SCHEDULE

Sunday, July 26
4:30 – 7:00   Registration   Wang Theater Lobby
4:30 – 7:00   Welcome Reception (hors d’oeuvres, beverages)   Wang Theater Lobby
7:00         Dinner   On Own

Monday, July 27
8:00 – 9:00   Breakfast and Registration opens   Wang Theater Lobby

Session 1: Ecological and Evolutionary Dynamics. CHAIR: Windsor E. Aguirre
Department of Biological Sciences, De Paul University, Chicago, Illinois, USA

9:00 – 9:45   Kevin Laland. What use is an extended evolutionary synthesis? Center for Biological Diversity, School of Biology, University of St Andrews, UK

9:45 – 10:00   Windsor E. Aguirre, Katie Carlson, Seth Contreras, and Lissette Arrellano. Evolutionary diversification of body form and the axial skeleton in the Gasterosteidae and their closest relatives. Department of Biological Sciences, De Paul University, Chicago, Illinois, USA

10:00- 10:15   Thomas E. Reimchen¹, Dawn Steeves¹, and Carolyn A. Bergstrom². Sexual dimorphism in stickleback. ¹Department of Biology, University of Victoria, Victoria, British Columbia, Canada and ²Department of Biology, University of Alaska Southeast, Juneau, Alaska, USA

10:15 – 10:30   Nadezhda V. Terekhanova¹,²*, Georgii A. Bazykin¹,², Alexey S. Kondrashov¹,³, and Nikolai S. Muguè⁵⁵. Evolutionary dynamics of young freshwater populations of Three-spine Stickleback (Gasterosteus aculeatus) from the White Sea basin. ¹Department of Bioinformatics and Bioengineering, M. V. Lomonosov Moscow State University, Moscow, Russia, ²Sector for Molecular Evolution, Institute for Information Transmission Problems of the RAS (Kharkevich Institute), Moscow, Russia, ³Department of Ecology and Evolutionary Biology and Life Sciences Institute, University of Michigan, Ann Arbor, Michigan, USA, ⁴N. K. Koltsov Institute of Developmental Biology RAS, Moscow, Russia and ⁵Laboratory of Molecular genetics, Russian Institute of Fisheries and Oceanology, Russian Federal Research Institute of Fisheries and Oceanography, Moscow, Russia

10:30 – 11:00   Coffee Break   Wang Theater Lobby
1Department of Biosciences, University of Helsinki, Helsinki, Finland, 
2departments of Mathematics and of Ecology and Evolution, Uppsala University, Uppsala, Sweden and 
3ARONIA Coastal Zone Research Team, Åbo Akademi University and Novia University of Applied Sciences, Turku, Finland

Ben A. Wasserman, Sara Kurland, Travis M. Apgar, Antoine Paccard, Rana W. El-Sabaawi, Rowan D. H. Barrett, Andrew P. Hendry, and Eric P. Palkovacs. Intermittent estuary environments promote diverse armor genotypes and phenotypes in Threespine Stickleback (Gasterosteus aculeatus) on California’s central coast.  
1Department of Ecology and Evolutionary Biology, The University of California, Santa Cruz, California, USA, 
2Redpath Museum & Department of Biology, McGill University, Montreal, Ontario, Quebec, Canada and 
3Department of Biology, University of Victoria, Victoria, British Columbia, Canada

Dmitry L. Lajus. Threespine Stickleback in the White Sea: patterns and mechanism of long-term population dynamics. Department of Ichthyology and Hydrobiology, Saint-Petersburg State University, St. Petersburg, Russia

1Department of Biology, University of Bergen, Bergen, Norway, 
2University of Oslo, Department of Biosciences, Centre for Ecological and Evolutionary Synthesis (CEES), Oslo, 
3Hedmark University College, Faculty of Applied Ecology and Agricultural Science, Evenstad, Norway and 
4School of Biology, University of St. Andrews, St. Andrews, UK

Abbey Thompson, Yingguang Frank Chan, Terence D. Capellini, and David M. Kingsley. Pitx1 and the genomic basis of repeated pelvic reduction.  
1Department of Genetics, Stanford University School of Medicine, Stanford, California, USA, 
2Max Planck Institute, Tübingen, Germany, 
3Department of Human Evolutionary Biology, Harvard University, Cambridge, Massachusetts, USA and 
4Department of Developmental Biology, Stanford University School of Medicine and Howard Hughes Medical Institute, Stanford, California USA

Paul J. Seear and Iain Barber. Differential expression of spiggin genes in nesting male Threespine Stickleback from diverse ecosystems. Department of Biology, College of Medicine, Biological Sciences and Psychology, University of Leicester, Leicester, UK

Lunch On Own
Session 2: Contemporary Evolution. CHAIR: Jennifer L. Rollins, Department of Ecology and Evolution, Stony Brook University, Stony Brook, New York, USA

1:45 – 2:30 William A. Cresko. DONALD W. HAGEN ADDRESS: The genomic architecture of rapid Threespine Stickleback evolution in Alaska. Institute of Ecology and Evolution, University of Oregon, Eugene, Oregon, USA

2:30 – 2:45 Emily A. Lescak¹², Susan Bassham³, Julian Catchen⁴, Mary L. Sherbick², Ofer Gelmond², Frank A. von Hippel², and William A. Cresko³. Evolution of stickleback in 50 years on earthquake-uplifted islands. ¹School of Fisheries and Ocean Sciences, University of Alaska Fairbanks, Fairbanks, Alaska, USA, ²Department of Biological Sciences, University of Alaska Anchorage, Anchorage, Alaska, USA, ³Institute of Ecology and Evolution, University of Oregon, Eugene, Oregon, USA and ⁴Department of Animal Biology, University of Illinois, Urbana-Champaign, Illinois, USA

2:45 – 3:00 David C. Heins¹, Helen Knoper¹, Robert Massengill², and John A. Baker³. Shifts in life-history traits of Threespine Stickleback following the introduction of invasive, predatory northern pike. ¹Department of Ecology and Evolutionary Biology, Tulane University, New Orleans, Louisiana, USA, ²Alaska Department of Fish and Game, Soldotna, Alaska, USA and ³Department of Biology, Clark University, Worcester, Massachusetts, USA

3:00 – 3:15 Jeffrey N. Divino¹*, Michelle Y. Monette², Stephen D. McCormick³, and Eric T. Schultz¹. Characterizing rapid evolution of salinity tolerance in a recently introduced lake population of Threespine Stickleback. ¹Department of Ecology and Evolutionary Biology, University of Connecticut, Storrs, Connecticut, USA, ²Department of Biological and Environmental Sciences, Western Connecticut State University, Danbury, Connecticut, USA and ³US Geological Survey, Conte Anadromous Fish Research Center, Turners Falls, Massachusetts, USA

3:15 – 3:45 Coffee Break

3:45 – 4:00 Anna B. Mazzarella¹*, Kjetil L. Voje¹, Truls H. Hanson¹, Annette Taugbøl¹, and Barbara Fischer¹². Strong and parallel salinity-induced phenotypic plasticity in a single generation of Threespine Stickleback. ¹Department of Biosciences, Centre for Ecological and Evolutionary Synthesis, University of Oslo, Oslo, Norway and ²Department of Theoretical Biology, University of Vienna, Vienna, Austria

4:00 – 4:15 Dieta Hanson*, Rowan Barrett, and Andrew Hendry. World-wide parallelism in lake and stream stickleback. Department of Biology and Redpath Museum, McGill University, Montreal, Quebec, Canada
4:15 – 4:30 Andrew P. Hendry, Gregor Rolshausen, Shahin Muttalib, Renaud Kaeuffer, Krista B. Oke, Dieta Hanson, Marius Roesti, Daniel Berner, Walter Salzburger, and Catherine L. Peichel. **Does maladaptive gene flow increase directional selection on the phenotype or genotype?** Redpath Museum and Department of Biology, McGill University, Montreal, Quebec, Canada, Zoological Institute, University of Basel, Switzerland and Division of Human Biology, Fred Hutchinson Cancer Research Center, Seattle, Washington.

4:30 – 4:45 Rana W. El-Sabaawi, Daniel D. Durston, Misha L. Warbanski, Rachel Hovel, Seth Rudman, and Blake Matthews. **Characterizing the ecological costs and effects of stickleback armor evolution: a stoichiometric approach.** Department of Biology, University of Victoria, Victoria, BC, Canada, School of Aquatic & Fishery Sciences, University of Washington, Seattle, WA, USA, Department of Zoology, University of British Columbia, Vancouver, BC, Canada and EAWAG Swiss Federal Institute of Freshwater Science and Technology, Dübendorf, Switzerland.

4:45 – 6:45 **Poster Session** (hors d’oeuvres, beverages) Wang Theater Lobby

6:30 – 7:30 Dinner On Own

7:30 – Free On Own

**Tuesday, July 28**

8:00 – 9:00 Breakfast Wang Theater Lobby

**Session 3: Behavior. CHAIR: Martin Kalbe, Department of Evolutionary Ecology, Max Planck Institute for Evolutionary Biology, Plön, Germany**

9:00 – 9:45 Nadia Aubin-Horth, Carole Di-Poi, Jennyfer Lacasse, Lucie Grecias, and Chloé Berger. Using integrative biology to decipher the evolution of behavior in Threespine Stickleback. Département de Biologie & Institut de Biologie Intégrative et des systèmes, Université Laval, Québec, QC, Canada.

9:45 – 10:00 Syed Abbas Bukhari, Miles Bensky, Molly Kent, and Alison M. Bel. The temporal dynamics of neurogenomic response to a territorial challenge in male Threespine Stickleback. Illinois Informatics Institute (I3), Carl R. Woese Institute for Genomic Biology and Department of Animal Biology and School of Integrative Biology, University of Illinois, Urbana, Illinois, USA.

10:00 – 10:15 Tomoyuki Kokita, Asano Ishikawa, Jun Kitano, and Seiichi Mori. Adaptive population divergence of male androgen production in relation to mating system and its genetic basis in Threespine Stickleback. Department of Marine Bioscience, Fukui Prefectural University, Obama, Fukui, Japan, Division of Ecological Genetics, National Institute of Genetics, Mishima, Shizuoka, Japan.
10:15 – 10:30 Daniel I. Bolnick\textsuperscript{1,2}, Lisa Snowberg\textsuperscript{2}, Chad Brock\textsuperscript{2}, and Thor Veen\textsuperscript{2}. **Deep matters: micro-clines in male traits across a surprisingly narrow gradient of nest depths.** \textsuperscript{1}Howard Hughes Medical Institute, and \textsuperscript{2}Department of Integrative Biology, University of Texas at Austin, Austin, Texas, USA

10:30 – 11:00 **Coffee Break** Wang Theater Lobby

11:00 – 11:15 Susan A. Foster, Katherine Shaw, and John A. Baker. **Regional differentiation of behavioral phenotypes in the adaptive radiation of the threespine stickleback in the northeastern Pacific region of North America.** \textsuperscript{2}Department of Biology, Clark University, Worcester Massachusetts, USA

11:15 – 11:30 Matthew A. Wund\textsuperscript{1}, Paul Mitchell\textsuperscript{1}, and Alison M. Bell\textsuperscript{2}. **Divergence in learned predator recognition in Threespine Stickleback fish (Gasterosteus aculeatus).** \textsuperscript{1}Department of Biology, The College of New Jersey, Ewing, New Jersey, USA and \textsuperscript{2}Department of Animal Biology, University of Illinois at Urbana-Champaign, Urbana, Illinois, USA

11:30 – 11:45 Justin L. Golub\textsuperscript{1,2} and Susan A. Foster\textsuperscript{2}. **Decay of learned response to predator cues in juvenile Threespine Stickleback.** \textsuperscript{1}Massachusetts College of Liberal Arts, North Adams, MA, USA and \textsuperscript{2}Clark University, Worcester, MA, USA

11:45 – 12:00 Laura R. Stein and Alison M. Bell. **Dads matter.** Department of Animal Biology, University of Illinois, Urbana-Champaign, Urbana, Illinois, USA

12:00 – 12:15 Ben B. Chapman and Gunnar De Winter. **The ecology of animal personality.** Ecology and Evolution Group, University of Nottingham, Nottingham, UK

12:15 – 1:45 **Lunch** On Own

**Session 4A: Host-Parasite Interactions.** CHAIR: David C. Heins, Department of Ecology and Evolutionary Biology, Tulane University, New Orleans, Louisiana, USA

1:45 – 2:00 Stephan Grumbauer\textsuperscript{*} and Iain Barber. **Towards an understanding of the genetic basis of behavior manipulation in the Threespine Stickleback-Schistocephalus host parasite system.** Department of Biology, University of Leicester, Leicester, UK

2:00 – 2:15 Iain Barber and Lucy Sullivan. **Parasites, learning and memory in Threespine Stickleback (Gasterosteus aculeatus).** Department of Biology, College of Medicine, Biological Sciences and Psychology, University of Leicester, UK
2:15 – 2:30  Nina Hafer* and Manfred Milinski. **Potential host manipulation by S. solidus in Threespine Stickleback – multiple infections reveal the mechanism.**
Department of Evolutionary Ecology, Max Planck Institute for Evolutionary Biology, Plön, Germany

2:30 – 2:45  Shaun Robertson*, Janette E. Bradley, and Andrew D. C. MacColl. **Understanding the immune response of Threespine Stickleback to natural parasite populations.** School of Life Sciences, University of Nottingham, Nottingham, UK

2:45 – 3:00  Tina Henrich, Marc Ritter, and Martin Kalbe. **Using Threespine Stickleback and their specific tapeworm Schistocephalus solidus to study parasite virulence.** Max Planck Institute for Evolutionary Biology, Department of Evolutionary Ecology, Ploen, Germany

3:00 – 3:15  Noémie I. Erin¹, Tina Henrich¹, Luke Phelps¹, Irene E. Samonte¹, Per J. Jakobsen², and Martin Kalbe¹. **Parasites as habitat-specific selection factors in a natural contact zone of Threespine Stickleback ecotypes.** Max Planck Institute for Evolutionary Biology, Department of Evolutionary Ecology, Ploen, Germany and Department of Biology, University of Bergen, Norway

3:15 – 3:45  **Coffee Break**

Session 4B: Developmental Genetics. Alison M. Bell, Department of Animal Biology, University of Illinois at Urbana-Champaign, Urbana, Illinois, USA

3:45 – 4:00  Priscilla A. Erickson*, Phillip A. Cleves, Jiyeon Baek, and Craig T. Miller. **Functional genetic analysis of stickleback craniofacial evolution.** Department of Molecular and Cell Biology, University of California-Berkeley, Berkeley, California, USA

4:00 – 4:15  Rhea R. Richardson¹*, Emily Hare², Kathleen T. Xie³, Yingguang Frank Chan²,⁴, Felicity C. Jones²,⁴, and David M. Kingsley²,⁵. **The role of myosin copy number variation in adaptive evolution of Threespine Stickleback.** Department of Genetics, Department of Developmental Biology, Department of Biochemistry, Stanford University School of Medicine, Stanford, California; Current address: Max Planck Institute, Tuebingen Germany, and Howard Hughes Medical Institute, Stanford, California

4:15 – 4:30  Nicholas A. Ellis*, Andrew M. Glazer, Nikunj N. Donde, Phillip A. Cleves, Rachel M. Agoglia, and Craig T. Miller. **Distinct developmental and genetic mechanisms underlie convergently evolved tooth gain in Threespine Stickleback.** Department of Molecular and Cell Biology, University of California-Berkeley, Berkeley, CA, USA
4:30 – 5:30

David M. Kingsley. Stony Brook Provost Lecture: **Fishing for the secrets of stickleback and human evolution.** Department of Developmental Biology, Stanford University School of Medicine and Howard Hughes Medical Institute, Stanford, California, USA

**Workshop: Teaching with the Threespine Stickleback**

Wang Theater

5:30 – 6:00

Laura Bonetta. Short Film: “**The Making of the Fittest: Evolving Switches, Evolving Bodies.**” Howard Hughes Medical Institute, Chevy Chase, Maryland, USA

6:00 – 6:30

Peter J. Park. **Demonstration: Stickleback evolution virtual lab.** Department and Chemistry, Nyack College, Nyack, NY, USA

6:30 – 6:45

Laura Bonetta¹, and Peter J. Park². **Questions and Answers about HHMI Stickleback Teaching Resources.** ¹Howard Hughes Medical Institute, Chevy Chase, Maryland, USA, and ²Department and Chemistry, Nyack College, Nyack, NY, USA

7:00 - 11:00

**Howard Hughes Medical Institute Reception**

John Marburger Room

(buffet dinner, beverages)

Wang Theater Lobby

**Wednesday, July 29**

8:00 – 9:00

**Breakfast**

Wang Theater

Session 5: Speciation and Sexual Selection. CHAIR, Susan A. Foster, Department of Biology, Clark University, Worcester, Massachusetts, USA.

9:00 – 9:45

Theo C. M. Bakker. PIETER SEVENSTER ADDRESS: **Pre- and postcopulatory sexual selection in threespine stickleback.** Institute for Evolutionary Biology and Ecology, University of Bonn, Bonn, Germany

9:45 – 10:00

Robin M. Tinghitella¹, Chelsea Stehle², and Janette W. Boughman³. **Females sample more males at high densities, but ultimately obtain less attractive mates.** ¹Department of Biological Sciences, University of Denver, Denver, Colorado, USA, ²Department of Biology, University of Nebraska, Lincoln, Nebraska, USA and ³Department of Zoology and BEACON Center for the Study of Evolution in Action, Michigan State University, East Lansing, Michigan, USA

10:00- 10:15

Kenyon Mobley, Sophie Bodenstein, Joshka Kaufmann, Verena Tams, Benjamin Weigel, and Manfred Milinski. **The effect of parasite prevalence on sexual**
selection in Threespine Stickleback. Max Planck Institute for Evolutionary Biology, Department of Evolutionary Ecology, Plön, Germany

10:15 – 10:30

Anna Barmintseva¹, Lubov Mugue², and Nikolai Mugue¹,³. Assessment of assortative mating between anadromous and young resident Threespine Stickleback populations. ¹Laboratory of Molecular Genetics, Russian Federal Research Institute of Fisheries and Oceanography (VNIRO), Moscow, Russia, ²White Sea Biological Station, M. V. Lomonosov Moscow State University, Moscow, Russia, ³N.K. Koltzov Institute of Developmental Biology Russian Academy of Sciences, Moscow, Russia

10:30 – 11:00

Coffee Break

Wang Theater Lobby

11:00 – 11:15

Jason Keagy¹,², Hans A. Hofmann²,³,⁴, and Janette W. Boughman¹,². Transcriptomics of female mate discrimination in recently diverged species of Threespine Stickleback. ¹Department of Integrative Biology, Michigan State University, East Lansing, Michigan, USA, ²BEACON Center for the Study of Evolution in Action, ³Department of Integrative Biology, The University of Texas at Austin, Austin, TX USA and ⁴Center for Computational Biology and Bioinformatics, The University of Texas at Austin, Austin, TX USA

11:15 – 11:30

Alycia C. R. Lackey and Janette W. Boughman. Evolving reproductive isolation along the speciation continuum in sticklebacks. Department of Integrative Biology, Michigan State University, East Lansing, Michigan, USA

11:30 – 11:45

Mark Ravinet, Kohta Yoshida, and Jun Kitano. So we meet again: genomic divergence after secondary contact following a period of long geographical isolation. Division of Ecological Genetics, National Institute of Genetics, Mishima, Shizuoka, Japan

11:45 – 12:00

Dario Moser*, Anja Frey, and Daniel Berner. Local adaptation in Central European lake and stream Threespine Stickleback revealed by a long term field transplant experiment. Zoology, University of Basel, Basel, Switzerland

12:15 – 12:30

David A. Marques¹,²*, Laurent Excoffier¹,³, and Ole Seehausen¹,². Genome divergence during early stage speciation with gene flow. ¹Institute of Ecology & Evolution, University of Berne, Switzerland, ²Eawag, Swiss Federal Institute of Aquatic Science and Technology, Kastanienbaum, Switzerland and ³Swiss Institute of Bioinformatics, University of Berne, Switzerland

12:30 – 12:45

Kohta Yoshida¹, Asano Ishikawa¹, Takashi Makino², and Jun Kitano¹. A rapidly evolving heterochromatin-binding protein and hybrid male sterility in the Japanese Threespine Stickleback species pair. ¹Division of Ecological Genetics, Department of Population Genetics, National Institute of Genetics, Mishima, Shizuoka, Japan and ²Department of Ecology and Evolutionary Biology, Graduate School of Life Sciences, Tohoku University, Sendai, Miyagi, Japan
Career Mentoring Session

12:45 – 2:15  Career mentoring lunch session for graduate students and postdocs. Matthew A. Wund, Windsor E. Aguirre, Andrew P. Hendry, Ioanna Katsiadaki, Juha Merilä, Catherine L. Peichel. (Pizza will be served.)

12:45 –  On Own

Thursday, July 30
8:30 – 10:00  Breakfast  Wang Theater Lobby

Session 6: Ecotoxicology. CHAIR: Frank A. von Hippel, Department of Biological Sciences, University of Alaska Anchorage, Anchorage, Alaska, USA

10:00 – 10:15  Ioanna Katsiadaki1, Marion Sebire1, Philipp Antczak2, Tim Williams3, Haruna Watanabe1,4, and Francesco Falciani2. An update on stickleback toxicogenomic research. 1Centre for Environment, Fisheries and Aquaculture Science (Cefas), Weymouth Laboratory, Weymouth, Dorset, UK, 2Centre for Computational Biology and Modelling, Institute for Integrative Biology, University of Liverpool, Liverpool, UK, 3School of Biosciences, University of Birmingham, Birmingham, UK and 4Center for Environmental Risk Research, National Institute for Environmental Studies, Tsukuba, Japan

10:15 – 10:30  Philipp Antczak1, Marion Sebire2, Ioanna Katsiadaki2, Tim Williams3, and Francesco Falciani2. Developing adverse outcome pathways in Threespine Stickleback. 1Center for Computational Biology and Modelling, Institute for Integrative Biology, University of Liverpool, Liverpool, UK, 2Centre for Environment, Fisheries and Aquaculture Science (Cefas), Weymouth Laboratory, Weymouth, Dorset, UK, and 3School of Biosciences, University of Birmingham, Birmingham, UK

10:30 – 10:45  Philipp Antczack1, Ron van der Oost2, Timothy David Williams3, Edwin Foekema4, Erwin Roex5, Foppe Smedes5 and James Kevin Chipman3 and Francesco Falciani1. Integrated monitoring of wetlands WWTP effluent remediation using Threespine Stickleback. 1Institute for Integrative Biology, University of Liverpool, Liverpool, UK, 2Waternet, Institute for Water Cycle Management, Research and Engineering, Amsterdam, Netherlands, 3School of Biosciences, The University of Birmingham, UK, 4IMARES, Dept. Environment, Den Helder, Netherlands, and 5Deltares, Environnemental Chemistry, Utrecht, Netherlands

10:45 – 11:00  Jennifer A. Fitzgerald1, Mauricio A. Urbina1, Ioanna Katsiadaki2, Rod Wilson1, and Eduarda Santos1. Hypoxia modulates the responses to chemical exposures
in the Threespine Stickleback (*Gasterosteus aculeatus*). 1Biosciences, College of Life and Environmental Sciences, Geoffrey Pope Building, University of Exeter, Exeter, UK and 2Centre for Environment, Fisheries and Aquaculture Science (Cefas), Weymouth Laboratory, Weymouth, Dorset, UK

11:00- 11:15

Alison M. Gardell1, Danielle M. Dillon1, Lauren C. Smayda1, Frank A. von Hippel1, William A. Cresko2, John H. Postlethwait3, and C. Loren Buck1. Effects of perchlorate on temporal variation of whole-body thyroid and androgen hormone content in Threespine Stickleback. 1Department of Biological Sciences, University of Alaska Anchorage, Anchorage, Alaska, USA, 2Institute of Ecology and Evolution, University of Oregon, Eugene, Oregon, USA, and 3Institute of Neuroscience, University of Oregon, Eugene, Oregon, USA

11:15 – 11:30

Frank A. von Hippel1, Ioanna Katsiadaki2, Matthew B. Sanders3, Tamar Schwarz2, John H. Postlethwait3, Tom A. Titus3, and C. Loren Buck1. The Ninespine Stickleback as a model organism in arctic ecotoxicology. 1Department of Biological Sciences, University of Alaska Anchorage, Anchorage, Alaska, USA, 2Centre for Environment, Fisheries and Aquaculture Science (Cefas), Weymouth Laboratory, Weymouth, Dorset, UK and 3Institute of Neuroscience, University of Oregon, Eugene, Oregon, USA

11:30 – 11:45

Lunch

Session 7: Genomics. Ioanna Katsiadaki, Center for Environment, Fisheries and Aquaculture Science (Cefas), Weymouth Laboratory, Weymouth, Dorset, UK

2:00 – 2:45

Anna K. Greenwood1, Margaret G. Mills1,2, Abigail R. Wark1,2, Sophie L. Archambeault1,2, and Catherine L. Peichel1. Why fish go to school: genetic and neural basis of behavioral evolution in Threespine Stickleback. 1Divisions of Basic Sciences and Human Biology, Fred Hutchinson Cancer Research Center, Seattle, Washington, USA, 2Graduate Program in Molecular and Cellular Biology and 3Graduate Program in Neurobiology and Behavior, University of Washington, Seattle, Washington, USA.

2:45 – 3:00

Garrett A. Kingman1,*, Vahan B. Indjeian1,2,3, Felicity C. Jones1,4, and David M. Kingsley1,2. Does transposon activity contribute significantly to gain-of-function adaptations in Threespine Stickleback? 1Department of Developmental Biology, Stanford University School of Medicine, Stanford, California, 2Howard Hughes Medical Institute, Stanford, California, 3Present address: MRC Clinical Sciences Centre, Faculty of Medicine, Imperial College London, London, UK and 4Present address: Miescher Lab, Max Planck Society, Tubingen, Germany

3:00 – 3:15

Asano Ishikawa1, Makoto Kusakabe2, Kohta Yoshida1, Takashi Makino3, Atsushi Toyoda4, Asao Fujiyama4, and Jun Kitano1. Genome-wide expression QTL (eQTL)
analysis reveals trans-acting eQTL hotspots underlying transcriptome divergence between Threespine Stickleback ecotypes. 1Division of Ecological Genetics, National Institute of Genetics, Shizuoka, Japan, 2Atmosphere and Ocean Research Institute, University of Tokyo, Chiba, Japan, 3Division of Ecology and Evolutionary Biology, Graduate School of Life Sciences, Tohoku University, Miyagi, Japan and 4Comparative Genomics Laboratory, National Institute of Genetics, Shizuoka, Japan

3:15 – 3:45  Coffee Break  Wang Theater Lobby

3:45 – 4:00  Michael A. White1, James R. Urton1, Shaugnessy R. McCann1, Jane Grimwood2, Jeremy Schmutz2, Richard M. Myers2, David M. Kingsley3, and Catherine L. Peichel1. Sequencing the Threespine Stickleback Y chromosome: a vertebrate model system for sex chromosome evolution. 1Fred Hutchinson Cancer Research Center, Seattle, Washington, USA, 2HudsonAlpha Institute for Biotechnology, Huntsville, Alabama, USA and 4Department of Developmental Biology, Stanford University School of Medicine and Howard Hughes Medical Institute, Stanford, California USA

4:00 – 4:15  Emily E. Killingbeck1, Damien B. Wilburn1, Catherine L. Peichel2, and Willie J. Swanson1. Fishing for sexy stickleback genes by high-throughput proteomic analysis. 1Department of Genome Sciences, University of Washington, Seattle, Washington, USA and 2Divisions of Basic Sciences and Human Biology, Fred Hutchinson Cancer Research Center, Seattle, Washington, USA

4:15 – 4:30  Nikolai Mugue1,2 and Nadezhda Terekhanova3. Formation of resident Threespine Stickleback populations – fine resolution mapping of SNPs under selection. 1N.K. Koltzov Institute of Developmental Biology Russian Academy of Sciences, Moscow, Russia, 2Laboratory of Molecular Genetics, Russian Federal Research Institute of Fisheries and Oceanography (VNIRO), Moscow, Russia and 3Department of Bioinformatics and Bioengineering, M. V. Lomonosov Moscow State University, Moscow, Russia

4:30 – 4:45  Anurag Chaturvedi1,*, Gregory Maes2, Filip A.M. Volckaert1, Joost Raeymaekers1 Adaptive variation in two closely related stickleback species along an environmental gradient. 1KU Leuven, Laboratory of Biodiversity and Evolutionary Genomics, Leuven, Belgium and 2Centre for Sustainable Tropical Fisheries and Aquaculture, James Cook University, Australia

4:45 – 5:00  Isabel S. Magalhaes1, Daniele D’Agostino2, Paul Hohenlohe2, and Andrew D. C. MacColl1. Multivariate evolution in a Threespine Stickleback adaptive radiation: pattern, process and the role of the environment. 1School of Life Sciences, University of Nottingham, University Park, Nottingham, U.K. and 2Institute for Bioinformatics and Evolutionary Studies, Department of Biological Sciences, University of Idaho, Moscow, Idaho, USA.
5:00 – 5:15 Federico C. F. Calboli, Pasi Rastas, Baocheng Guo, Takahito Shikano, and Juha Merilä. **High density SNP panels in Pungitius pungitius: promises and challenges.** 1Ecological Genetics Research Unit, Department of Biosciences, University of Helsinki, Finland, and 2Department of Zoology, University of Cambridge, Cambridge, UK

5:15 – 5:30 Baocheng Guo, Takahito Shikano, and Juha Merilä. **Phylogenomics of Pungitius sticklebacks – how many species?** Ecological Genetics Research Unit, Department of Biosciences, University of Helsinki, Helsinki, Finland

6:00 – 11:00 Closing Dinner (hors d’oeuvres, beverages, dinner) John Marburger Room Hilton Garden Inn

**Friday, July 31**

8:00 – 9:00 Breakfast Wang Theater Lobby

Session 8: Life History and Physiology. CHAIR: Jun Kitano, Division of Ecological Wang Theater

Genetics, National, Institute of Genetics, Mishima, Shizuoka, Japan

9:00 – 9:45 John A. Baker, David C. Heins, and Kendall A Lunn. ROBERT J. WOOTTON ADDRESS: The female size – offspring size relationship: what can we learn from Threespine Stickleback? 1Department of Biology, Clark University, Worcester, Massachusetts, USA and 2Department of Ecology and Evolutionary Biology, Tulane University, New Orleans, LA, USA

9:45 – 10:00 Miguel L. Reyes and John A. Baker. Variation in early-life compensatory growth and its impacts on subsequent growth and aerobic capacity in threespine stickleback (**Gasterosteus aculeatus**). Department of Biology, Clark University, Worcester, MA, USA

10:00 – 10:15 Yi Ta Shao, Feng-Yu Wang, Wen-Chun Fu, Hong Young Yan, Kazuhiko Anraku, I-Shiung Chen, and Bertil Borg. Tests make the Threespine Stickleback see red. 1Department of Zoology, Stockholm University, Stockholm, Sweden, 2Sensory Physiology Laboratory, Marine Research Station, Academia Sinica, I-lain, Taiwan, 3Institute of Marine Biology, National Taiwan Ocean University, Keelung, Taiwan, 4Taiwan Ocean Research Institute, National Applied Research Laboratories, Kaohsiung, Taiwan, 5Hanse-Wissenschaftskolleg Institute for Advanced Study, Delmenhorst, Germany and 6Faculty of Fisheries, Kagoshima University, Kagoshima, Japan

10:15 – 10:30 Chrysoula Roufidou, Ian Mayer, Yi Ta Shao, Arshi Mustafa, Monika Schmitz, and Bertil Borg. Overripening is associated with changes in reproductive hormones and ovarian fluid properties in the Threespine Stickleback, **Gasterosteus aculeatus**. 1Department of Zoology, Stockholm University, Stockholm, Sweden, 2Faculty of Veterinary Medicine and Biosciences, Norwegian University of Life Sciences, Oslo, Norway, 3Institute of Marine Biology, National Taiwan Ocean University, Keelung, Taiwan and 4Department of Organismal
10:30 – 11:00  **Coffee Break**  
Wang Theater Lobby

11:00 – 11:15  **Makoto Kusakabe $$^1$$, Asano Ishikawa $$^2$$, Kohta Yoshida $$^2$$, and Jun Kitano $$^2$$.**  
**Identification of genes that ensure the physiological isolation between anadromous and stream resident ecotypes.**  
$$^1$$Atmosphere and Ocean Research Institute, The University of Tokyo, Chiba, Japan and $$^2$$Division of Ecological Genetics, National Institute of Genetics, Shizuoka, Japan

11:15 – 11:30  **Mehedi Hasan $$^1$$, Jacquelin De Faveri $$^1$$, Satu Kuure $$^2$$, Sanna Lehtonen $$^3$$, Surjya Dash $$^3$$, and Scott McCairns $$^1$$.**  
**Local adaption and ecological genetics of osmoregulatory physiology in Threespine Stickleback (Gasterosteus aculeatus).**  
$$^1$$Department of Biosciences, University of Helsinki, Helsinki, Finland, $$^2$$Institute of Biotechnology, University of Helsinki, Helsinki, Finland and $$^3$$Department of Pathology, University of Helsinki, Helsinki, Finland

11:30 – 11:45  **Asano Ishikawa and Jun Kitano.**  
**Does a DHA synthesis gene play a key role in stickleback freshwater colonization?**  
Division of Ecological Genetics, National Institute of Genetics, Mishima, Shizuoka, Japan

11:45 – 11:45  **Departures**  
Wang Center