Volume 39
Issue 2

Education Section of the American Fisheries Society

Inside this issue:

President's Line

Ahoy from South Dakota! I hope this newsletter finds you well! We are mere days away from our annual meeting in Atlantic City and I hope to see you all there! I do have a couple important items to share and will discuss further at the business meeting. First, AFS headquarters have done some assessments of their duties and have asked us to oversee the student writing competition. In discussions with HQ, we agreed that the Education Section would be a good fit to oversee this award. Hence, 2018 was the first year that the Education Section managed this award. Five judges were gracious enough to review and rank student submissions. These judges included Jeff Jolly (USGS), Stephanie Shaw (WIDNR), Luke Schultz (WYGP), Mark Kaemingk (UNL), and Jennifer Goebel (NOAA). The student's articles will be published in upcoming issues of Fisheries so be on the lookout.

Additionally, the Education Section was asked to sponsor 2 webinar series each year. This July, the first Education Section Sponsored webinar series was held. Distinguished fellow and PhD student Andrew Carlson (MSU) presented on "Chemistry to conservation: using otoliths to advance fisheries management." With the new duties of coordinating these webinars twice a year, we are forming a new committee to take charge of this endeavor. Thus, if you are interested in being more involved with the Education Section, and the parent society, contact myself or any of the Education Section excom for more details on the committee duties and expectations.

Also included in this newsletter are candidate bios for the Northeastern and Northcentral division reps, as well as a great personal account from Rebecca Krogman on her views, experiences and thoughts on involvement with AFS at the parent society level. Also included are several updates from student chapters, and as always, please facilitate the great hands on work these units provide to local communities! We also had two formal funding requests to be considered at the annual business meeting, both of which are attached. Dan and Gary will both be in attendance at the meeting so feel free to bring questions regarding these funding requests.

That's all the space I have here – I hope to see you in Atlantic City in a few days!!

Apologies, but I had to insert a picture of my son with his first White Bass. With the help of his Mickey Mouse rod, he was able to pull this whopper of a bass in the boat! Please take the time to take a youth out and show them our passion!

Education Section and Student Activities in Atlantic City:

Saturday, August 18

8:00 AM – 5:00 PM	Workshops and Continuing Education Courses	

Sunday, August 19

8:00 AM – 5:00 PM	Workshops and Continuing Education Courses	
8:00 AM – 12:00 PM	Leading at All Levels in AFS	CC 313
1:00 PM – 5:00 PM	Uncomfortable Conversations: Safety and Security in the Fisheries Field	CC 313
5:30 PM – 7:30 PM	Education Section Annual Business Meeting	CC 309
6:00 PM – 9:30 PM	Welcome to Atlantic City Networking Event	Hard Rock Hotel & Steel Pier

Monday, August 20

8:00 AM – 8:30 PM	Trade Show and Posters	CC Exhibits Hall
4:00 PM – 5:00 PM	AFS Hutton Oversight Committee Meeting	CC 419
5:20PM – 6:00PM	Student & Early Career Education Subsection Meeting	CC 417
6:00 PM – 8:30 PM	Trade Show and Poster Networking Event	CC Exhibits Hall

Tuesday, August 21

6: 00 AM – 8:00 AM	Spawning Run and Carcass Crawl	AC Boardwalk
6: 50 AM – 7:30 AM	Splash and Dash in the Atlantic Ocean	Boardwalk Hall
9:00 AM – 6:00 PM	Trade Show and Posters	CC Exhibits Hall
10: 00 AM – 4:30 PM	Student Quiz Bowl	CC 413
12:00 PM – 2:00 PM	Best Student Paper and Poster Judges Luncheon	CC 406
6:30 PM – 9:30 PM	Student Networking Event (Students Only)	Claridge Grand Ballroom

Wednesday, August 22

9:00 AM – 2:00 PM	Trade Show and Posters	CC Exhibits Hall
3:40 PM – 5:40 PM	AFS Business Meeting	CC Hall A
6:00 PM – 10:15 PM	Grand Networking Event	Bally's Beach Patio

ATLANTIC CITY 2018

AMERICAN FISHERIES SOCIETY

COMMUNICATING THE SCIENCE OF FISHERIES CONSERVATION TO DIVERSE AUDIENCES

AUGUST 19-23, 2018

EDUCATION SECTION

AMERICAN FISHERIES SOCIETY

Annual Business Meeting
August 19, 2018; Atlantic City, New Jersey (5:30-7:30pm)
Rm CC309 Atlantic City Convention Center

I. Call to Order
II. Introduction of Guests
III. Determination of a Quorum
IV. Approval of Agenda
V. Approval of Minutes from 2017 Business Meeting
VI. President's Comments (Mark Fincel)
VII. Treasurer's Report (Marty Hamel)
VIII. Comments by AFS Officers in attendance
IX. Committee Reports
  a) Newsletter (Hilary Meyer, Seth Fopma)
  b) Web Page (Steven Ranney)
  c) Excellence in Fisheries Education Award (Trent Sutton)
  d) Skinner Award (Julie Harris)
  e) Best Student Paper-Poster 2017 Awardees (Trent Sutton)
  f) Best Student Paper-Poster 2018 Symposia (Trent Sutton)
  g) Early Career Professional Awardees (Dan Dembkowski)
  h) Membership & Early Career Professional Committee (Dan Dembkowski)
  i) Nominating (Katie Bertrand-Graeb)
  j) Experiential Learning Committee (Amanda Rosenberger, Mike Barnes)
  k) Education Section Sponsored Webinar Series **(TBD)**
X. Ad-hoc Committees and Special Projects
  a) Inter-section Committee on Education (Trent Sutton)
  b) Undergraduate Travel Assistance Award (Dan Weaver)
XI. Additional Reports
  a) Student Subsection (Dan Weaver)
XII. Other Awards and Recognition
  a) Out-going Division Representatives and Officers
XIII. Old Business
XVI. New Business and Announcements
  a) Student-Professional networking event – Reno 2019 (Dan Weaver, Craig Paukert)
  b) Development of active learning open educational resources for fisheries classes (Gary Grossman)
  c) Book Sponsorship Request (Dan Dauwalter)
XVII. Adjournment

Candidate Biography:

Daniel Weaver, Northeastern Division Representative to the Education Section of the AFS

Greetings, my name is Dan Weaver and I would like to thank you for your consideration in electing me as Northeastern Division Representative to the Education Section. Currently I am a post-doctoral research associate at the University of Maine working on several projects involving diadromous fish migration, behavior, and passage through dams. I joined AFS in 2005, and after my first divisional meeting in 2007 (Southern Division, Memphis), I began to understand the impact this organization could have on my fisheries career.

In the last several years I have taken a much more active role in AFS. I served as president of the University of Maine Student Subunit (2014–2016), then as president-elect and president of the Student and Early Career Professional Subsection of the Education Section (2016–2018). During these roles I pursued activities that aligned with the vision statement of AFS that seeks to conserve and protect fisheries resources and their habitats, and the continued development of fisheries professionals. As student subunit president we developed a successful outreach program that engaged the local community. As subsection president I worked to improve communication between students and AFS, and alongside AFS staff, initiated several projects that sought to engage and excite AFS involvement. Some of these projects included co-hosting a statistics webinar, developing a pen pal program matching graduate students and professionals with Hutton Scholars, and organizing a symposium for this year's Society meeting in Atlantic City that focuses on bringing together student subunits to exchange ideas and discuss challenges.

As my term as Subsection president comes to an end at the annual meeting I look to new challenges and roles within AFS. As a representative to the Northeastern Division I would utilize my experiences as subunit and subsection president to proudly serve the Education Section. I will foster communication among professionals, educators, students, and the public. I will seek new ways to integrate AFS into our profession that will better position our fisheries professionals to tackle the issues and challenges we face today. Thank you very much for your time and consideration.

Candidate Biography:

Jeffrey Jolley, North Central Division Representative to the Education Section of the AFS

I am currently a Research Fish Biologist at the Columbia Environmental Research Center of the USGS in Columbia, Missouri and it would be an honor to serve as the North Central Division representative to the Education Section of the American Fisheries Society. I have been an AFS member since 1996 and have served at many AFS levels throughout the years including the Skinner Award Committee (Education Section), Continuing Education Committee (Education Section), AFS Strategic Plan Review Committee (2003-2004), and as Auburn University Chapter President. I currently serve on the Continuing Education Committee and the Intersection Committee on Education (ICE) and have been on many ad-hoc committees at the state, division, and national level through the years. One of my professional responsibilities is to help the next generation of fisheries professionals through mentoring, training, and education. Although I do not hold a traditional academic position I have mentored many undergraduate and graduate students leading to professional presentations, published manuscripts, and attainment of employment. Many of these former students are now my professional peers. I have taught courses in Fisheries Management and give guest lectures in academic departments nearly every year. I consider the Education Section to be my home within the American Fisheries Society and education and mentoring will remain lifelong activities for me.

I have a B.S. from North Dakota State University, M.S. from Auburn University, and Ph.D. from South Dakota State University. My previous employment was as a Supervisory Fish Biologist with the U.S. Fish and Wildlife Service in Vancouver, Washington for nearly eight years where I led the Pacific Lamprey research and conservation program within our office. I have held positions with the USFWS in Ludington, Michigan, USGS in Cook, Washington, and the North Carolina Cooperative Fish and Wildlife Research Unit. My current work is focused on many aspects of the invasive Jia Yu (also referred to as Asian carp). Specifically, I am investigating the reproductive ecology of Grass Carp and innovative methods for mass harvest of the bigheaded carps. If elected to be the NCD Representative to the Education Section of the American Fisheries Society I will use my leadership to continue the strong tradition of the section. I will continue to support activities and wise decisions that benefit all levels of education within AFS from the Hutton Junior Fisheries Program to adult continuing education activities and all things in-between. Thanks for your consideration.

Participation = Positive Change

Rebecca Krogman

Hi, everyone! Today is the first day of June, only two and half months to go before the next Annual Meeting of AFS, and I have just submitted my request for out-of-state travel. I'm concerned, as always, that the request will not be approved. Not just "Not Approved" but heartily rejected. I imagine my agency's leaders seeing my name, yet again, on a request form, muttering in annoyance, and flinging the request onto the floor in a flurry of memos, staples, and paperclips.

Why *should* I go to another professional meeting? Why should an agency spend money on travel out-of-state, or even out of country? What good comes from it?

These are valid questions, and not unfounded given the necessity of fiscal transparency. Thankfully, there are some great answers. Today I want to highlight some recent outcomes resulting from active participation in AFS, from an early career professional's perspective.

AFS Member Ryan Hupfeld, an active leader in the Fisheries Management Section's Early Career Professionals Committee (ECPC) and Iowa Department of Natural Resources biologist, attends the Midwest Fish and Wildlife Conference as well as the AFS Annual Meeting. During one particular Midwest conference, Ryan met almost every fisheries chief in the Mississippi River Basin, along with the coordinator and committee members of the Mississippi Interstate Cooperative Resource Association (MICRA). Ryan now serves as the Iowa delegate to the MICRA Paddlefish and Sturgeon Committee, and he attributes at least some of his reputation and current role to this early interaction with other fisheries professionals. His service with MICRA ensures that Iowa is up-to-date with the latest science, management practices, and research on paddlefish and sturgeon. It also ensures Iowa has the ability to provide input regarding changes in management, as well as working with other governmental agencies toward more consistent management of interjurisdictional fish species in the Mississippi River Basin. These invaluable contacts occurred at a networking event, a commonly cited reason for meeting attendance that is certainly not cliché in the right hands.

AFS Member Hilary Meyer, also an active leader in the ECPC and South Dakota Game, Fish and Parks (SDGFP) biologist, attends AFS meetings as often as she can. Her attendance at the high-quality symposia, submitted paper sessions, and plenary sessions of AFS meetings revealed the latest fisheries work happening across the continent. Hilary and other SDGFP colleagues involved in AFS have brought a wealth of information back to South Dakota, resulting in the implementation of AFS standard sampling methods, telemetry studies, remotely operated creel surveys, and large-scale jaw tagging studies that substantially increased SDGFP's efficiency and quality of information collected on large reservoirs in the state. Many of these projects were inspired directly by presentations that were seen at Division or Society-level meetings. Hilary and her SDGFP colleagues have also developed a broad network of helpful and diverse colleagues through AFS; these relationships have helped build collaborations with researchers from neighboring states, multiple state and Federal agencies, and university programs to advance fisheries science in South Dakota and North America in general. For example, SDGFP is now involved in collecting fish samples for a study on Freshwater Drum physiology, a collaborative effort with University of Nebraska-Lincoln.

Participation = Positive Change Continued

My own story began in 2011, when I was invited to be a student representative on the Electronic Services Advisory Board. With the support of Iowa DNR, I became Chair of the Board in 2014 and was embroiled in almost every aspect of electronic services provided to AFS members as part of their membership. I worked closely with AFS's Bethesda staff and have become fairly knowledgeable (and opinionated) on the needs and potential services AFS could provide its members. We have discussed the need for re-development of a gray literature database for several years now, and we finally have funding options to do it. After receiving a grant recommendation from the Association of Fish and Wildlife Agencies, our Director Doug Austen asked me to be part of the advisory group to make it happen. (The advisory group includes people from each AFS Division as well as representatives from the Board and the Fisheries Information and Technology Section.) A gray literature database would include historical and current white papers, including Sport Fish Restoration reports from every state, and would be searchable, easy to download, easy to contribute to, and an archive of knowledge that is unavailable to researchers via peer-reviewed avenues. This is a tangible benefit to research biologists and managers everywhere, but especially to those who wish they had easier access to the agency reports of others. I am excited and thankful to be part of the Gray Literature Database advisory group.

Then, of course, there is your standard list of benefits to meeting attendance:

- Dissemination of your work via professional talks and poster presentations, which stimulate follow-up questions, extensive discussions, study improvements, and new ideas
- Connection with subject matter experts, who can give you advice on your own research ideas and introduce you to more knowledgeable circles in any area.
- Access to continuing education opportunities that are necessary to develop skills that help us on the job, explore new techniques and concepts, and maintain professional certification
- Development of leadership and organizational skills through serving as Society officers, unit leaders, and committee members
- Discovery of recent and ongoing research and management projects from all over the world through attendance at symposia and submitted presentations, and the opportunity to discuss new ideas that could be applied in your location with those directly involved
- Access to the best deals on AFS publications and vendor products at the trade show, equating to hundreds of dollars of savings (enough to make a flight pay for itself)
- Connection to others who share your specialization through AFS Section meetings, creating a closer group of tightly-knit individuals you can call for advice and assistance
- Opportunities to find the top candidates for job listings, through the posted job board and networking throughout the meeting

Participation = Positive Change Continued

Some of these benefits have broader effects than your agency may realize. The AFS Policy Committee, Science Communication Section, Governing Board, or other groups provide a forum for serious policy discussions that have direct impact on agency funding. Our role as scientists is to provide unbiased information and, when needed, science-based recommendations. Thus, the AFS has provided commentary on the Magnuson-Stevens Act reauthorization and Modern Fish Act (Sport Fish Restoration funding), Recovering America's Wildlife Act (imperiled species funding), and Waters of the U.S. Rule (Clean Water Act funding), among others. Having a voice at this table, even if it is on personal time, allows fisheries professionals to convey the need for investment in our aquatic resources. Of course, all of these groups meet during the AFS Annual Meeting.

Professional meetings fulfill a number of professional development needs that agencies may not be able to fulfill. For example, leadership skills can be developed by serving as an Officer, committee member, or volunteer. These opportunities are available to all regardless of supervisory work duties, thereby providing workforce development at all ranks. Organizational skills are the same, as any Secretary-Treasurer can tell you. Communication skills, both formal and informal, are honed through presenting papers and posters, speaking in business meetings, and managing conversations and discussions. I myself learned to speak with confidence (YES, there was a time I hyperventilated and passed out in these situations) through conference presentations. It took the realization that the audience comprised my friends and colleagues, that there was in fact nothing to be afraid of. These "soft skills" are not habits you can effectively develop in a one-day short course.

Professional meetings provide the resources to make our operations more efficient and effective back home. Let us be direct: We can SAVE MONEY by being professionally engaged. Knowledge of ongoing studies and management strategies in other places can reveal when we are pursuing a dead-end project with demonstrated failures in other locations, when we are conducting redundant research for which the answers are already known to a degree of certainty, and whether our study design is ineffective due to factors we could not know otherwise. Attending presentations and reading posters assures that we are up-to-date with an ever-changing and growing science; that we are aware of new field, laboratory, and analytical approaches; and that our own research questions are relevant to the day. Experiences in other states can foreshadow challenges we will meet next year, and we can be more prepared for change if we simply pay attention.

There are countless stories we could tell about the value derived from professional meetings. At its simplest, I look forward to the Annual Meeting every year and go in with a host of ideas that I want to share with the world. I come out with so much more: revisions and improvements to my current studies, updated analytical approaches and unique perspectives on my work, new study ideas that are begging to be investigated, new friends and contacts, access to work that hasn't been published yet, and most importantly, a refreshed sense of purpose and energy that carries me through the next year. We fisheries scientists love what we do, and we have the power to make incredibly positive waves with our work and professional involvement. So keep your chin up, and see you at the next meeting!

COMMUNICATING THE SCIENCE OF FISHERIES CONSERVATION TO DIVERSE AUDIENCES

AUGUST 19-23, 2018

Subsection News

By: Daniel Weaver
President, Student Subsection and Early Career Professional Subsection of the Education Section

Are you ready for AFS in Atlantic City? The Subsection is! If you are attending the Society meeting in August, please drop in to our Student Subunit Symposium: "Engaging the Next Generation of Fisheries Scientists: Strategies for Student Subunits of AFS" which is on Monday starting after the plenary session. Please stick around after the symposium as we will be having our annual Subsection business meeting (Room 417; Atlantic City Convention Center). We will be soliciting nominations for officers for 2018–2019 for the positions of Division Representatives, Secretary/Treasurer, and President-Elect. If you are interested in becoming involved with AFS, this is a great way to start! If you have questions about the duties of the positions, please feel free to contact me (daniel.weaver@maine.edu).

This year we had 23 undergraduate students apply for our Undergraduate Travel Award, which must be a record! The selection process was tough, as everyone submitted strong applications, but 4 undergraduates were chosen to receive awards: Rachel Young (Rutgers University); Cheyenne Stratton (University of Missouri); Chloe Mikles (Cornell University); and Sabine Bailey (McGill University). These students will receive awards at the Education Section business meeting, on Sunday 8/19 from 5:30 – 7:30 at the Atlantic City Convention Center room 309. I encourage everyone to attend!

A reminder that the AFS student networking event is scheduled for Tuesday 8/21 from 5:30 – 9:30 p.m. at the Claridge Hotel. (https://afsannualmeeting.fisheries.org/student-networking-event/). The theme of the event is 1920's, so get those flapper dresses and bowler hats ready!

In other recent news, the Subsection has partnered with the Society to establish a Hutton Scholar Pen Pal program in which graduate students or early career professionals are paired up with a Hutton Scholar (high school students). The goal of this new program is to allow graduates and professionals to share their insight and experiences about the fisheries profession with the Scholars. We received overwhelming interest in the program and I have heard several success stories of Scholars making what could be a longer-lasting mentoring connection with our AFS students and professionals. We would like to thank Mary Webb Banning for developing the idea and assisting with this new program.

If you haven't had a chance to do so, please follow us on Twitter (@AFS_Students) and Facebook (AFS Education – Student Subsection) for all the latest information. If you have questions or concerns, please contact us. We are here to serve the all AFS students and act as a liaison between the student organizations and AFS. Please send us an email with your thoughts or questions at afsstudent@gmail.com See you in Atlantic City in August!

New Student Subunit in the Province of Québec

Nearly a year after making the goal to increase AFS membership of students in Canada, we have not only expanded our range, we have established a new subunit in the Canadian Division. The Québec Student Subunit is under the Atlantic International Chapter and was officially approved July 2018. Membership of the new subunit will be composed of university students, postdoctoral researchers, faculty, and alumni from universities, colleges, and other institutions of higher learning throughout the Province of Québec who are active members of the Chapter. This includes, but is not limited to: McGill University, Concordia University, Université de Montréal, L'Université du Québec à Montréal, Université du Québec à Trois-Rivières, Université du Québec à Chicoutimi, and Université Laval. The Québec Student Subunit elected its executive committee as well as graduate and undergraduate student representatives in June 2018 and will hold its first official meeting in September. Although word is still spreading about the subunit, this effort was made possible by 22 students and 21 faculty members across 7 different universities interested in seeing it become a reality. This year will be a building year but filled with activities, outreach, workshops, and fundraising. We are starting a mentoring program matching our undergraduate members with graduate students with similar interests to work on small projects throughout the year together. The hope being that undergraduate student will gain extremely important experiences, develop new skills and techniques, and have someone they can trust and feel comfortable with to ask questions and for advice. Mentoring graduate students learn how to communicate complex ideas and processes in a concise and easy to understand manner as well as supervise students, preparing them for jobs following their program of study in ways that courses cannot. We are looking forward to our first workshop in October and hope to have our website and Facebook page launched soon.

Missouri State University Subunit Update

Jordan Heiman

President

This past semester, the Missouri State subunit has been busy cleaning watersheds, attending conferences, tracking fish, and hosting fundraisers. We started the semester by sending several students to the annual Missouri Natural Resources Conference at Lake of the Ozarks at the beginning of February. Many of our members assisted Jeff Williams (a student member of our chapter) with his master's thesis project by tracking Northern hog suckers in Cedar Grove during Spring Break. In April we had three clean-up events at Wilson's Creek, George Washington Carver National Monument and James River. During the George Washington Carver National Monument pond clean-up, we were also able to learn more about electrofishing from Hope Dodd of the National Park Service while conducting a survey of fish populations in the pond. April was a busy month as we also hosted a bake sale fundraiser and partnered with James River Basin for a sustainability event at Missouri State University. We also elected new officers at the end of this semester, so congratulations to Jordan Heiman (President), Trenton Jones (Vice President), Indigo Tran (Treasurer) and Erica Parker (Secretary). We are hoping to incorporate many events like this next year and possibly expand to new events as well.

Ontario Chapter Student Subunit Update

Jacqueline Chapman
President

This year has been a busy one for the student subunit of the Ontario Chapter of AFS!

To kick off 2018, the Chapter AGM was held once again in Orillia, Ontario this February and was a great success: A new student travel bursary was created and awarded by the student subunit, last year's student nominated Outstanding Mentor Award recipient Dan McLaughlin gave the inaugural OMA lecture, and the fundraising raffle ran by the AFS-OC-SU executive committee raised the most funds to date! The E.J. Crossman Award for best student presentation was presented to subunit member Sarah Walton, and the B.A.S.S. Ontario Nation award for best poster was presented to Geraint (Jake) Element from Queens University. This year's recipient for the Outstanding Mentor Award was announced – Congratulations Dr. Katie Gilmour and thank you again for all the amazing support you provide students in fisheries! A major highlight from the conference was the opportunity for attendees, including many students, to challenge a fish identification test run by the Royal Ontario Museum's Dr. Erling Holm and the Ontario Ministry of Natural Resources Scott Gibson. It truly was a challenge!

This year marked the third annual student success workshop run by the subunit, held on March 22nd in Ottawa. The event included an R workshop run by AFSOC member Robert Lennox before moving to the Fox and Feather Pub for a talk on what exactly it means to work as an environmental consultant by AFSOC student subunit alumni Charles Hatry, a panel discussion featuring mentors from various environmental sectors (academia, provincial and federal governments, and NGOS), and finally a mentor mixer where students were able to discuss their questions one on one with the mentors. This event was again a great success with over 75 attendees participating throughout the day. A special thank you to the parent chapter for supporting the event!

Finally, the Ontario Chapter student subunit was directly involved in running three events to celebrate fisheries science and World Fish Migration Day in April to help bring awareness to the importance of uninterrupted rivers and the freshwater migration of fish. A pub trivia night kicked off the events and opened with a captivating talk on Arctic char and sea trout movement by Dr. Jan Grimsrud Davidsen from the Norwegian University of Science and Technology before moving on to some brain teasing fishy trivia. Six trivia teams competed and participants received swag donated by AFS-OC, VEMCO, and the Ocean Tracking Network! The next two events were hosted at the Canadian Museum of Nature: Science by Night and the official World Fish Migration Day Ottawa. AFS-OC volunteers were on site to demonstrate fish research technologies like biotelemetry and discuss the many challenges that face local fish species. Fish Migration Plinko, face painting, colouring sheets, and a green screen (kindly donated by the Canadian Wildlife Federation) were all enjoyed by our younger guests and adults alike!

The AFSOC student subunit is looking forward to more fantastic events!

Commemorating 10-years of hands-on undergraduate research through the Stacy Moore Hagan Estuarine Science Program

Submitted by: Mark Sullivan (Stockton University) and Roland Hagan (Rutgers University)

The 148th Annual Meeting of the American Fisheries Society in Atlantic City (August 19-23, 2018) will feature contributed papers and posters spanning 10 years of a collaborative undergraduate scholarship program between Stockton University and Rutgers University.

The Stacy Moore Hagan Memorial Undergraduate Estuarine Science Program honors the memory of Stacy Moore Hagan, a former Richard Stockton College of New Jersey (now Stockton University) undergraduate, whose career in marine science was initiated by a cooperative internship offered through Stockton's School of Natural Sciences and Mathematics (NAMS) and conducted at the Rutgers University Marine Field Station (RUMFS) in 1990. At RUMFS, Stacy quickly distinguished herself through a hardworking, focused approach to any task, including field work ranging from ocean cruises to the muck and mire of buggy salt marshes. During her career, she mastered numerous field approaches and always led the way despite unfavorable weather conditions, often at night and in remote locations. From this initial technician position, she progressed towards a Master's Degree in Ecology and Evolution at Rutgers on pelagic estuarine fishes while serving as a mentor to numerous individuals including summer interns, technicians, and volunteers ranging from high school students to retirees. Over her career, she was senior author or co-author on 17 peer-reviewed publications, 20+ presentations, and three technical reports focused primarily on the first year in the life of estuarine fishes and their responses to marsh restoration.

So that other Stockton University students can follow in Stacy's footsteps, multiple $2,500 scholarships have been awarded each year since 2008 to sponsor Stockton undergraduates for an intensive research experience centered on estuarine science-related topics. Successful applicants develop research ideas with a mentor and subsequently conduct research at RUMFS or Stockton University where they have the opportunity to work with other undergraduates, graduate students, post-doctoral associates, and affiliated Stockton and Rutgers research faculty. Scholars typically share their experiences with the community in the form of presentations at local meetings and the Stockton University Undergraduate Research Symposium. The overall goal of this program is to provide a high quality research experience for students interested in pursuing graduate studies or entry-level technician jobs in the field of Marine Science.

To date, $52,500 in Stacy Moore Hagan Estuarine Science scholarship monies have been awarded through the Stockton University Foundation to 21 students (15 Marine Science, 3 Biology, 3 Environmental Science). Topics have ranged from harbor seal diet analysis, eel predator-prey interactions, oyster spat settlement, sea grass monitoring, peat reef mapping, and ghost fishing**.** Of these previous awardees, 6 scholars are currently pursuing (or have completed) MS degrees and 2 are enrolled in PhD programs. Two projects have resulted in peer-reviewed publications with former Stockton undergraduates as lead (Victoria Musumeci) or co-author (Linda Dotts).

To mark 10-years of hands-on learning through this program, current and former awardees will be presenting their work at the "Understanding Ecosystem Shifts: The Importance of Collecting Early Life History Data for Marine Organisms" AFS symposium in Atlantic City. Contributed oral session: Thursday, August 23, 2018 (8:00 am – 3:00 pm). Contributed poster session: Monday, August 20 (6:00 pm – 8:00 pm). Funds to support AFS travel were raised through donations as well as a series of concerts organized by Roland Hagan and Folk Across the Street. Please consider joining us at AFS to support these wonderful projects and sc

Donations to Stacy's Endowment can be made directly to:
Stockton University Foundation
101 Vera King Farris Drive
Galloway, NJ 08205-9441
Making sure to note Stacy Moore Hagan on any remittance.

Funding Requests: This year 2 Funding Requests have been submitted for your review, please see below.

13 August, 2018

Mark Fincel
President, Education Section
American Fisheries Society
20641 SD HWY 1806
Ft. Pierre, SD 57532

President Fincel and Education Section members:

We are currently editing a book to be published by the American Fisheries Society titled "Multispecies and Watershed Approaches to Freshwater Fish Conservation." The book is based on a symposium held at the 2018 Annual Meeting of AFS in Tampa, FL, and it contains over 30 chapters that highlight case studies of freshwater fish conservation assessment, planning, and delivery at watershed scales. The target audience is fishery managers, conservationists, educators, and students that want to learn about various aspects of real conservation action for freshwater fishes. The book is scheduled to be completed in spring of 2019.

The AFS Books Program has charged us with raising $12,000 to offset book production costs. We have raised $5000 to date. The attached flyer for the book highlights the various funding levels we are seeking, and book sponsors will be recognized under each sponsorship level in the book.

We request that the Education Section of AFS support production of this book at a level of $4,000 (the highest level: Guadalupe Bass level, $2500 or more). The book will be a valuable educational resource for current and future fishery professionals that want to learn about conservation action targeting multiple species at watershed scales. We would graciously accept any amount less than $4,000 based on the interest of the Education Section membership. Details for contributions are on the attached flyer.

Thank you for considering this request. Please let us know if you have any questions.

Sincerely,
Book co-editors:
Daniel Dauwalter, Ph.D.
Timothy Birdsong
Gary Garrett, Ph.D.

Daniel Dauwalter, Ph.D.
Trout Unlimited
910 Main Street, Suite 342
Boise, Idaho 83702
208-345-9800; ddauwalter@tu.org

Enclosed: Book flyer

Multispecies and Watershed Approaches to Freshwater Fish Conservation

Daniel Dauwalter, Timothy Birdsong, and Gary Garrett, Editors

Book Overview

The American Fisheries Society book, *Multispecies and Watershed Approaches to Freshwater Fish Conservation*, will profile more than 30 innovative case studies from throughout the USA, and will serve as a resource and guide for fisheries scientists and conservationists in the implementation of multispecies assessments, conservation area prioritizations, partnership-based conservation planning, and watershed-scale conservation delivery. Book chapters are currently under review or revision, with publication of the book scheduled for spring 2019. Anticipated book production costs total $12,000. Initial fundraising efforts have secured $5,000 toward that goal. The purpose of this brochure is to solicit additional financial support from other potential donors / contributors.

Book Editors / Fundraising Contacts:

- **Dan Dauwalter**, Trout Unlimited, ddauwalter@tu.org
- **Tim Birdsong**, Texas Parks and Wildlife Dept., Timothy.Birdsong@tpwd.texas.gov
- **Gary Garrett**, University of Texas at Austin, garygarrett@utexas.edu

Book Sponsorship Levels:

Guadalupe Bass ($2,500+)
Blueback Herring ($1,000-$2,499)
Sicklefin Redhorse ($500-$999)
Eastern Brook Trout ($250-$499)
Bluehead Sucker (<$250)

*Please make checks payable to **Trout Unlimited** and mail to **Dan Dauwalter**, Trout Unlimited, 910 Main Street, Suite 342, Boise, ID 83702

Selected Book Chapters (33 Total):

Multispecies Conservation: Bringing Efficiency to the Science of Native Fish Conservation, Jack E. Williams, Trout Unlimited

Prioritizing Hawaii's Stream Habitats to Conserve Native Species with Changing Climate, Ralph Tingley, Michigan State University; Dana Infante, Michigan State University; Arthur Cooper, Michigan State University; Gordon Smith, Michigan State University; Kyle Herreman, Michigan State University

Little Tennessee River Basin Native Fish Conservation Partnership: Aquatic Conservation on a Landscape Scale, Andrea Leslie, North Carolina Wildlife Resources Commission; Fred Harris, North Carolina Wildlife Federation

Texas Native Fish Conservation Areas Network, Timothy Birdsong, Texas Parks and Wildlife Department; Ben Labay, Siglo Group; Gary Garrett, University of Texas at Austin

Collaborative Restoration of Westslope Cuttroat Trout into 100 km of Cherry Creek, a Madison River, Montana Tributary, Patrick Clancey, Montana Fish, Wildlife, and Parks; Carter Kruse, Turner Enterprises, Inc.; Bradley Shepard, B.B. Shepard & Associates; Lee Nelson, Montana Fish, Wildlife, and Parks; Scott Barndt, Custer Gallatin National Forest; Bruce Roberts, Custer Gallatin National Forest

Restoration of Diadromous Fish Populations in Tributaries of Waquoit Bay, Cape Cod, Massachusetts, Steve Hurley, Massachusetts Division of Fisheries and Wildlife

An Approach for Implementing Large Scale Watershed Restoration Efforts: Abandoned Mine Drainage Restoration in the West Branch Susquehanna River Watershed, Pennsylvania, Shawn Rummel, Trout Unlimited; Amy Wolfe, Trout Unlimited

New Approaches to Providing Streamflow for Fisheries in the American West: Embracing Prior Appropriations and the Marketplace, Rob Van Kirk and Brandon Hoffner, Henry's Fork Foundation; Amy Verbeten, Friends of the Teton River; Scott Yates, Trout Unlimited

The Weber River Partnership: How Fish Gained Relevancy through a Recently Formed Watershed Group, Paul Thompson, Utah Division of Wildlife Resources; Paul Burnett, Trout Unlimited

Funding Request: Education Section, American Fisheries Society, 15 June 2018

Title: Development of active learning open educational resources for fisheries classes
Name: Gary D. Grossman
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Project description: We have seen extensive anthropogenic environmental change and habitat degradation in North America in the last 100 years, and nowhere are these negative changes more evident than in aquatic habitats. Estimates from 2008 (Jelks et al 2008) suggest that up to 50% of the fish species residing in lotic habitats in North America are "species of concern", and ten years later that percentage almost certainly is higher. Aside from the conservation concerns of these declines, most fisheries classes have relied on the ready availability of lotic and lacustrine species and habitats for field demonstrations and laboratory exercises. Nonetheless, increasing anthropogenic and other environmental changes may reduce future access to natural systems and even some species.

From an educational perspective, perhaps the most important technological development of the late 20th century has been the internet. This resource placed immense amounts of graphical and textual data at the hands of both students and professors at the click of the mouse. The internet has led to a variety of innovations in educational technology including the development of Open Educational Resources (OERs) which are educational resources available without fees (Islim et al. 2016; Grossman & Chernoff 2018). In general, the educational and disciplinary literature indicates that natural science and resource management fields including fisheries, have not been in the vanguard of innovative pedagogical techniques or educational technology such as OERs. However, the use of innovative pedagogical approaches such as multi-modal learning or active learning clearly have multiple positive impacts on students (McKeachie et al. 1987; Levy & Petrulis 2012; Quardokus et al. 2012) including improved attitudes towards classes and increased involvement of higher-order learning processes such as creativity and synthesis (see Grossman & Watson 2015; Grossman & Chernoff 2016; Grossman et al. 2016; Grossman & Simon 2018 and papers cited within). Fisheries does have a tradition of active learning via laboratory exercises, but these exercises may not have the open ended structure required for substantial creativity and synthesis. I propose to develop three or four new active learning exercises for undergraduate or graduate fisheries classes based on OERs (see example active learning OER rubric below, and Grossman & Chernoff 2018). For each exercise I will provide a rubric and will host the appropriate video on my OER YouTube website, OpenEcologyResources https://www.youtube.com/channel/UCSM5ZtaKhp_5RtiAfowUA_A/videos . It is difficult to describe the precise nature of the proposed exercises, because they will partially depend on my ability to shoot appropriate video, or to utilize other appropriate video available for hosting on OpenEcologyResources, or perhaps on the Fisheries web site as well. Nonetheless, the following topics will be considered: 1) mechanics of drift feeding, 2) interspecific competition between fish species, 3) intraspecific competition within fish species, 4) predator-prey interactions, 5) behavioral time budgets, 6) visual estimation of substrate categories, 7) faunistic surveys in aquatic habitats, etc. Of course I would welcome suggestions from the Education Committee as well. The suggested topics just represent several potential subjects and one of the first things I will do is ask for available video via both Fisheries and the general ecology and fish ecology list serves. When sufficient exercises have been completed I will give a presentation at the annual AFS meeting to disseminate information about their use and availability and also likely publish a short article in Fisheries on the results of the project with links to the exercises.

As previously mentioned these exercises will represent innovative pedagogical tools for fisheries students and based on previous assessments, should contribute to improving "the quality of education for fisheries students and scientists", especially given that they, or similar exercises, have been vetted via peer review (Grossman & Watson 2015; Grossman et al 2016; Grossman & Simon 2016; Grossman & Chernoff 2018). In addition, given that the exercises will be freely available OER's they also will serve to "promote exchange of education information, techniques, and materials among educators and among educational institutions," as well as "foster improved communication and information exchange among fishery educators, employers, fisheries specialists, students, and the public.

References

Islim, O., N. Koybasi, & K. Cagiltay. 2016. Use of open educational resources: how, why and why not? International Journal of Teaching and Learning in Higher Education 28:230-240

Grossman, G. & E. Watson. 2015. The use of original music videos to teach natural history. J. Nat. Hist. Ed. & Exp.: 9: 1-7.

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Grossman, G.D., Orth, D. & J. Neuswanger. 2016. Innovative approaches to fisheries education. Fisheries 41: 450-457.

Jelks H.L., S. Walsh, N. Burkhead et al. 2008. Conservation status of imperiled North American freshwater and diadromous fishes. Fisheries 33: 372–407.

Levy, P., & R. Petrulis. 2012. How do first-year university students experience inquiry and research, and what are the implications for the practice of inquiry based learning? Studies in Higher Education, 37: 85–101.

McKeachie, W. J., Pintrich, P. R., Lin, Y. G., & D. A. F. Smith. 1987. Teaching and learning in the college classroom: A review of the research literature. Ann Arbor, MI: National Center for Research to Improve Postsecondary Teaching and Learning.

Quardokus, K., S. Lasher-Trapp, and E. Riggs. 2012. A successful introduction of authentic research early in an undergraduate atmospheric science program. Bulletin of the American Meteorological 93:1641-1649.

Time to completion: 18 months

Amount requested: $9,500 (funds will be used for staff support (~95%) and travel to sites for video filming (~5%)

Other funding sources: Un-recovered F&A at the non-federal off-campus rate of 35% ($3,325).

How will the contribution of the Education Section be acknowledged: As is typical, I will acknowledge any support in both the Acknowledgements section of any publication or presentation.

Disposition of unused funds: All funds will be used to produce information that meets the goals of the AFS Education Section (e.g., additional exercises). Although I do not anticipate that funds will be left over, any that are will be returned.

This example rubric is from Grossman and Chernoff (2018)

FANR/ECOL/GEOG 1200
Natural History of Georgia
Professor Grossman

FISH BEHAVIOR ACTIVE LEARNING RUBRIC

Watch the video https://www.youtube.com/watch?v=idijWE94EWY and record important things you observe such as environmental conditions, disturbances, and most importantly, the behavior of, and interactions among the fish. The fish are gilt darters *Percina evades* filmed in the Piedmont of North Carolina although this fish is common in North Georgia streams. It would be useful to inform yourself about their biology, which will help you interpret what is going on in the video. Using the list of behavioral terms provided, watch the video and provide definitions for all of the behaviors and any others you might observe. Specifically define the beginning and endpoints of each behavior, and record the frequency of each type of behavior seen in minutes two and four of the video. Present the information for each minute separately in a single table (i.e., # observations/minute). Present any general conclusions/observations you may have in a conclusion section.

We will have a class work session and this assignment is worth 125 points which counts significantly towards your grade. I expect a minimum of 8 pages of double spaced text, not including tables, charts and references. It will add to your grade if you use real scientific references but they are not required. I will not grade based on grammar but please run your assignment through a grammar and spell checker in your word processing program. You may turn in your exercise on September 22 and I will grade it and tell you what improvements need to be made to earn an A. You may then resubmit the paper on the normal due date of September 29.

Grading Rubric

Your grade will be based on the quality of the following aspects of the paper: 1) a table listing all of the behaviors observed with precise definitions of how the behavior begins and ends, 2) a table listing the frequencies of the behaviors in minutes 2 and 4 (separate columns for each), 3) a table containing any behavioral sequences with their descriptions, 4) a format similar to the example paper provided (the Grossman bay goby paper) Introduction, Methods, Results, and Discussion/Conclusion. Grading will be based on the following: 1) thorough descriptions of the behaviors, 2) reasonable accuracy of quantification of their frequency, 3) identification of some behavioral sequences or a well-reasoned argument for why they might not exist, 4) discussion of the adaptive significance of the behaviors, 5) clarity of writing and presentation, 6) solid logic.

Possible Behaviors (feel free to define and describe others)

Hold position – a fish holds position
Explore – a fish appears to be exploring its environment.
Quiver – a fish quivers
Approach – a fish orients and heads towards another fish
Charge – a high velocity approach
Lateral display – one fish approaches another frequently in a perpendicular orientation lateral to the head of the other fish and extends its fins.
Parallel Lateral display – two fish are in parallel orientation with fins extended,
Low-intensity parallel swim – the fish swim in parallel
Head to tail display – fish perform a lateral display but in a head to tail orientation
High-intensity parallel swim -- the fish swim in parallel with fins extended
Nip/head butt – fish appears to nip or head butt other fish
Grasp – one fish grabs the other with its mouth and drags it around
Carousel – fish chase each other in a circular motion
Tail slap – one fish slaps the other with its tail

Fishing for Continuing Education?

Join AFS for a continuing education course or workshop in August!

All courses will be held before the 148th Annual Meeting, at the Atlantic City Convention Center in Atlantic City, New Jersey.

Continuing Education Courses

Accessing Ocean Observatory Systems (OOS) for Fisheries Analysis (half-day)

Bayesian I: Intro to Bayesian Inference Using Gibbs Sampling (BUGS) for Fish Biologists

Bayesian II: Intermediate Bayesian Inference Using Gibbs Sampling (BUGS) for Fish Biologists

Beginning GIS for Fisheries Scientists

Advanced GIS for Fisheries Scientists

A Crash Course in Ageing and Age Validation of Finfish and Shellfish

Intro to R for Fisheries Biologists

Workshops

Impact-a-Thon: Angling for New Ideas in Science Communication

A Life Cycle of Science Communication: Presenting, Writing, Reviewing, and Using Social Media for a Variety of Audiences

Leadership at All Levels of AFS

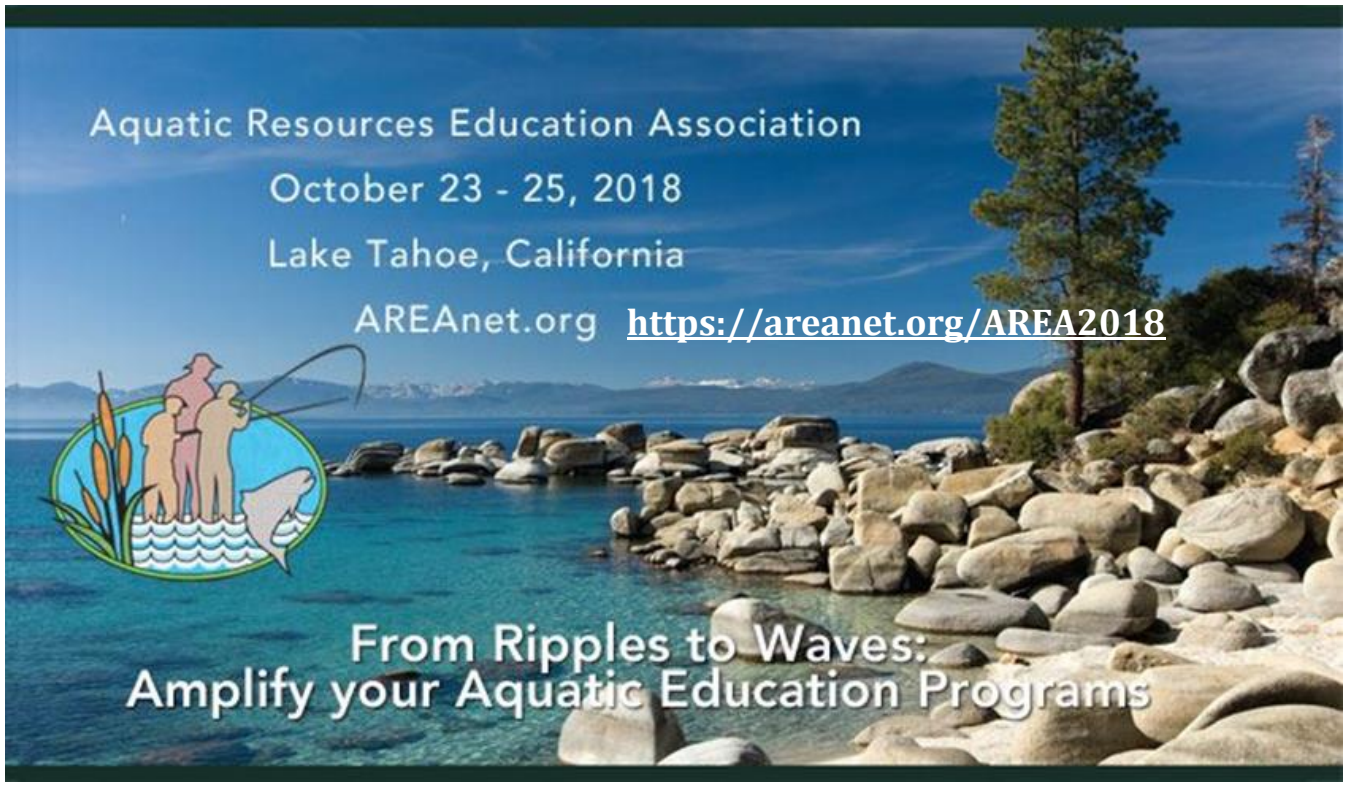
Monsters of Climate Science

Uncomfortable Conversations: Safety and Security in the Fisheries Field

Annual Meeting attendees may add a course when registering for the conference via the online registration system!

AFS Members who register for a two day course package receive a discount, as compared to registering for the courses separately. Choose from Bayesian or GIS!

Not a member yet? Join now to maximize your savings.



AFS
EDUCATION SECTION

AFS
STUDENT SUBSECTION

Graduate Online Courses in Wildlife & Fisheries for Fall 2018

BIOL 830P-02 Advanced Limnology (3 credits)

The study of the classification, structure, and function, of aquatic ecosystems. Online lectures will provide an introduction/review of the biological, physical, and chemical properties of inland waters. Weekly learning activities will more deeply explore ecosystem-level processes and concepts and how they relate to current environmental issues via readings, discussions, and at-home lab and field activities.

BIOL 830P-05 Sustainable Agriculture (3 credits)

This course explores basic concepts in food production, sustainable agriculture, biotechnology, genetic engineering, plant health, soil science, and climate change, etc. How can we use biotechnological approaches to develop a sustainable agriculture?

BIOL 884 Freshwater Management Techniques (3 credits)

Through videotaped lectures, reading and writing assignments, and on-line discussions, students will be introduced to both freshwater ecosystems and fishery management. Students will learn to analyze freshwater management problems using multiple techniques, to suggest alternative approaches, and to identify consequences of those approaches.

BIOL 869 Conservation of Birds and Mammals (3 credits)

"Wildlife" is defined as wild birds and wild mammals. It does not include other vertebrates (fish, amphibians, or reptiles), nor does it include invertebrate animals. This is a course about the Principles of Wildlife Conservation, and is not specifically about wildlife management, or even wildlife ecology. However, both these latter subjects will be examined briefly. Wildlife conservation usually involves as much if not more of the following disciplines than it involves biology: history, sociology, and politics. It is recommended that you have taken a course in ecology and statistics before enrolling in this course.

UNK Biology

For more information about these courses, see www.unk.edu/academics/msbio or contact the Program Coordinators at msbiology@unk.edu. Fall 2018 enrollment is now open. Non-degree graduate applications are currently being accepted at www.unk.edu/admissions/apply.php

Editor's Note

If you have comments or suggestions, please feel free to contact us. We encourage submissions and ideas for future issues of the newsletter. Contributions, comments, and suggestions may be emailed to us at any time.

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ATLANTIC CITY 2018

AMERICAN FISHERIES SOCIETY

COMMUNICATING THE SCIENCE OF FISHERIES CONSERVATION TO DIVERSE AUDIENCES

AUGUST 19-23, 2018