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Audrey J. Geffen & Cindy J.G. van Damme, Editors

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ELHS Back Then

15 years ago: Jeff Govoni is appointed as ELHS Historian/Archivist

20 years ago: President Jim Cowan calls for drafting of ELHS Standing Rules with a committee meeting at Dauphin Island Marine Lab.

25 years ago: ELHS President Don Hoss argues against dissolution of ELHS and formation of Annual Larval Fish Conference organization focused solely on the Annual Larval Fish Conference

35 years ago: Ahlstrom Memorial Symposium "Ontogeny and Systematics of Fishes" held in La Jolla, California, with 75 papers by 70 invited speakers.

Deadline for material to be included in the next issue of Stages:

February 15, 2019



Newsletter of the
Early Life History Section
of the American Fisheries Society

Section Flag Tour - on the road again!



Graham Hanson and Jon Barge show off the LFC flag in the field while sampling lake sturgeon larvae, part of ongoing work on remediation and restoration in the Great Lakes.

– Joel Hoffman
Ecosystem
Services Branch, EPA
Duluth, Minnesota

President's Message

Dear friends and colleagues,

My first action as President is to thank Frank Hernandez (outgoing-President) and Dominique Robert (outgoing-Secretary) for their work over the last two years because the Section is in excellent shape and they were pro-active in ensuring the success of our programs and have provided Hannes and I with their expertise on how to maintain the effective management of the Section's activities. I also want to thank Jeff Buckel for his continued involvement as our Treasurer, keeping track of our funding provides resources for student travel and awards. I would also like to welcome Claire Paris-Limouzy (President-elect) and Alison Deary (Secretary-elect) and thank them for putting the names forward to continue the activities of the Section into the future. Finally, it's important to extend my appreciation to the Newsletter's editors (Cindy van Damme and Audrey Geffen), our time-and-place committee chair (the ever-persistent Chris Chambers), our webmaster (Klaus Huebert) and our outgoing historian (Jeff Govoni), and the early career committee (Alison Deary and Marta Moyano): all of whom work in the background but their contributions represent essential elements that keep the Section going. I would also like to thank Stu Ludsin who volunteered to provide a mentoring session on "Demystifying the Proposal Process" aimed at early career scientist at LFC 2018.



This year is a time for renewal for many of the Section's positions. Dominique Robert has volunteered to take over the webmaster position to give Klaus some relief after several dedicated years of service. Klaus provided important improvements to the content and quality of presentation of the section's website during his tenure. ...continued next page

President's Message cont. Recently, the ELHS has adopted additional social media platforms (Twitter, Facebook). These will require coordination among the various platforms be improved to ensure continuity and conformity of content, as well as timely updates in this time of instant access of information. The importance of these media was obvious during the LFC as a number of participants fed these information streams throughout the meeting.

Alison Deary and Marta Moyano have asked to step down from their role. Both have been very active in providing stimulating opportunities to learn about important aspects of career development for young scientists entering our field of research. They also worked on development of a post-conference survey that helps the ExComm and conference planners to understand what works and what doesn't. Their energy and enthusiasm will be missed. I am therefore seeking volunteers to take on this role for the Section - Alison and Marta have offered to provide guidance. Anyone interested can contact me directly.

The second post we need to fill is that of Section Historian. Jeff Govoni, after 14 years of service to the Section,

has asked to step down. I am certain that the entire Section wishes to express its gratitude for Jeff's dedication to maintaining the historical record of our activities. Much of the information is maintained on the LFC website but some paper archives of the ELHS are maintained at Jeff's residence, outside of Beaufort, NC, and it may be time to transform those records to an electronic format. Again, I am seeking a volunteer to take on the role for the Section.

An important aspect of the Section's activities involves fund-raising for student awards and travel grants. In recent years, funds generated through the silent auction donations and raffle (Sally Richardson Award) and sale of the flag (John Blaxter Award) have covered the costs of the awards. However, we have had no income to the Grace Klein-MacPhee fund and we have covered the costs of travel grants to students from our general fund. Although our resources are stable we can expect a considerable number of requests for funding from North American students for next year's LFC in Palma de Mallorca, Balearic Islands, Spain. The Executive Committee will have to consider options to meet the expected demands.

In taking over the role of President during the 2018 LFC in Victoria, I felt very comfortable with the state of the Section. Participation in the conference was good and I got a very strong sense of community spirit during all parts of the meeting, whether during the various social events, breaks or during the Q & A portions of the sessions. Several first-time participants commented on how approachable everyone was; a clear sign that the conference achieved its primary goal - enhance the exchange of ideas among those interested in research on the early life stages of fish. If I compare the nature of the contributions to those I encountered during my first LFCs, many years ago, I found that current research into early life stages generally aims for greater integration into understanding the dynamics of systems rather than principally focused on recruitment dynamics. Our conference left me with a sense that research into the early life stages had reached a degree of maturity that provides important insight into the importance of egg, larval and juvenile in the life cycle of fish and their position in aquatic ecosystems.

— Pierre Pepin

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People

Public Outreach for your Research

Dear colleagues,

Do you or your colleagues need an easy way to achieve significant public outreach for your research? I have been producing an audio program called *Science and the Sea*TM since 2006. That program is an audio segment which is broadcast by 272 affiliates in the U.S. and Canada, and it is also a podcast and a website (www.ScienceAndTheSea.org). Each program is 2 minutes long and conveys something interesting about the marine world in an engaging way. *Science and the Sea* covers all aspects of marine science (e.g., biology, chem-

istry, geology, physics), and we particularly like to use the program to explain how things work in the marine world. *Science and the Sea* also features recent research discoveries.

I welcome any ideas you have for topics that you feel would be interesting to a general audience. If you have published something exciting and would like us to try to cover that work, send me a reprint and I will have our scriptwriter work on it. We can produce a story about your work at no cost, or we can offer sponsorship of a fee and we'll mention your funding agency at the end of the episode. Either way, the only work on your part

is to provide the source material and to fact-check the 250-word script that our writer produces.

We produce a new volume containing 13 episodes every 3 months. We are gearing up for volume 51 right now. So, let me know if you have any ideas. We could have your episode of *Science and the Sea* on the air between January and March if you send me an idea soon. But, we accept script ideas at any time, so keep this in mind in the future, too.

Lee Fuiman, lee.fuiman@utexas.edu
University of Texas Marine Science
Institute

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photo by Charles Foster

Science and the Sea

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On the Air: October 14, 2018

Fish Herders

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News

PhD Opportunity at Southern Illinois University

With an anticipated start date of January 2019, the research will focus on advancing our understanding of:

1) relationships between spatial patterns of early life history and recruitment of fishes in the Upper Mississippi River, and

2) the role of tributaries in supporting large river fish populations.

Qualifications include M.S. in Fisheries, Aquatic Ecology, or related field, strong written and oral communication skills and strong analytical skills. Experience with fish sampling in large rivers and otolith microchemistry is

desirable but not required. Please send cover letter, CV, unofficial transcripts, GRE scores, and contact information for three references to Dr. Greg Whitledge gwhit@siu.edu

– Kristen Bouska
USGS, La Crosse, WI

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News from the Regions

Pacific Region

Akinori Takasuka

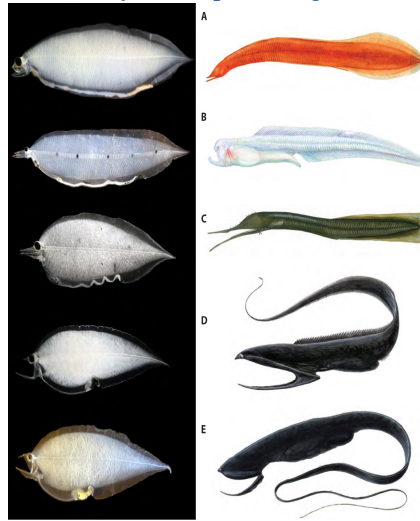
Recently, an interesting paper on unusual leptocephalus larvae has been published. A co-author from the Pacific Rim, Mike Miller, introduces key findings of the paper.



Unusual leptocephalus larvae matched with deep-sea eels

The leptocephalus larvae of eel-like fishes have always been difficult to match with their adult forms because their larval morphology is totally different than the juvenile and adult body forms. Poulsen *et al.* (2018), with coauthors from Japan, recently reported on the previously unknown identities of two types of unusual leptocephali and used DNA sequences and gene orders to show the likely existence of a new anguilliform family. A larval type that was tentatively referred to for many years as "*Leptocephalus holti*" (Fig. 1B left) was thought to possibly belong to the family Cyematidae (Smith and Miller 1996) because it shared some morphological features with the larvae of *Cyema atrum* (Fig. 1C left), such as pointed jaws and dorsal spots. However, DNA sequences revealed that the several different types of *Leptocephalus holti* were actually the larvae of the Monognathidae (Fig. 1B right), and one larva from the North Pacific was an exact sequence match with *Monognathus jespersenii*. The monognathids are small anguilliforms that live in the bathypelagic zone, but their larvae live in the surface layer with other leptocephali. An even more unusual larva that is unique among leptocephali in having orange pigment spots on its head, throat and gut was recently col-

lected in the Sargasso Sea, and it was genetically matched with the rare orange-colored deep-sea anguilliform *Neocyema erythrosoma* (Fig. 1A) which has only been collected a few times, and only in the North Atlantic (Poulsen 2015). The paper shows photographs of the larvae of each of the known types of "saccopharyngiform" fishes (Fig. 1), which are included within the Anguilliformes (Inoue *et al.* 2010), and the clear genetic and gene order differences along with morphological differences seem to indicate it represents a separate family of deep-sea anguilliforms.



References

- Inoue J. G., M. Miya, M. J. Miller, T. Sado, R. Hanel, J. A. López, K. Hatooka, J. Aoyama, Y. Minegishi, M. Nishida, and K. Tsukamoto (2010) Deep-ocean origin of the freshwater eels. *Biol. Lett.* 6: 363-366.
- Poulsen J. Y. (2015) Fifth confirmed record and North Atlantic range expansion of the rare pelagic bobtail snipe eel genus *Neocyema* (Cyematidae, Elopomorpha). *Mar. Biodiv. Rec.* 8(e53): 1-5.
- Poulsen, J. Y., M. J. Miller, T. Sado, R. Hanel, K. Tsukamoto, and M. Miya (2018) Resolving deep-sea pelagic saccopharyngi-

form eel mysteries: Identification of *Neocyema* and Monognathidae leptocephali and indication of a new fish family "Neocyematidae" based on larvae, adults and mitogenomic gene orders. *PlosOne* 13(7): e0199982.

- Smith, D. G., and M. J. Miller (1996) Cyematid larvae of the *Leptocephalus holti* group in the Atlantic and Pacific oceans (Pisces: Saccopharyngiformes). *Breviora* No. 503: 1-12.

—Michael J. Miller

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Western Region

Dan Marguiles

Guide to Larval and Early Juvenile Cyprinids of the middle and lower Pecos River and Rio Grande: Morphological Descriptions, Comparisons, Illustrations, and Computer-Interactive Key



One of the more diverse freshwater fish assemblages in the North American Southwest can be found in the Pecos River in eastern New Mexico and northwestern Texas and the Rio Grande upstream of the Pecos River confluence through Big Bend National Park. At least 55 species of fish have been reported from these riverine systems, of which 38 are native species representing 12 families. Cyprinids (native and non-native) compose about 50% of the fish found in these aquatic regions.

Native fishes in the Pecos River and Rio Grande have undergone severe range reductions, extirpations, and extinctions. ...continued next page

Western cont. Key contributors to these losses are river fragmentation, water diversion and delivery practices, nonnative fish introductions, and water quality degradation. These alterations have a significant impact on short-lived cyprinids. Several native cyprinids in this watershed are listed as species of concern by state and federal resource agencies. Cyprinids within the reproductive guild of pelagic-broadcast spawners that produce semibuoyant eggs are particularly vulnerable. This guild is acutely susceptible to river fragmentation and reduced or altered flow.

There is a dearth of information pertaining to cyprinids of this region and even less regarding their early life history. With funding provided by the U.S. Bureau of Reclamation, American Southwest Ichthyological Researchers and the Larval Fish Laboratory (LFL) at Colorado State University collaborated on this project utilizing the effective format and computer-interactive keys developed by the LFL. The purpose of this guide is to help facilitate future monitoring and recovery programs to assess this vulnerable life stage and provide a better understanding of the complex spawning dynamics of species in this family.

The recently completed guide (Cyprinid Fish Larvae and Early Juveniles of the middle and lower Pecos River and Rio Grande) provides de-

scriptions of 16 species of cyprinids, 12 native and four introduced. Each species description documents meristics, morphometrics, pigmentation patterns, gut phase transitions, and sizes relative to selected developmental events. Three-view (dorsal, lateral, and ventral) drawings illustrate larval and early juvenile ontogeny of each species. Differences among species within the discrete ontogenetic phases can be discerned by referencing the comparative tables and figures. In addition, a computer-interactive key is also provided that integrates these facets for ease of identification. All of these components work in concert to help improve the ability of researchers to identify larval and early juvenile cyprinid species from the study area. This guide is a companion work to the forthcoming Cypriniform Fish Larvae and Early Juveniles of the Middle Rio Grande guide and collectively, they markedly elevate our knowledge of fishes in the Rio Grande Basin upstream of Amistad International Reservoir.

The guide and its computer-interactive key, Cyprinid Fish Larvae and Early Juveniles of the middle and lower Pecos River and Rio Grande, can be downloaded from the LFL webpage [LFL webpage](#).

— W. Howard Brandenburg¹, Darrel E. Snyder², Steven P. Platania¹, and Kevin R. Bestgen²

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²Larval Fish Laboratory Department of Fishery and Wildlife Biology Room 33 Wagar Building Colorado State University Fort Collins, Colorado 80523-1474

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North Central Region

Ed Roseman

Confirmed Successful Spawning of Lake Sturgeon in the St. Marys River



A new collaborative project between US Army Corps of Engineers, US Geological Survey, US Fish and Wildlife Service, and Lake Superior State University has resulted in the first documentation of lake sturgeon (*Acipenser fulvescens*) spawning in the St. Marys River proper. This project is evaluating a change in the compensating gate schedule. The compensating gates located just upstream of the St. Marys Rapids, along with the navigational locks, regulate the outflow of Lake Superior into Lake Huron. ...continued next page



Ethan Binkowski (Lake Superior State University) and Steve Gambicki (US Fish and Wildlife Service) rinsing a D-frame net which was targeting larval lake sturgeon.



Lake sturgeon egg collected on 28 June 2018 in the St. Marys River, MI.



Larval lake sturgeon collected 26 July 2018 in the St. Marys River, MI.



Faith Vandrunen (contractor at US Geological Survey) and Kaley Genter (US Fish and Wildlife Service) processing a conical net sample before re-deploying the gear to fish all night.

North Central cont. A multi-year early-life history survey began this spring to document fish use and larval fish hatch phenology in the St. Marys River upstream and downstream of the St. Marys Rapids, as well as near a recently completed restoration project in an area known as the St. Marys Little Rapids. Eggs were collected using egg mats at 27 locations.

Lake sturgeon, troutperch (*Percopsis omiscomaycus*), sucker (family Catostomidae), and steelhead (*Oncorhynchus mykiss*) eggs were captured at locations throughout the river. Larval fish sampling began at ice-out and continued through August. Larvae were sampled at 16 locations in the river using a variety of sampling gear including bongo, Miller, conical, and benthic D-frame nets. Lake sturgeon (21 individuals) were captured in the D-frame nets from 6 July - 26 July as yolk-sac and larvae. Other fish identified include sculpin (family Cottidae), burbot (*Lota lota*), rainbow smelt (*Osmerus mordax*), salmonids (family Salmonidae), and sticklebacks (family Gasterosteidae). The collection of lake sturgeon eggs and larvae are of special interest to managers because they are listed as threatened in Michigan and endangered in Ontario. Sampling for eggs and larvae in the St. Marys River will continue and be expanded in 2019.

— Robin de Bruyne
USGS, Ann Arbor, MI

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Northeast Region

Katey Marencik

The Way To the Heart of Sébaste Recruitment Is Through Its Stomach

Understanding population dynamics of commercially impor-



tant fisheries species is a primary goal of fisheries science and management. The deepwater redbfish fishery, *Sebastes mentella*, also known in Québec as the "sébaste", has been under a moratorium in the Gulf of the St. Lawrence since 1995, after overfishing and years of poor annual recruitment caused local populations to crash and remain low. Unprecedentedly high recruitment of the 2011 cohort, along with relatively strong recruitment of the 2012 and 2013 cohorts, have allowed the Gulf redbfish population to rebound to a record high biomass of 2.5 million tons in 2017, and talks of reopening the fishery are currently underway.

Little is known about the early life history of *S. mentella*, and the environmental drivers behind the successful recruitment years of 2011-2013 are unknown. Starvation is believed to be one of the primary causes of mortality during the larval stage. The quality and quantity of food consumed by a larva can affect its growth, physiology, and behavior, all of which play a role in its survival to recruitment. Dominique Robert (Université du Québec à Rimouski) and Pascal Sirois (Université du Québec à Chicoutimi) received funding from the Department of Fisheries and Oceans Canada (DFO) to investigate the diet of larval and juvenile *S. mentella*. PhD candidate Corinne Burns, who joined the lab at UQAR in January 2018, focuses on the trophodynamics, the transfer of nutrients between trophic levels, of larval *S. mentella* in the Gulf of St. Lawrence to understand feeding preferences, growth, and survival of this species.

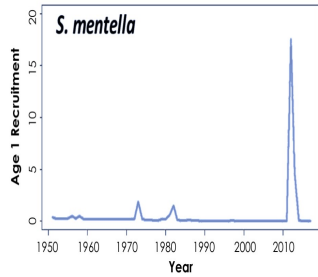
Currently, preserved *S. mentella* larvae from collections made in the Gulf of St. Lawrence between 1997 and 2000 are being measured and dissected. Zooplankton found inside larval stomachs are identified to the species and developmental stage. Using these data, feeding preferences of larval *S. mentella*, both by size class

and year, can be calculated. Preliminary results using data from 1997 and 1998 (with help of Félix Lauzon, a Natural Sciences and Engineering Research Council of Canada undergraduate summer intern), showed no feeding selectivity by larvae for individual zooplankton species. Copepod eggs provided larvae with approximately 50 % of their consumed carbon content in nearly all size classes and both years, followed by *Calanus finmarchicus* nauplii, which provided between 9 - 34% of consumed carbon in the larval diet.

In addition to species-specific stomach content analysis, this project aims to add early life growth data from daily otolith ring measurements in order to determine how diet affects growth rates of individuals. Long term oceanographic data collected by the DFO for variables such as spring SST, salinity, ice coverage, and cold intermediate layer depth, will be used to determine which oceanographic factors drive environments that are conducive for well-fed, strong cohorts of larval *S. mentella*. Results from this project will hopefully shed some light on recruitment variability of this species in the Gulf of St. Lawrence and aid in management of the sébaste fishery in the future.



Preliminary results suggest that approximately half of the carbon in the larval *S. mentella* diet is from zooplankton eggs. *C. finmarchicus* and *Oithona* spp. nauplii are also commonly found in the larval guts. *...continued next page*



Northeast cont. Recruitment of the 2011 cohort of *S. mentella* was magnitudes greater than any other recruitment event to date. Poor recruitment since the mid-1980s prevented *S. mentella* populations from rebounding after being overfished in the Gulf of St. Lawrence.

— Corinne Burns
 ISMER, Université du Québec à
 Rimouski
 Rimouski, Canada

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Southern Region

Trika Gerard

Larval fish diet, metabolism, fatty acids ... oh my!

The Fisheries and Mariculture Laboratory (FAML) of the University of Texas Marine Science Institute, under the leadership of Dr. Lee Fuiman, resumed normal research efforts after suffering severe damage to facilities from Hurricane Harvey in August 2017. The research group is moving full speed ahead on activities that led to the completion of a master's degree, sparked new collaborations, and produced multiple publications.



A major research effort underway continues to explore metabolic programming in red drum. Metabolic programming (or nutritional programming) occurs when nutrition during

a critical window of development leads to long-term changes in an animal's metabolism. In the case of red drum, the amounts of certain fatty acids in eggs are correlated with the amount of certain fatty acids (especially DHA) in larval tissues 21 days later, even when the DHA level of the larval diet is very high. Further, DHA content of the larval tissues is correlated with performance of various traits, such as escape responses. Doctoral student Zhenxin Hou is leading the effort to refine our understanding of metabolic programming in red drum and uncovering the physiological mechanisms that are affected by early nutrition. Prior experiments by Ken Webb demonstrated that the window during which programming occurs does not extend beyond the onset of first feeding (manuscript in review). We are using methods of RNA-Seq to screen 30,000 genes for differential expression related to metabolic programming, with the hope of narrowing the range of physiological systems to explore in greater depth. We are also collaborating with Stefano Tiziani's metabolomics laboratory at Dell Pediatric Research Institute at The University of Texas at Austin. This collaboration brings highly specialized analytical techniques to bear on the topic.

Lee completed analysis of an 8-year time series of the egg boon produced by the annual spawning aggregation of red drum at Port Aransas (Fuiman 2018). That time series started 2 years before and extended 2 years beyond the longest and most severe drought in Texas history. The annual mean fatty acid composition of those eggs showed a striking parallel with the Palmer Drought Severity Index (see Figure 1).

A detailed analysis of those results revealed significant changes in the summer diet of adult red drum, and from that the study concluded that the egg boons mediated climate-related shifts in the degree of benthic-pelagic

coupling and pelagic recycling. This study demonstrates that egg boons can be very useful for investigations of trophodynamics in marine ecosystems and Lee hopes to apply a similar approach on a larger scale toward improved understanding of climate effects on populations of economically important fish populations.

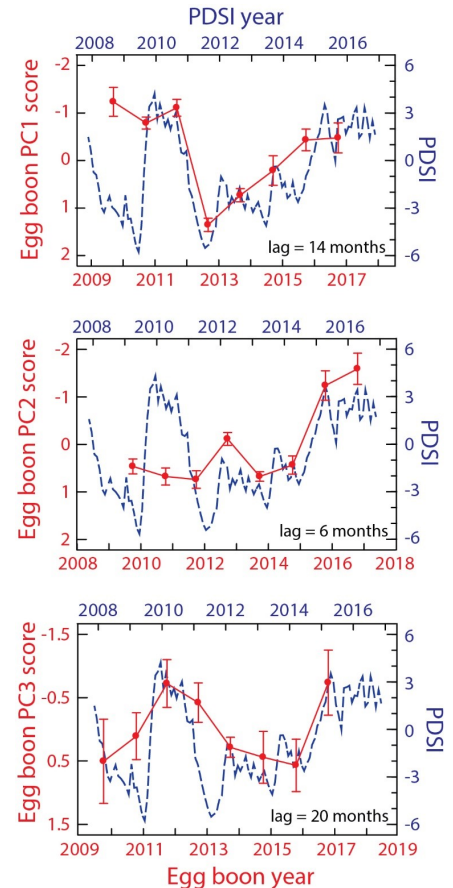
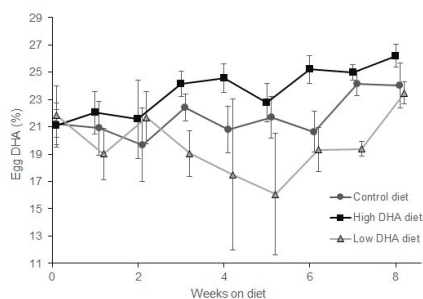


Figure 1. Temporal changes in annual mean fatty acid composition of red drum egg boons (red) and the October Palmer Drought Severity Index (PDSI, dashed blue lines). Axes for egg boon composition (PC scores, solid red lines) are inverted; and axes for egg boon year are offset to the left by the specified lag to facilitate comparison. Error bars show +/- 1 SE. (from Fuiman 2018, doi:10.1002/ecm.1324).

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Southern cont. Corinne Burns completed her master's degree in December 2017 under the supervision of Lee Fuiman. Her thesis, entitled "Fatty Acid Composition of the Maternal Diet Affects Egg and Larval Quality of Southern Flounder, *Paralichthys lethostigma*," contains two research chapters which she is preparing for publication. Those chapters describe her experiments on (1) the effects of maternal diet on egg fatty acid content and what those mean with regard to the reproductive energy allocation strategy of southern flounder;

and (2) the effects of maternally derived nutrients on fatty acid composition and predator evasion behavior of southern flounder larvae. Yolk of marine fish eggs is highly concentrated in fatty acids (FAs) that are used for energy, hormone production, and membrane structure. Essential fatty acids (EFAs) are fatty acids that cannot be biosynthesized in physiologically sufficient amounts and must be obtained from the diet. Since EFAs in yolk must originate in the maternal diet, a study was conducted to determine whether changes in maternal dietary docosahexaenoic acid (DHA, an important EFA for proper larval development) during a spawning season had an effect on the proportion of DHA in eggs of Southern flounder, *Paralichthys lethostigma*. Adult flounder were conditioned on a common diet and then switched to a high DHA diet, low DHA diet, or no change (control) after the first spawn. Spawns were produced weekly and DHA content of the eggs was measured by gas chromatography.



Females fed a high DHA diet produced eggs with a significantly higher proportion of DHA after 3 weeks on the experimental diet. DHA in eggs from females fed a low DHA diet decreased for 5 weeks, then increased, suggesting that those females first used dietary DHA to make yolk then shifted to DHA stored in liver or white muscle.

Recent publications from Team Fuiman:

- Burns, C.M. 2017. Fatty Acid Composition of the Maternal Diet Affects Egg and Larval Quality of Southern Flounder, *Paralichthys lethostigma*. Master's thesis, The Univ. of Texas, Austin. 61 pp.
- Faulk, C.K., E.W. Oberg, K.L. Thompson, and L.A. Fuiman. 2018. Optimal culture temperature for larval and juvenile pigfish, *Orthopristis chrysoptera* L. Journal of the World Aquaculture Society. (doi: 10.1111/jwas.12501).
- Fuiman, L.A. 2018. Egg boon fatty acids reveal effects of a climatic event on a marine food web. Ecological Monographs. (doi: 10.1002/ecm.1324).

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European Region

Larval Fish Course 2018 at the Marine Station of the Muséum National d'Histoire Naturelle (MNHN)

For the first time we held a European based Larval Fish Course at the marine station of the Muséum national d'Histoire naturelle in Concarneau, France from 17th-28th September. It was a small but very international group with seven participants from Norway, Germany, Saudi Arabia, Singapore and the US. The course included lectures on the following topics "What do larvae feed on, and how do they feed, match-mismatch theory", "Physical processes, environmental factors", "Age and growth", "Cohorts,

recruitment", "Climate change", "Sampling and preservation methods", "Fish egg identification, key identification features, relevant literature and available resources", "Computer identification keys", "genetic identification", and, of course, lectures and labs on larval fish identification. In the first week we provided pre-identified larval samples from the Eastern North Atlantic in order to train the identification on a species level. During the second week we sorted and identified parts of the huge museums larval fish collection from the Pacific. We aimed for a family level for this collection, but in many cases the participant were even able to identify to a genus or species level. Once identified, the specimen/s received a MNHN collection number. In total the larval fish collection received about 400 new collection entries! This is amazing and Fig. 1 shows some rare and/or beautiful examples. At the same we are still left with thousands of unsorted and unidentified samples that can be used in many, many future courses. So watch out, when we will announce it again! For more pictures and info visit our website: <https://sites.google.com/view/larval-fish-course/syllabus>.

The course was spearheaded by the collection curator of the MNHN Nalani Schnell and Cyril Gallut and featured by five experts in larval fish taxonomy and ecology from across the globe: Catriona Clemmensen (GEOMAR, Germany), Cindy van Damme (Wageningen Marine Research, Netherlands), Peter Konstantinidis (Oregon State University, USA), G. David Johnson (Smithsonian Institution, USA), Ai Nonaka (Smithsonian Institution, USA). ...continued next page

Europe cont.



Larval Fish Course group photos, working in the lab, and sampling during the bad weather

— Catriona Clemmesen (GEOMAR, Germany)
and Nalani Schnell (MNHN, France)

Section Business

Larval Fish Conference



Report from the 42nd Annual Larval Fish Conference

Organized by Francis Juanes (University of Victoria), Pierre Pepin (Fisheries & Oceans Canada) and John Dower (University of Victoria).

The 42nd Annual Larval Fish Conference took place in Victoria, BC from June 24-28 2018. The meeting attracted 120 participants from 22 coun-

tries of which about a third were students. There were a total of 89 talks and 31 posters spread over five themed and one contributed sessions. The Sally Richardson award for best student oral presentation went to Andrew Corso from the Virginia Institute for Marine Science for a talk dealing with "A time-series analysis of the larval fish assemblage of the Western Antarctic Peninsula". The John H.S. Blaxter Award for best student poster went to Carolin Muller from the University of Rhode Island for the poster "Growing up in a plastic ocean - the impact of microplastic uptake in juvenile seabream". The meeting began with a keynote lecture by Janet Duffy-

Anderson (NOAA, NMFS, Alaska Fisheries Science Centre, Seattle) with a talk entitled "The contribution of fish early life studies to ecosystem based fishery management". Janet is the program manager for the AKFSC's Recruitment Processes Program and is co-lead for the Ecosystems and Fisheries Oceanography Coordinated Investigation (EcoFOCI) Program. Her research elegantly links early life history ecology to fisheries recruitment dynamics and ecosystem functioning. In her talk she used various case studies to illustrate the development of indicators to be used in assessment, forecasting and

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Section Business cont. ecosystem based fisheries advice for management. As such, and because of her work on egg, larval and juvenile stages, the talk served as an excellent introduction to all the themes of the conference. The five theme sessions included: [1] There is life (and death) after metamorphosis: Recent advances in the ecology of juvenile fish: Yes, it's called the Larval Fish Conference, but the section is the Early Life History Section, which includes juvenile stages, generally through the first year of life. Talks in this theme highlighted research on juvenile fish, particularly given the current interest in the ecology of juvenile salmonids and forage fish in BC, Alaska, Washington, Oregon and elsewhere; [2] Fisheries oceanography in a changing ocean: This session included a range of topics including changing ocean climate and possible consequences for the ecology/physiology of larval fish, for match-mismatch and other phenological phenomena; [3] Predator-prey interactions and consequences to growth-survival: This session focused on research that aims to understand the interaction between larvae, their prey and predators and their consequences to changes in growth, mortality and survival; [4] Emerging threats to ELH stages and their consequences to physiological processes: This session included topics related to anthropogenic impacts, such as noise, ocean acidification or micro-plastics; and [5] Application of ichthyoplankton data to fisheries management: This session brought together researchers from all over the world to explore how ichthyoplankton data may contribute to the management of ecosystems and fisheries through the use of time series and the identification of recruitment bottlenecks.

There were also 2 pre-conference workshops. The first was a one-day larval identification workshop hosted by Alison Deary (NOAA, AK-FSC), Peter Konstantinidis (Oregon State University), and Moira Galbraith

(DFO, Institute of Ocean Sciences) and held at the University of Victoria. The 30 participants sorted through ichthyoplankton samples to give them hands-on experience in: 1) understanding the morphological characteristics used to identify early stage fishes, 2) using larval fish identification keys, and 3) curation of ichthyoplankton collections. The second workshop was a session for early career scientists organized by Marta Moyano (University of Hamburg) and Alison Deary, and led by Stu Ludsin (Ohio State University). The focus was on 'demystifying proposal writing'. The 15 participants heard tips about how to prepare an effective proposal and were given advice from an expert panel with experience writing and evaluating proposals in the US and Europe.

From the organizers' perspective, the conference was highly successful because the quality of the posters and presentations was first rate, the discussions were dynamic and the overall sense of community was strong. We were able to avoid having to deal with concurrent sessions, which gave a chance for everyone to gain a better perspective on a broad range of topics.

The 43rd Annual LFC will take place May 21-24 in Palma, Mallorca, Spain hosted by Ignacio Catalan (CSIC), Patricia Reglero (IEO) and Itziar Álvarez (IEO).

— Francis Juanes, Pierre Pepin and John Dower

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AFS Early Life History Section Business Meeting Report

Tuesday, June 26, 2018, Victoria, British Columbia, Canada

1) ELHS Secretary's Report

1.1) Membership As of September 2018, the Early Life History Section (ELHS) of the American Fisheries Society (AFS) is composed of 198 full members and 30 affiliate members. Total membership has remained relatively stable from last year, even though the proportion of full members has increased (209 full members and 20 affiliate members in 2017).

At the end of the grace period in March, the Secretary has sent personal renewal reminders to affiliate members that had not yet renewed at the time.

1.2) Elections The secretary also coordinated the election process for the President-elect and the Secretary-elect positions. 90 out of 207 full members participated to the election. Results were:

President-elect: Claire Paris was elected by acclamation Secretary-elect: Alison Deary won with 34 votes over Hannah Murphy (22 votes), Simon Geist (18 votes) and Stuart Ludsin (16 votes)

1.3) Grace Klein-MacPhee student travel grants From 2018, undergraduate students were eligible to apply to student travel grants. A total of 17 applications were received from 16 graduate students and 1 undergraduate student. Travel grants were awarded to the 14 students who were members at the time of application. Grants of \$300 (n=12) and \$500 (n=2) were awarded to North American and In-

ternational students, respectively. The total amount spent this year in travel grants was \$4,600.

— Dominique Robert

2) ELHS Treasurer Report 2017-2018

I oversaw the transactions in five accounts during 2017-2018.

There are four accounts at First Citizens bank in North Carolina. They are: General Fund, Sally Richardson Fund, Blaxter Fund, and Grace Klein-MacPhee Fund. The debits and credits to those accounts are summarized in financial reports below (Appendix 1).

The balance in the General Fund account dropped over the last year from \$18k to 12k. Expenses over the last year included LFC 2018 postcards (\$200), a new ELHS flag for Blaxter auction (\$500), the 2nd front money payment to LFC 2018 (\$3,200), a \$500 donation to the Brazilian Ichthyology Meeting for student travel, and 14 student travel grants to the LFC 2018 meeting (\$4,600). Once the LFC 2018 front monies (total = \$6,400) are returned, the General Fund balance will be \$18k which is similar to last year's balance. A portion of expenses was offset by 2017 dues payments (\$3,030) collected by parent society. The current balance in the General Fund is \$12,313.

The total monies raised through raffles at LFC 2017 covered costs of presentation awards. A total of \$570 was raised for the Blaxter fund and a total of \$506 was raised for the Sally Richardson fund. The current balance of Blaxter fund account is \$9,168 and current balance of Sally Richardson fund account is \$15,415. The Grace Klein-MacPhee fund has a current balance of \$7,325. This account is for student travel though we continue to use general funds to cover these costs. The account had no income over the last year and had a small expense (\$9) for statements.

The fifth account is our PayPal account. Thirty-one affiliate members

paid dues through PayPal over the last year for a total net income of \$450 (see income and PayPal fees below). The current balance in the PayPal account is \$2,047.

I filed Form 990-N with the IRS in June 2018 for tax year 2017. The section has to file this form to maintain non-profit status.

The ELHS accounts are in good financial standing with a total balance of \$46,000.

— Jeff Buckel

3) ELHS Newsletter Editors' Report

Stages, the ELHS newsletter, was published in June and October 2017 - 38(2 & 3), and February 2018 - 39(1).

Issue and date	#full members (affiliates)
38(2) May 28, 2017	202 (20)
38(3) Oct 19, 2017	209 (20)
39(1) Feb 23, 2018	241 (31)

There has been a steady and active supply of content from the regional representatives, and from other section members throughout the past year, and we are grateful for their efforts. We hope that this trend continues! All regional representative positions are filled. The secretary provided the representatives with a ELHS member list by regions. This made it much easier for the representatives to contact the members in their region. STAGES started the article series 'highlighting larval fish collections around the world'. We welcome contributions for this series for upcoming issues. We would like to remind everyone to encourage the use of Twitter and Facebook for communication about section activities and activities of section members: @AFS_ELHS is the Twitter account, so please follow and post to it! www.facebook.com/earlylifehistory is the Facebook page please like it and post to it!

— Audrey Geffen & Cindy van Damme

4) ELHS Time and Place Committee Report

The Committee has long sought to identify potential LFC hosts to accommodate the following idealized, 4-yr pattern of venue locations while including opportunities for both stand-alone LFCs and joint meetings with partnering societies (e.g., with AFS, JMIH). USA / North America east coast or Gulf of Mexico location USA / North America or Gulf of Mexico non-coastal location USA / North America west coast location International location (outside of North America) The location for 2019 (Palma de Mallorca, Spain) was accepted by the ExCom at LFC2017. An invite will be presented at the LFC2018. An offer for the LFC2020 (Mystic, CT, USA) was presented at the 2018 ELHS Business Meeting, vote on favorably by the majority of business meeting attendants and accepted by ExCom. The Committee has been in discussions with additional candidate hosts for the out-years that follow the above rotational scheme for LFC venues.

CONSIDERATION OF INTEREST IN JOINT MEETING WITH LARVAL BIOLOGY SYMPOSIUM. The Committee has repeatedly been in contact with past participants of the Larval Biology Symposium (LBS) about a future joint meeting of LFC and LBS, which has long been discussed by the ELHS. The LBS had meeting biennially (even years) through 2012 but has not met since. It convened (LBS XI) in August, 2017 in Hawaii (www.larvalbiology2017.org/). Simon Geist attending the LBS XI and stated the interest of the ELHS/LFC in a future joint meeting. The LBS proposed to meet as a solo gathering in 2019 (offer by Dustin Marshall, School of Biological Sciences, Monash University, Melbourne, Australia). Discussions during 2017-18 for possible ELHS hosts for such a joint LFC-LBS meeting are ongoing with Noelle Bowlin (SWFSC) and Steve Litvin (MBARI). Proposed lo-

cations for a joint meeting are La Jolla/San Diego (Bowlin) and Monterey, California (Litvin). The LBS point of contact is Steve Morgan, UC-Davis (sgmorgan@ucdavis.edu).

Lastly, the Committee wants to gratefully acknowledge and thank John Dower, Francis Juanes, Pierre Pepin and their team for hosting the LFC2018. We all appreciate your efforts!

— Chris Chambers

5) *ELHS Historian Report*

The paper archives of the ELHS are maintained at the home residence of ELHS Historian Jeff Govoni, in Straits, outside of Beaufort, NC. Relevant electronic files are either transmitted to the ELHS Webmaster for posting on the ELHS Website if appropriate, or maintained as electronic files by the Historian.

The ELHS Web Page has become an important, and easily accessible, source of historical information. Listed on this Web Page are: ELHS current and past Officers; past Annual Larval Fish Conferences; and the recipients of ELHS Awards (the Sally L. Richardson Award, the J.H.S. Blaxter Award, the E.H Ahlstrom Award, and the recently established Grace Klein-MacPhee travel grants). The ELHS Historian annually reviews this Web Page to check on the status of relevant information and updates. The ELHS Historian finds that all relevant information is up to date, and commends current Web Master Klaus Huebert for his efforts.

Contact with the ELHS Historian can be made through the following email address: JJGovoni@gmail.com.

— Jeff Govoni, *ELHS Historian*

6) *ELHS Early Career Committee (ECC)*

This year, the ECC has been busy facilitating two early career workshops, updating the online platform for the annual surveys, and collating the responses from last year's survey. Some

of our highlights from this year are:

- Online survey moved from SmartSurvey to GoogleForms
- —GoogleForms easier to edit and to transfer to the next set of Early Career chairs
- Of the 2017 survey participants, 65% were full members (up from 53% last year)
- Still uncertainty about the benefits of becoming a full member over affiliate member
- —53% of participants support a registration fee reduction to incentivize meeting attendees to become full members
- Finances was the primary reason members could not attend last year's meeting
- — 30% of participants felt the 41st LFC was too big
- ECC Workshop attendees viewed these events as great networking opportunities that are informative
- —to improve, attendees suggested making workshops longer and posting updates on multiple platforms
- At the 42nd LFC, we facilitated two early career workshops
- — 3-hour grant writing workshop entitled "Demystifying the Proposal Process" led by Stu Ludsin (Ohio State University)
- — 1-day Larval Fish Identification Workshop led by Peter Konstantinidis with additional expertise from Ali Deary, Jeff Leis, Tony Miskiewicz, and Moira Galbraith
- Mentoring a graduate student (Kelsey Swieca; Oregon State University) awarded a NSF Research Traineeship Program who is helping us with the logistics to implement our two early career events this year
- Early Career Committee will be looking for new co-chairs starting in 2019

— Alison Deary, Marta Moyano

7) *ELHS President's Report*

Our section is in a good financial situation and membership is holding steady. Relevant action items to be reported or discussed at this business meeting include:

7.1) *ELHS Executive Committee, Officers, and Regional Representatives*
The ExCom has four voting members (President, Secretary, President-elect and Secretary-elect). Other non-voting members include the Treasurer and Webmaster. Thanks to the elections held within the past year, the ExCom will remain at full capacity for the next two years. On behalf of the ELHS, I would like to thank the Secretary for once again supervising a successful online election. Overall, the relatively recent transition of the election duties from the former "Nominations and Mail Ballot Committee" to the office of Secretary has worked well.

It is worth noting that less than 45% of voting-eligible ELHS members participated in the last election. Further, the office of President-Elect has been filled by acclamation for at least the past three election cycles. The ExCom would like to thank those who have accepted nominations to run for office; win or lose, their willingness to contribute to the ELHS is appreciated. Further, the ExCom is open to suggestions for increasing the level of activity from its membership, particularly with respect to critical section activities such as the election of officers.

Our newsletter STAGES is currently supported by a full compliment of Regional Representatives. On behalf of the ELHS, I thank each one for their service (the content of STAGES over the past year has been excellent).

Jeff Govoni has served as the ELHS Historian since 2004, and with his last report he has also submitted his resignation, effective when a new Historian is named by the President. On behalf of the ELHS, the ExCom would like to thank Jeff for his many years of service to the section [note: Jeff also served as President-Elect (1996-1998)

and President (1998-2000)].

7.2) ExCom Activities Several executive actions were taken by the President in consultation with the ExCom. The ExCom voted unanimously to accept the offer by Ignacio Catalan, Patricia Reglero and Francisco Alemany to host the 43rd Annual Larval Fish Conference in Palma de Mallorca, Balearic Islands, Spain.

The ExCom revised the eligibility conditions for the Grace Klein-MacPhee student travel grants to include undergraduate students, in response to the recent trend of increased undergraduate student attendance at the LFC.

The ExCom supported a request (\$500) by ELHS member Jana del Favero to sponsor student travel to the biennial Brazilian Ichthyology Meeting, which will have a symposium on fish early life history.

The ExCom supported the costs associated with printing 'save the date' reminders (postcards, flyers) for the 2018 LFC.

The ExCom supported the purchase of the new LFC flag (designed by Lee Fuiman), which we hope will continue to be auctioned for many years to raise funds for the student Blaxter Award.

7.3 Old Business None

7.4 New Business

7.4.1 ELHS Historian. As mentioned, Jeff Govoni has submitted his resignation as ELHS Historian. In doing so, Jeff provided some information on the paper documents he currently curates, and has offered to advise the new Historian as needed, once appointed by the President.

As a reminder, according to the ELHS Bylaws, the Historian: 1. collects copies of all Section documents, newsletters, programs, publications, awards, publicity, and other items on Section activities of potential historical interest and organizes and maintains them in the Section Archives; and 2. responds to reasonable re-

quests for archived information.

Admittedly some of these duties have evolved over time, and the new Historian should work closely with the Webmaster to curate relevant Section materials.

7.4.2 Social media. Klause Huebert has served as the ELHS webmaster for the past several years, and has made a number of key improvements with regards to the quality of presentation and content. More recently, the ELHS has adopted additional social media platforms (Twitter, Facebook) that have been maintained by several different members. The President and Secretary recommend coordination among the various platforms be improved to ensure continuity and conformity of content, as well as timely updates in this time of instant access of information.

Dominique Robert has volunteered to serve as the ELHS Webmaster, and the President accepts his offer. The President thanks Dominique for his continued service to the ELHS, and also thanks Klaus for advancing the section's website considerably during his tenure. The President encourages all members to support our website and social media platforms by supplying ELHS related content.

The ExCom should seek 1-2 members to oversee the Facebook and Twitter accounts. Nominations are requested at this business meeting.

7.4.3 LFC attendance and extent of ELHS member participation.

To be discussed.

7.4.4 Benefits of Full ELHS membership.

To be discussed

7.5 Installation of new officers The outgoing President and Secretary would like to thank everyone for their support and contribution to the ELHS over the past few years. As we step down from our respective offices, we would like to welcome Pierre Pepin and Hannes Baumann as they assume the offices of President and Secretary, respectively, and newly

elected officers Claire Paris and Alison Deary as they assume the offices of President-Elect and Secretary-Elect, respectively.

— Frank Hernandez

AFS - EARLY LIFE HISTORY SECTION BUDGET (JULY 2017 - JUNE 2018)	
General Fund	\$
BALANCE (July 2017)	18,391.37
INCOME	
2017 Membership Dues from AFS	3,030.00
TOTAL INCOME	3,030.00
EXPENSES	
New Blaxter Flag	508.37
LFC 2018 Postcards	230.52
LFC 2018 front money (2nd installment; Dec. 2017)	3,243.60
Wire transfer fee (LFC 2018 front money)	25
LFC 2018 Student travel awards	4,600
Donation to Brazilian Ichthyology Meeting for ELH student travel	500
TOTAL EXPENSES	9,107.49
BALANCE & INCOME - EXPENSES	12,313.88
ENDING BALANCE FOR THE GENERAL FUND AS OF June 20, 2018	12,313.88
<hr/> Sally Richardson Fund	
Beginning Balance (July 2017)	15,509.30
INCOME	
Income (LFC 2017 Raffle)	506.00
Total Income	506.00
EXPENSES	
Student award, lfc 2017	600.00
Total Expenses	600.00
BALANCE & INCOME - EXPENSES	15,415.30
ENDING BALANCE FOR THE SALLY RICHARDSON FUND AS OF June 20, 2018	15,415.30
<hr/> Blaxter Fund	
Beginning Balance (July 2017)	8,598.10
INCOME	
Income (LFC 2017 flag auction)	570.00
Total Income	570.00
EXPENSES	
None (award check not cashed)	0.00
Total Expenses	0.00
BALANCE & INCOME - EXPENSES	9,168.10
ENDING BALANCE FOR THE BLAXTER FUND AS OF June 20, 2018	9,168.10
<hr/> Grace Klein-MacPhee Fund	
Beginning Balance (July 2017)	7,334.00
INCOME	
No income	0.00
Total Income	0.00
EXPENSES	
Paper statement fee	9.00
Total Expenses	9.00
BALANCE & INCOME - EXPENSES	7,325.00
ENDING BALANCE FOR THE KLEIN-MACPHEE FUND AS OF June 20, 2018	7,325.00
<hr/> PayPal Fund (dues payment account for affiliate members)	
Beginning Balance (July 2017)	1,608.41
INCOME	
Income (\$15 dues payment by 31 affiliate members)	465.00
Total Income	465.00
EXPENSES	
PayPal fees	26.02
Total Expenses	26.02
BALANCE & INCOME - EXPENSES	2,047.39
ENDING BALANCE FOR THE PayPal account as of June 20, 2018	2,047.39

Early Career Committee

Alison Deary and
Marta Moyano

Perspectives from the 42nd Annual LFC post-conference survey

It is that time of the year again to thank everyone for participating in this year's online survey! This was the first year that we offered a prize to one lucky survey participant, which this year was a framed line drawing of a larval macrourid from Puget Sound, to combat the steady decline in participation. The incentive strategy seems to have worked and this year, 105 participants provided feedback, which is about twice as many participants as last year. We would like to congratulate Dr. Richard Nash as our inaugural winner of the prize; he will be receiving his reward this fall.

About 58% of the survey participants attended the 42nd Annual Larval Fish Conference in Victoria, BC, Canada. Of the 42% of you unable to attend this year's meeting, money and time were cited as the primary reasons. The 42nd LFC was the first LFC for approximately 40% of the participants. Half of the survey participants were senior researchers and of the 30% that were students, over half are working towards their PhD. As the Early Career Committee, we try to broaden the audience of each professional development event to be appropriate for early career researchers on either career trajectory, although these demographics help us advise the mentors running each workshop. Word of mouth is still the primary way people are hearing about us, although ca. 21% of the participants found out about our organization using the website.

On this year's survey, more participants were not members of either AFS or ELHS. One recommendation that was discussed during the conference was a way to streamline membership at the conference. It may be as sim-

ple as designating a laptop for people to join while still at the conference or assigning a few individuals to serve as membership liaisons to collect dues. Also, we talked about giving the Section more visibility at AFS by providing regular contributions to Fisheries, for example. Let us know if you want to help here!



With this year's conference over, it is now time to start thinking about the 43rd Annual LFC, being hosted in Palma, Spain. The dates have already been set, May 21st - 24th, 2019. For next year's professional development event, the top contenders are scientific writing, grant writing, career planning, and project management. In Victoria, Dr. Stu Ludsin hosted a grant writing workshop that was well received by the participants (thank you again Stu!). The expectations of the participants were often exceeded and they enjoyed the breakout discussion session, although they would have liked more time to dissect the material.

This year was also the first year that the Early Career Committee organized a Larval Fish Identification Workshop in conjunction with the conference hosted by Dr. Peter Konstantinidis. The lab space at the University of Victoria was a perfect venue from this identification clinic and we want to



extend a huge thank you to the conference organizers for making these workshops possible. Thank you Drs. John Dower, Francis Juanes, and Pierre Pepin!

In Spain, we hope to continue our commitment to early career development with another short larval identification clinic and a professional skills workshop. We are planning on combining our next workshop with a discussion on scientific ethics. Although very much still in development, Marta and I are working with a team of new early career co-chairs to plan events that are informative and thought-provoking for our early career researchers. Our expanded ECC team now includes Kelsey Swieca, Carolin Müller, Dr. Michael Sswat, Dr. Lysel Garavelli, and Dr. Hannah Murphy. As always, thank you so much for your dedication to the ELH Section and check out our Facebook page (@earlylifehistory) and Twitter account (@AFS_ELHS) for updates from our colleagues around the world.

Reflections from a new Early Lifer

A primary objective of most scientific conferences is to facilitate active engagement between researchers. The hope is that these interactions would lead to innovative ideas, future research avenues, and new or expanded collaborations. While each of these outcomes is beneficial to all conference attendees, they may be particularly important for early career participants, like myself, who cannot yet rely on an extensive publication track record for recognition in the field. As part of a National Science Foundation Research Traineeship, I was afforded the opportunity to attend the 2018 Larval Fish Conference for the first time and pursue a professional development internship with the Early Career Committee (ECC)

...continued next page
ECC cont. under Drs. Alison Deary

and Marta Moyano. Here, I share my thoughts on the meeting from an early career perspective with a particular focus on how the (1) meeting size and (2) early career events shaped my experiences.



Networking is a considerable benefit of attending scientific meetings and the 2018 Larval Fish Conference's intimate size promoted face-to-face communication that helped me form and deepen professional relationships. In my experience, official talks were, in some sense, just advertisements for more meaningful conversations that often led to real education, practical advice (e.g., how do you excise the gut of a 2-mm fish?), and informal mentorship. While many conferences operate under the model of short talks followed by personal inquiries, the ease in identifying and locating individuals in a smaller crowd made this objective substantially more attainable. Frequent group breaks and social events were helpful in creating a space conducive to genuine and casual conversation that further built on these relationships. When speaking to my peers, it is clear that graduate training often fails to teach the networking skills necessary for competence as a practicing professional in our field. The more relaxed nature of small conferences, like the Larval Fish Conference, provide an invaluable opportunity for early career individuals to practice these 'soft skills'.

In addition to creating a favorable

atmosphere for professional relationship building, one of the most useful aspects of the 2018 Larval Fish Conference were the early career workshops. The ECC designed two workshops explicitly geared towards the needs of early career participants - Larval Fish Identification and Proposal Writing. With highly sought after content, both workshops attracted many participants and proved to be valuable for my personal research. For me, it was especially beneficial that these workshops were held prior to the start of the conference as they allowed me to meaningfully engage with my early career peers providing encouragement, excitement, and a sense of comradery for the start of the meeting.

Based on my experiences, the 2018 Larval Fish Conference was not simply an avenue for me to present my research to other larval fish aficionados, but an opportunity to build authentic research and professional relationships that are often vital for the success of early career researchers. Many thanks Drs. Alison Deary and Marta Moyano for their support and guidance through my internship process and to my conference funding sources - the National Science Foundation and the Grace Klein-MacPhee Student Travel Grant.

— Kelsey Swieca, Graduate Student
Oregon State University, Corvallis, &
Hatfield Marine Science Center,
Newport, OR

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Upcoming Events

PICES 2018 Annual Meeting in Yokohama The Annual Meeting of the North Pacific Marine Science Organization (PICES) will be held in Yokohama, Japan, from October 25 to November 4, 2018. I expect that the program will be posted on the website quite soon. The hosts are looking forward to seeing any participants from the ELHS in Yokohama. [PICES 2018](#)

The 1st Brazilian Ichthyoplankton Symposium The 1st Brazilian Ichthyoplankton Symposium, first announced in the June 2018 issue of STAGES, now has English pages on the website: <http://www.ebi2019.com.br/>. Please keep checking the themes and scientific program. If you have any question or want to participate, please contact the organizer: Dr. Jana M. del Favero (delfaverojana@gmail.com).

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Stages is published in February, June, and October each year. It is assembled by the Newsletter Editor with contributions from several Regional Representatives and other individuals. Please send any articles, announcements, or information of interest to Early Life History Section members or affiliates to your local Regional Representative or to the Editor

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Editor's Ramblings



This issue is packed with changes, as the section officers cycle into their new roles and a new cohort steps into place. Pierre has sent out his thanks, on behalf of all the ELHS, to members who have been quietly (or not so quietly) working away to keep the section running, and in good order. It's good to be reminded of all the activity going on behind the scenes. We also say "Goodbye, and thanks for all the fish!" to several in the Newsletter team: Hubert Keckeis will be handing over the reins of the regional representative for the European Region - and Catriona Clemmesen has agreed to have her name put forward for election as the replacement. Hopefully soon we will be saying "Welcome back, Catriona!". Todd Clardy has also handed over responsibility for the Twitter account, which we'll all be contributing to for the time being. Thank you, Hubert and Todd, for your help in promoting ELHS activities and sharing news from your regions and the world. And in case you are wondering about your eyesight, or the display on your screen - there's nothing wrong at your end. Yes, the format of Stages is another thing changing in this issue. We are exploring new production packages,

but things should settle down in the next few issues. You can be sure that there will always be the iconic banner at the top of the newsletter - and that there will be plenty of news about early life history research going on around the world.

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