



# THE Open Reading Frame

Newsletter of the  
Genetics Section of the American Fisheries Society

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Threadfin Butterflyfish (*Chaetodon auriga*) in Keone'o'io Bay, HI. Bill Abbott.



## President's Message



Dr. Garrett McKinney  
AFSGS President

Welcome to the Fall 2024 edition of the AFS Genetics Section newsletter. This will be my last message as president and I'm excited to pass the position on to our next president, Jared Homola. This has been a busy year for the AFS Genetics Section with a number of changes, including a new logo (more on this below), new members on the Executive Committee, and a new communications committee. Following the elections this year, Shawn Narum will be joining the AFSGS leadership as President-Elect and Kim Scribner will

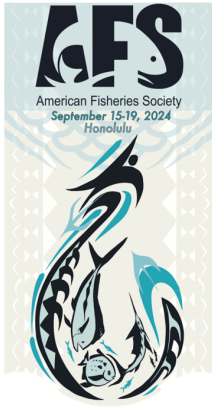
be Member-at-Large, taking over the role from Robin Waples who served in this position since 2016. I'd like to welcome Shawn and Kim in their new roles and I'm excited for the experience and perspectives they will bring to these positions. I'd also like to thank Mary Peacock and Wendy-Lee Stott for continuing to serve the AFSGS Executive Committee as Treasurer and Historian/Parliamentarian. Unfortunately, the changing of the guard means that Marlis Douglas will be stepping out of her role as Past-President, but she will be joining the AFS National leadership as Second Vice President. We have been fortunate to have her as part of our team for the last six years.

There are a couple big pushes that the Executive Committee has made in the last couple years to improve member engagement and promote research and networking by young scientists. The first is the formation of a communications committee by Marlis. This committee will work to disseminate important information to members and facilitate communication among members of the Genetics Section. The second is hosting a symposium for graduate students and postdocs at the AFS National meeting. Mary Peacock and Jared Homola have led the symposium the last two years, and it has been a great way to showcase the work of upcoming scientists in our membership. This year the symposium will be held all day on September 19th at the National meeting.

In addition to the symposium, the AFS genetics section will also be hosting a social on Tuesday, September 17th (6–8pm) in conference venue 313B. As part of the social we will be hosting an in-person awards ceremony to recognize this year's recipients of AFS genetics section awards. We hope to see you there to support our awardees.

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**Garrett J. McKinney**  
President, AFS Genetics Section



# American Fisheries Society 154th ANNUAL MEETING

September 15-19, 2024 - Honolulu, Hawai'i

*Conserving Fishes and Fishing Traditions through Knowledge Co-Production*

Co-hosted by the AFS Western Division and the Pacific Islands Chapter

## Highlighting the Cutting Edge: Graduate and Early Career Research in Genomics Thursday, September 19 | 8:00 am–5:30 pm | 322AB

Conservation Genomics is a burgeoning field due to the rapid evolution and recent advancements of 'omics' technologies. The use of high-throughput and long-read sequencing methods is changing both what we can ask and how we ask it. This symposium highlights the cutting edge of genomics research in fisheries and aquatic sciences by profiling the current research of graduate students and early career professionals. These researchers, who represent the next generation of evolutionary and conservation scientists, are often using the latest in genomic sequencing and analytic methodologies to answer important questions about the conservation of marine and aquatic ecosystems in the face of global change, while also leading the field in new directions.

**Organizer:** Mary Peacock, University of Nevada Reno, [mpeacock@unr.edu](mailto:mpeacock@unr.edu); **Co-organizers:** Jared Homola, Samantha Straus, Alana Luzzio

**Supported by:** AFS Genetics Section

**AFS Genetics Section Social**  
Tuesday, September 17 from 6:00–8:00 pm  
Room 313B

[Click here to view all the sessions!](#)



School of Hawaiian Flagtail in Shark's Cove, Oahu.  
Thomas Shahan.

## Genetics Section Executive Committee Elections

The Genetics Section Executive Committee consists of a President, Secretary-treasurer, and Member-at-Large. These volunteer positions help keep the Section running and allow us to provide members with opportunities to interact at meetings as well as stay informed about upcoming events, training, jobs, and grant opportunities. The secretary-treasurer and member-at-large positions are two-year terms and the president spends two years as president-elect, two years as president, and two years as past-president. This year we had one uncontested candidate for each position. Elections were open from August 7-21, 2024 and were conducted electronically, with 31% of our membership voting. Congratulations to all the successful candidates!

### President-Elect – Dr. Shawn Narum

I am the Lead Geneticist/Chief Scientist with the Columbia River Inter-Tribal Fish Commission, with my research group based out of a laboratory in Hagerman, Idaho. Since 2002, I have led a research group of scientists involved in conservation genetics and ecological genomics research of salmonids and other fish species. We aim to apply cutting edge genomics tools to support conservation and recovery efforts of native fish species by Native American tribes in the Pacific Northwest USA. Our three primary areas of research include genetic tagging and monitoring of fisheries, population and ecological genomics, and genetic effects of hatchery practices.

I have always been fascinated by fish and began my higher education with a B.S. in Fisheries Biology at Colorado State University. In graduate school, I pursued my M.S. studying population genetics and evolution of rockfish speciation at University of San Diego. I followed with my Ph.D. from University of Idaho with studies of genetic and life history variation in steelhead. I have been a member of AFS starting in 1994, and the Genetics Section since 2002.



I have had the opportunity to stay involved with mentoring students through adjunct faculty positions with Idaho State University and University of Idaho. Mentors in the genetics community guided me towards editor roles with scientific journals, with Fred Utter bringing me on as an Associate Editor with Transactions of the American Fisheries Society from 2007–2018, and Louis Bernatchez providing encouragement to join the editorial board of Molecular Ecology Resources where I have been the Editor-in-Chief since 2014. These have been enlightening opportunities with exposure to broad perspectives across complicated and often controversial issues in the fields of fisheries and molecular ecology.

I will bring these experiences to the AFS Genetics Section as President Elect, and work towards bringing more voices to conversations focused on conservation of genomic variation in the vast world of fisheries.

### Secretary-Treasurer – Dr. Mary Peacock

I am now Professor Emeritus. YAY! Although I am still very involved in ongoing collaborations and an active member of the American Fisheries Society.

My research focus was Conservation Genetics and I worked primarily on ESA listed threatened and endangered fish species found in the western United States. My students and I used genetic and genomic tools to assess how organisms assort themselves on the landscape and focused on how anthropogenic disturbance have affected movement patterns. I have spent 30+ years working on the conservation of Lahontan cutthroat trout (*Oncorhynchus clarkii henshawi*) and worked closely with federal and state land and species management agencies as well as non-governmental organizations such as Trout Unlimited, in formulating recovery strategies and implementing genetic monitoring of restoration activity outcomes.

I received my PhD in Zoology from Arizona State University in 1995. I have been a faculty member in the Department of Biology at the



### Secretary-Treasurer - Dr. Mary Peacock, cont'd

University of Nevada, Reno since 2004. During the prior decade, I was the Assistant Director for Research for the Biological Resources Research Center, a conservation biology organization within the University of Nevada system.

I have been a member of the American Fisheries Society since 1994 and active in the Genetic section for at least the past decade. I am a big fan of the American Fisheries Society and have served as Secretary/Treasurer for the Genetics Section for two, two-year terms to date. I am pleased to continue to serve in this capacity. My aims for the Genetics Section are to increase our visibility among graduate students, postdoctoral fellows and early career geneticists to foster collaboration. I also am keen to give these young scientists a platform to increase their own visibility for postdoc and job opportunities. To that end, I have organized a symposium (together with other AFS Genetics Section members including graduate students, postdocs, and agency fisheries biologists) for the last two national AFS meetings, that highlight cutting edge research being done by graduate student and early career professionals.

### Member-at-Large Hall of Excellence Committee - Dr. Kim Scribner

I am Professor (Emeritus) in the Department of Fisheries and Wildlife at Michigan State University (MSU). I was on the MSU faculty for 26 years associated with several departments and inter-disciplinary programs including Ecology and Evolutionary Biology and Genetics and Genomics. I was also a member of the Partnership for Ecosystem Research and Management (PERM) cooperative research program between the Department of Fisheries and Wildlife at Michigan State University and the Michigan Department of Natural Resources. Prior to my faculty appointment at MSU I was the Project Leader of the Molecular Ecology Laboratory for the U.S. Geological Survey Alaska Science Center. I received post doctoral training in the Department of Zoology at the University of Leicester (UK). I received my PhD from the University of Georgia.

I am an evolutionary ecologist with broad academic and professional training and interests in population ecology and genetics. Work in my laboratory has been directed toward the use of molecular genetic markers as sources of inference at the individual, population, or ecosystem levels. Research interests include analyses of environmental and genetic effects on early life history traits in fishes, comparative phylogeography of waterfowl, studies of mating systems of birds and fishes, landscape genetics. Emphasis is placed on managed or exploited populations and in the area of Conservation Biology.



I have been a member of the American Fisheries Society and the Genetics Section since 1997. I have served the Section as President and have represented the Section in a variety of capacities associated with Section and Society committees. I have also participated in annual Society meetings through sponsorship of numerous symposia. I was elected to the Section's Hall of Excellence in 2022.

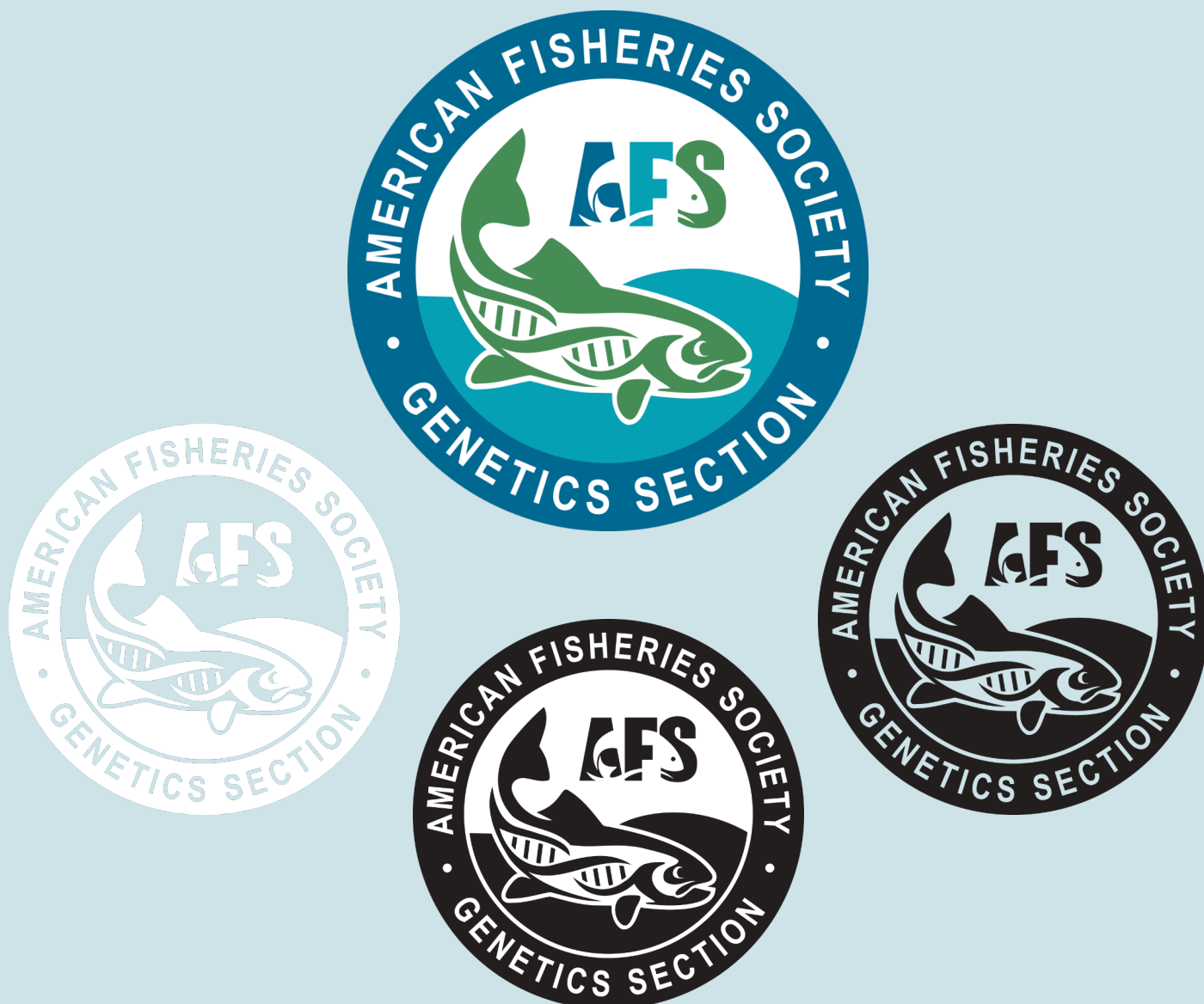
I have a strong desire to continue my professional association with AFS and the Genetics Section in retirement to devote time in service to professional colleagues and friends. I look forward to working with Section membership as a Member-at-large for AFS Genetics Section Hall of Excellence Committee.

*Thank you for your hard work  
and dedication to our Section!*

## \*NEW\* AFS Genetics Section Logo

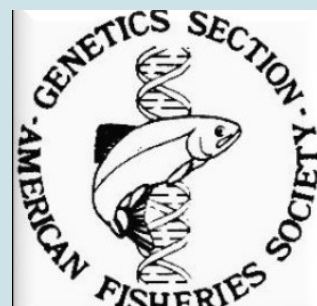
AFS updated the Society logo last year as part of a long-term goal to establish 'AFS as a Brand.' As part of this strategy, all units and sections were asked to redesign their logos and make it consistent with the new AFS logo design and color scheme. The Genetics Section Executive Committee solicited professional services for a redesign of the Section's logo and contracted with Alosa Studio to create a new logo consistent with the guidelines. Several excellent options were provided for review and a final choice was selected by majority consensus. We present the new Genetics Section logo here in the newsletter. We hope you like the new logo as much as we do.

**Dr. Garrett J. McKinney**  
President, AFS Genetics Section



When creating the new AFS Genetics Section logo I had to use the new AFS logo/branding guidelines as a start, and knew a double helix was what the section leaders required for the design. The logo design that was chosen was actually the first one I had created. It just felt right to me to incorporate the double helix within the fish. I took into account the old AFSGS logo and kept the circle shape surrounding the new art, and used the wave from the AFS logo to try to pull the two logos together. It was a privilege to be able to design the new AFSGS logo.

**Shannon Homola**  
Alosa Studio



Previous AFSGS logo

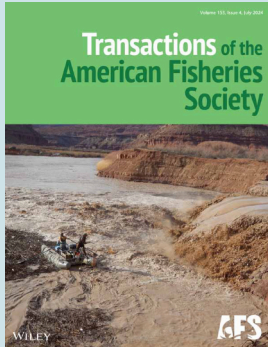
# In case you missed it...

## Recent genetics papers from AFS journals and beyond

Click citations for link to papers

Schwinghamer et al. Genetic predictors of population resilience: A case study of native Brook Trout in headwater streams. *North American Journal of Fisheries Management*.

Van Doornik et al. A new, standardized international Pacific Rim baseline for genetic stock identification (GSI) of Chinook Salmon. *North American Journal of Fisheries Management*.



Shaffer et al. Comparison of environmental DNA and underwater visual count surveys for detecting juvenile Coho Salmon in small rivers. *North American Journal of Fisheries Management*.

Hargrove et al. Interspecific hybridization in a large-river population of Yellowstone Cutthroat Trout: A 20-year programmatic evaluation. *North American Journal of Fisheries Management*.

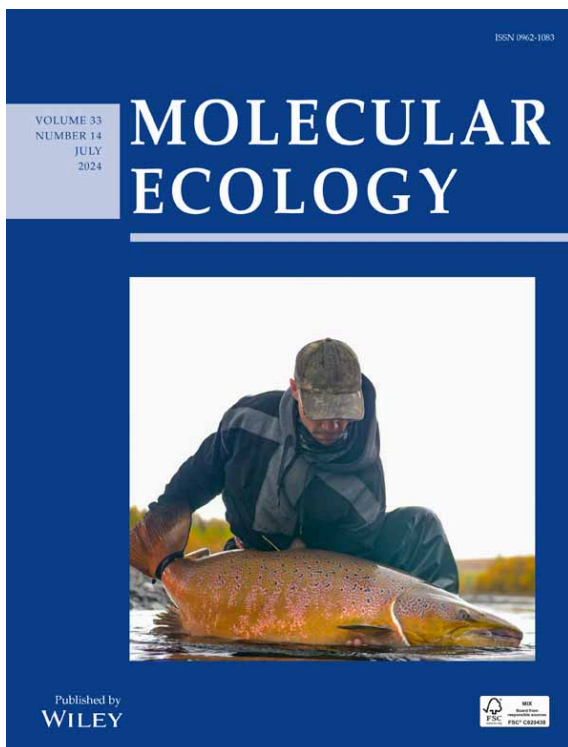
Steele et al. Inferring precocial Chinook Salmon production through single-parentage assignments. *Transactions of the American Fisheries Society*.

Wells et al. Population assignment of migratory Westslope Cutthroat Trout (WCT) in the Clark Fork–Pend Oreille River Basin. *Transactions of the American Fisheries Society*.

Riddell et al. A Review of Pacific Salmon hatcheries in British Columbia, Canada, and interactions with natural populations. *Fisheries*.

Vilcot et al. Neutral processes and taxonomic scale drive beta species-genetic diversity correlations in a submesophotic tropical reef fish. *Molecular Ecology*.

Hartman et al. Niche conservatism and spread explain introgression between native and invasive fish. *Molecular Ecology*.



Belding et al. Integrated organismal responses induced by projected levels of CO<sub>2</sub> and temperature exposures in the early life stages of lake sturgeon. *Molecular Ecology*.

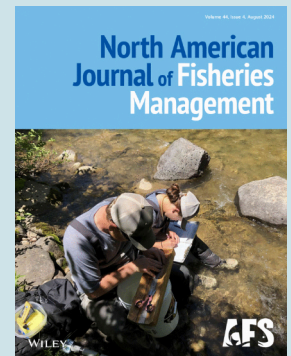
Aykanat et al. Ontogenetic variation in the marine foraging of Atlantic salmon functionally links genomic diversity with a major life history polymorphism. *Molecular Ecology*.

Clarke et al. Global assessment of effective population sizes: Consistent taxonomic differences in meeting the 50/500 rule. *Molecular Ecology*.

Caccavo et al. Whole-genome resequencing improves the utility of otoliths as a critical source of DNA for fish stock research and monitoring. *Molecular Ecology Resources*.

Madrigal et al. Klumpy: A tool to evaluate the integrity of long-read genome assemblies and illusive sequence motifs. *Molecular Ecology Resources*.

Ramos and Culver. Integration of Indigenous Research Methodologies, Traditional Ecological Knowledge and molecular scatology in an assessment of mesocarnivore presence, diet and habitat use on Yurok Ancestral Lands. *Molecular Ecology Resources*.



# Calendar

*Click listings for more info*

## September 2024

15<sup>th</sup>–19<sup>th</sup>: 154<sup>th</sup> Annual Meeting of the AFS. Honolulu, HI, USA.

22<sup>nd</sup>–25<sup>th</sup>: Association of Fish and Wildlife Agencies 114<sup>th</sup> Annual Meeting. Madison, WI, USA.

30<sup>th</sup>–Oct. 3<sup>rd</sup>: North American Invasive Species Management Association 32<sup>nd</sup> Annual Conference. Missoula, MT, USA.

## October 2024

13<sup>th</sup>–18<sup>th</sup>: 7<sup>th</sup> International Marine Conservation Congress. Cape Town, South Africa.

## November 2024

18<sup>th</sup>–21<sup>st</sup>: Australian Society for Fish Biology Conference. Newcastle, NSW, Australia.

25<sup>th</sup>–28<sup>th</sup>: International Flatfish Symposium. Wageningen, the Netherlands.

## December 2024

1<sup>st</sup>–7<sup>th</sup>: Black in Marine Science Week. San Diego, CA, USA.

1<sup>st</sup>–6<sup>th</sup>: 3<sup>rd</sup> International Symposium on Introduced Salmonids. Valdivia, Chile.

## Save-the-Date!

May 12<sup>th</sup>–15<sup>th</sup> 2025: Coastwide Salmonid Genetics Meeting 2025. Anchorage, AK, USA.

To find dates and information for AFS chapter meetings, visit [fisheries.org/about/units/](https://fisheries.org/about/units/)

# Job Postings

*Click ads for more info*

### **Invasive Species Geneticist - Virginia Tech.**

The Department of Fish and Wildlife Conservation seeks applicants to study fish or wildlife populations using cutting-edge genetic/genomic tools to improve detection, identification, rapid response, management, and/or eradication of invasive species. Possible areas of research could include the use of environmental DNA, metabarcoding, genomics, proteomics, transcriptomics, gene editing, or related approaches for studying invasive species that affect fish or wildlife populations. Review date: October 11, 2024.

### **Stock Assessment Biologist - Upper Skagit Indian Tribe.**

The primary responsibility of the Stock Assessment Biologist shall be to use existing, or design as needed, and implement fishery related research and monitoring programs/studies aimed at improving stock population forecasting, in-season management, and spawner escapement analysis in conjunction with other Natural Resources Department and Policy staff as well as coordinate with appropriate comanagers. Investigations and studies shall be conducted using acceptable scientific protocols to ensure validity of estimates and coordinate in-season assessments of various metrics of Pacific anadromous salmonids with appropriate comanagers. This position will work with the Harvest Management Biologist and Policy Managers in providing review and development of preseason forecasting and information necessary to manage fisheries in-season. Open until filled.

### **Post-Doc Opportunity - Dalhousie University**

A two-year postdoctoral position is available in the group of Daniel Ruzzante at Dalhousie University pending a successful NSERC/Mitacs funding application. The candidate must have experience in population genetics with a successful publication record and proficiency in bioinformatics and the analysis of low-coverage whole genome sequencing data (IcWGS). Ideally, the candidate will also be knowledgeable in acoustic and satellite tracking data analysis. To apply please submit a cover letter describing why you would want to join the group, a CV, and the names and contact information of two references familiar with your work. Starting date will be as soon as funding is confirmed, likely September 2024 onwards.

### **MSc Opportunity - UNBC**

UNBC and Tsay Keh Dene Nation-owned Chu Cho Environmental are seeking a creative, inspired MSc student to conduct genetic analysis on samples from populations of Bull Trout in the Williston Reservoir watershed, identify population structure, and evaluate potential hypotheses about factors affecting population structure and gene flow. The prospective student will join the UNBC genetics lab of Dr. Brent Murray. Study outcomes will have a direct impact on abundance monitoring and management decisions for Bull Trout in the upper Peace River Basin.



Waimea River, HI. Bryan Ochalla.

## Section Officers

### President

Jared Homola  
jhomola@uwsp.edu

### President-Elect

Shawn Narum  
nars@critfc.org

### Past President

Garrett McKinney  
garrett.mckinney@dfw.wa.gov

### Secretary-Treasurer

Mary Peacock  
mpeacock@unr.edu

## Committees

### Hall of Excellence

Shawn Narum, Chair  
Kim Scribner, Member-at-large  
Marlis Douglas  
Garrett McKinney

### James E. Wright Award

Matthew Campbell, Chair  
Audrey Harris  
Lucas Nathan

### Early Career Award

Kerry Reid, Chair  
Craig Stockwell  
Trevor Krabbenhoft

### Stevan Phelps Award

Ken Currens, Chair  
Adrian Spidle  
Craig Busack  
Morgan Robinson

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Mary Peacock

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