) School of Fisheries, working at the Big Beef Creek research station, sorting and identifying salmon diets and invertebrate samples, and being part of impact studies of the new Trident submarine base on Hood Canal. This was the start of his collaborations with Charles “Si” Simenstad and the Wetland Ecosystem Team (WET), which have lasted for 43 years. Jeff eventually became manager of the taxonomy lab on campus, got his MS, and became a SAFS principal investigator.

When asked about his most memorable projects, Jeff named several favorites: conducting plankton surveys in west coast estuaries; working with the Smithsonian Institution to investigate patterns of invasive invertebrates along the east and west coasts of the United States; evaluating floodplain and estuary restoration efforts throughout the region; conducting a study of non-indigenous organisms being discharged from ships’ ballast into Puget Sound; and working on long-term studies of the biology and ecology of the lower Columbia River. Recently, Jeff has been monitoring the function of restored wetlands within Seattle’s industrialized Duwamish waterway and also developing and implementing fish-friendly habitat that has been incorporated into Seattle’s new seawall.

Jeff said, “It is great to be able to give something back to my home region.”

Jeff credits SAFS and WET for giving him the opportunity to have a non-traditional career in an academic setting. He explained, “As a non-faculty researcher, I would guess that there aren’t too many places that would have allowed me to stretch intellectually and go on to lead my own research and to mentor and support graduate students.” He also emphasized that his relationships with faculty, colleagues, and students have been special to him.

Jeff said that over his 43 years at SAFS, “The biggest changes are the complete turnover in faculty and the broadening in focus from research on aquaculture, fish stocks, and fisheries to more holistic ecosystem studies.” He noted that, in a more general sense, “the biggest change has clearly been the development of technologies in computers and monitoring equipment.”

Jeff feels fortunate that his retirement plan allows him to return to the UW as a part-time employee. He plans to continue his work with students and staff on his favorite research projects.

“For over 40 years, Jeff has been a uniquely strong collaborator and research initiator for WET. He and I have integrated our scientific curiosities over diverse estuarine/coastal ecosystems—his infinite detail of epibenthic and pelagic invertebrate taxonomy and ecology inter-facing with my wider view of food webs and estuarine habitat associations. We have collaborated on journal publications and innumerable technical reports. Although he is stepping back from full-time academic pursuits, I expect that he will continue to contribute rare insights into the ecology of these unique estuarine fauna.”

—Charles “Si” Simenstad, Professor Emeritus
Donor Profile

This article is adapted from a digital conversation that Chuck McCallum (Chignik Regional Aquacultural Association) and Danna Bowers (Advancement, College of the Environment) had recently.

The Chignik Regional Aquaculture Association (CRAA) has been involved with the Fisheries Research Institute (FRI) for 40+ years. (FRI’s title changed to Alaska Salmon Program (ASP) in the late 1990s, but the old name is still commonly used in Alaska.) The funding CRAA provides helps FRI maintain important fisheries research in Chignik as well as educate future fisheries scientists.

The CRAA has gained tremendous knowledge from the ecological work that FRI and ASP researchers have conducted on two sockeye salmon runs that annually return to the Chignik River drainage on the South Alaska Peninsula. These runs are the life-blood of a major local salmon fishery. Further, they are culturally and economically essential to five coastal Chignik Native villages.

Chuck McCallum, the Chief Executive Officer of CRAA since its inception, has helped oversee the organization’s gifts to SAFS. Since that time, CRAA has been giving to the UW through the Chignik River Fund, which focuses on research in the Chignik River System.

When asked what prompted CRAA’s first gift to SAFS, Chuck replied, “At CRAA’s founding in 1990, we were aware of FRI’s history of high-quality fisheries work in the Chignik area. The local villagers told us that FRI scientists worked well with them and had their confidence.” He added, “At the time, the most helpful and influential FRI scientists at Chignik were Don Rogers (former professor) and Greg Ruggerone (PhD 1989).”

Through FRI’s field work and ensuing publications, CRAA has gained a better understanding of how Chignik’s two salmon runs interact and how the salmon are adjusting to several major natural watershed changes since the 1960s, and of course, to climate change. This information will aid in evaluating whether the Alaska Corps of Engineers, in cooperation with local villages and stakeholders, should go forward with restoration projects aimed at preventing further impact to the health and viability of these sockeye runs.

In addition to habitat evaluation studies in the Chignik River drainage, FRI has been assisting fishery managers at the Alaska Department of Fish and Game. FRI has been providing cutting-edge real-time tools to help ensure that Chignik’s sockeye runs meet escapement targets, and surpluses are available to the commercial and subsistence fishers in season.

Chuck said that, “without reservation, FRI has always done first-class fishery science in Chignik. It is highly respected by the members of CRAA and the local Chignik villages.” He continued, “FRI is non-political and has always been direct and honest in addressing issues involving the Chignik sockeye salmon.”

Chuck commented, “All of our experiences with FRI have been worthwhile and professional.” He described Daniel Schindler (SAFS professor) as a “no-nonsense world-class salmon scientist.” Chuck said that Daniel shares his knowledge—not only with CRAA staff, but also with the fishing community. In season, Daniel comes across as tireless, and he is there for CRAA practically 24-7. He said, “Daniel has an innate ability to present complicated information and analyses in a manner that most everyone can grasp rather easily,” which Chuck said is important, especially at public meetings, including those with the Alaska Board of Fisheries.

“The money CRAA has gifted to FRI has always been used wisely and efficiently to safeguard Chignik sockeye salmon habitat and to advance production and management efficiency. This aligns well with CRAA’s purpose, goals, and objectives. When we have non-allocative fisheries issues and questions, including future run strengths, watershed status, and sockeye rearing conditions, FRI staff is always there for us.”

—Chuck McCallum, Chief Executive Officer, CRAA
Keeping SAFS Running During a Pandemic

Up until last March, the classrooms, labs, offices, and even the hallways and lobbies of the Fishery Sciences and Fisheries Teaching and Research buildings were bustling with the regular activities of a vibrant academic unit. During this past year, however, our daily routines have changed dramatically; our days now consist of Zoom calls and juggling an increasingly stressful work/life balance at home.

Amidst all of these changes, building coordinator Jon Wittouck’s role has become even more vital. Jon, along with co-worker Jason Ching, is still coming to campus nearly every day, working behind the scenes to ensure that the SAFS facilities are safely maintained and operations are running smoothly for critical employees.

Jon explained that College of the Environment building coordinators, working together with Associate Dean Stephanie Harrington, standardized building processes as much as possible, based on the University’s COVID-19 safety guidelines.

Currently, there are several SAFS groups conducting essential research in the buildings, including the Wetland Ecosystem Team and the Padilla-Gamiño, Wood, Schindler, Taub, and Roberts labs.

Jon has assisted SAFS faculty by helping design hybrid lessons for multiple courses, which combine in-person and online activities. These include Autumn Quarter’s FISH 406 Parasite Ecology and Winter Quarter’s FISH 427 Tropical Marine Biology.

“For the Tropical Marine Biology class, we sent at-home lab kits to students that included live sea anemones and fertilizer treatments. When we first conceived this idea, we immediately went to Jon for advice,” said course professor, Jacqueline Padilla-Gamiño. “He was quick to point out several safety concerns that we hadn’t thought about and worked with us to navigate how to follow proper safety protocols by mediating discussions with Environmental Health and Safety. Additionally, he has been an invaluable resource for obtaining lab supplies for class activities, both before COVID when we had lab in person, and since COVID when we shipped them to students.”

For on-campus labs, there are spacing and equipment limitations, such as sharing setups and enhanced cleaning requirements to consider. Jon said that he and faculty members work collectively to put together a model of what all these setups could be. Some instructors have even taken to filming their labs so that students can view the experiments from home, further reducing the number of people on campus.

Jon is now planning for spring quarter courses that will follow a similar model, including FISH 312 Fisheries Ecology, which traditionally has multiple field com-

“I look forward to seeing everyone come back to campus—I think there’s going to be a lot of positive energy in the buildings. And then, I would love to hand the keys to the castle off to somebody else and be able to take some time off.”

—Jon Wittouck

Jon Wittouck (left) and Jason Ching
Alexia Brown examines a dissected snail for parasites in Chelsea Wood's Parasite Ecology lab.

As one can imagine, this takes a lot of thought, resourcefulness, and creativity.

"We're trying to make sure the students are having a fruitful learning experience, but it's a challenge because you certainly can't do as much as in person," said Jon. "Some of the hands-on work the students do is applicable later in their careers. We're doing what we can to make sure that, whether through video recordings or limited in-person labs, students can see it happening so they can understand the process."

**Awards & Honors**

**STUDENTS**

(Degree track and faculty advisers in parentheses)

Caitlin Allen Akselrud (PhD, Branch & Punt) and George Whitehouse (PhD, Essington) won an Editor's Choice award from the ICES Journal of Marine Science for their paper, "The trade-off between biodiversity and sustainable fish harvest with area-based management."

Natalie Lowell (PhD, Hauser) received the Best Poster Award at the 2020 National Shellfish Association meeting.

Amanda Warlick (PhD, Converse) was the runner-up for the Best Student Presentation Award at the International Statistical Ecology Conference. Amanda also netted the Pauley Award for the Best Student Presentation at the 2020 Washington Cooperative Fish and Wildlife Research Unit Student Symposium.

**FACULTY**

Staci Amburgey is the inaugural recipient of the SAFS Diversity, Equity, Inclusion and Justice (DEIJ) and Community Service Recognition Award.

Julian Olden was elected as a Fellow of the American Fisheries Society. Julian was also recognized on the 2020 Highly Cited Researchers list (top 1% by citations by field and year) by Clarivate.

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For questions, please contact:
Office of Planned Giving
206-685-1001
giftinfo@uw.edu

Photos: Courtesy of Caitlin Allen Akselrud, Natalie Lowell, Amanda Warlick
Capstone research projects provide an exciting opportunity for students to put classroom learning into practice—and sometimes even publish their work. These senior projects are the culmination of the undergraduate experience here at SAFS.

Emily McFarland (BS 2020) published her capstone, “A new species of Chromis damselfish from the tropical western Atlantic (Teleostei, Pomacentridae),” this past December. The new species—Chromis vanbebberae—was revealed through phylogenetic analyses to be distinct from Chromis enchrysurus, commonly known as the Yellowtail Reeffish.

Emily recalls during her first tour of the UW Fish Collection as a freshman, it was mentioned that students sometimes get the opportunity to describe new species.

“I became fixated on that idea in addition to working in the fish collection lab in general,” she said. “I started working with Dr. Luke Tornabene in the spring of that same year while taking FISH 311 (Biology of Fishes), helping with the molecular work for dwarf goby phylogeny research.”

Looking to get an early start on her capstone, in her junior year, she discussed the possibility of describing a new species with Luke. He pointed her in the direction of a suspected new species of damselfish that had been observed on expeditions in the Caribbean as part of the Smithsonian’s Deep Reef Observation Project. It was the perfect opportunity to apply her growing knowledge in systematics, phylogeny, and taxonomy.

The damselfish Chromis enchrysurus was initially described in 1882. That description was later revised in 1982 to account for an observed color morph that possessed a white tail instead of a yellow tail. Emily’s study would definitively show that the white-tailed damselfish is actually its own distinct species.

In her paper, she writes, “the discovery of a new species within a conspicuous group, such as damselfishes, in a well-studied region of the world highlights the importance of deep-reef exploration in documenting undiscovered biodiversity.”

To read Emily’s full capstone, head to doi.org/10.3897/zookeys.1008.58805

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Emily McFarland, who graduated in 2020, and freshly collected Chromis vanbebberae, the new species she described.

Photos: Courtesy of Emily McFarland
Degrees Awarded

In June 2020, we celebrated our first online SAFS graduation ceremony. To our collective delight, it went off without a hitch—thanks in no small part to the efforts of Samantha Scherer, Amy Fox, and Dan DiNicola. Visit the 2020 SAFS graduation page at fish.uw.edu/news-events/spring-2020-graduation to view the graduation ceremony and to learn more about our graduates.

Our student research encompasses numerous and diverse disciplines, including biology, ecology, fisheries management, disease, genetics, physiology, and statistics—as well as interdisciplinary subjects—in pursuit of improving our understanding of the interactions between humans, our environment, and the resources upon which we rely.

**BS Degrees**

Kyla Bivens ∞ ‡
Melinda Carr
Andrew Chin °
Markus Hiukka
Ryan Fox Horn
Ruolin Hou °
Tyler Hoyt
Raegan Jarvis
Bailey Johnson
Spencer Kubo ∞
Josiah Likkel
Emily McFarland
Daisey Newman
Cindy Thai Nguyen
Kahana Pietsch ∞ 1*
Jessica Quinn
Kylie Sahota °
Angel Sar
Kara Skaw
Rory Jerome Spurr
Kentaro Yoshikawa

1 departmental honors
* college honors
∞ magna cum laude
° cum laude

**MS Degrees** (advising professors in parentheses)

Morgan Arrington (Essington) Growth and maturity of longnose skates (*Raja rhina*) along the North American West Coast
Calder Atta (Tornabene) Phylogenomic analysis of flatfishes based on exon-capture data
Grace Crandall (Roberts) Impacts of temperature on the molecular response of shellfish
Davey French (Schindler) Watershed controls on streamwater biogeochemistry in a large boreal river network
Madison Heller-Shipley (Punt) Reproductive buffers on exploitation in male-only fisheries: Tanner crab (*Chionoecetes bairdi*) management strategy evaluation case study
Kamaluddin Kasim (C. Anderson) Fishery performance indicators (FP1s) and production analysis: What works before and after the ban of Cantrang trawl fishery in the Java Sea, Indonesia?
Catrin Wendt (Wood) Ichthyophonus in Pacific herring: Investigating a transmission hotspot

**PhD Degrees** (advising professors in parentheses)

Catherine S. Austin (Quinn) Salmonid life history, phenology, and distribution within a large river basin
Thiago Belisario D’Araujo Couto (Olden) Patterns and ecological implications of small hydropower development in Brazil
John Zachary Koehn (Hilborn) Fishing for nutrition-improving the connection between fisheries, the food system and public health
Benjamin Miller (Holtgrieve) Carbon dynamics of floodplains of the Yangtze and Mekong rivers
Jane S. Rogosch (Olden) Native and nonnative fish community and food-web dynamics in dryland streams of the American Southwest
SAFS alumni, faculty, and friends have a long history of generous giving. They continued this tradition during 2020, providing critical financial support for our students, faculty, and programs. We acknowledge and thank you for your sustained support.

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IN THE NEWS

Chelsea Wood featured on “Science Rules! with Bill Nye”

When it comes to things that give us the heebie-jeebies, parasites reign supreme. However, they are a necessary part of our ecosystems. SAFS Assistant Professor Chelsea Wood joins Bill Nye on his “Science Rules!” podcast to explain what makes parasites so creepy, how to prevent them from killing us, and why she keeps digging around in decades-old cans of salmon. Listen on Apple Podcasts and Stitcher.

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Aquatic & Fishery Sciences News provides information on SAFS teaching, research, and service.

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