

**Third Global Invertebrate Genomics Alliance Research  
Conference and Workshop (GIGA III)**

# **PROGRAM**



**October 19-21, 2018**

**Curaçao**

# Welcome to GIGA III

Sponsored by:



The organizing committee welcomes all of the enthusiastic attendees to the stunningly beautiful island of **Curaçao** for **GIGA III**. This is the third official conference for the Global Invertebrate Genomics Alliance, informally known as GIGA. Following our first meeting at Nova Southeastern University in Dania Beach, and our second meeting at Ludwig-Maximilians-Universität München, we are witnessing increasing interest in and growth of our group and its collective research. Thank you for attending and helping to focus on the latest achievements.

GIGA I laid the ground work, defining the purpose for gathering “a grassroots community of scientists”. GIGA II reinforced the GIGA goals outlined in the first white paper, published in the *Journal of Heredity*, and also expanded the scope of GIGA to fully consider transcriptomes, open access data repositories, and the logistics of sample collecting and permitting. These were presented in a second white paper. At GIGA III, we continue along this track, as the primary mission remains the same – to promote genomic studies of invertebrate animals. In this context, special symposia on conservation genomics, phylogenomics, and existing and emerging genomic technologies have been organized, attracting many interesting talks. To highlight the broad scope of invertebrate genomics, we have also had the good fortune to bring in three highly respected keynote speakers (Federico Brown, Joie Cannon, and Mónica Medina) to discuss the field from their own unique research perspectives and experiences.

In addition, we have now hardwired the original charge by providing limited yet intensive practical bioinformatics workshops, which begin on day two. For this educational component, we have assembled a highly-talented group of instructors who have volunteered their time, energy, and skills to train and assist others in conducting genomic studies. This training mission has been provided generous student and post-doc travel funding through the US National Science Foundation, IGNITE, the American Genetics Association, and the Research Coordination Network EukHiTS. We are indebted to these organizations and our industry sponsors, shown above. We hope everyone enjoys GIGA III and finds this a productive conference. A program overview, a detailed program, an index of presenters, and a ballot to vote for the best student contribution are included in this program. To see the abstracts for talks and posters, go to

[https://gigaiii.weebly.com/uploads/7/4/8/7/74870527/giga\\_iii\\_abstracts\\_5\\_october\\_2018.pdf](https://gigaiii.weebly.com/uploads/7/4/8/7/74870527/giga_iii_abstracts_5_october_2018.pdf)

When posting about GIGA III on social media, please use hashtag #giga3.

Sincerely,

The Organizing Committee (in alphabetical order)

Agostinho Antunes – University of Porto

Iliana Baums – Pennsylvania State University

Holly Bik – University of California Riverside

Heather Bracken-Grissom – Florida International University

Tim Collins – Florida International University

Michael Eitel – Ludwig-Maximilians-Universität München

Jean-François Flot – Université Libre de Bruxelles

Fabrizio Ghiselli – Università di Bologna

Gonzalo Giribet – Harvard University

Lisa Johnson – University of California Davis

Bishoy Kamel – University of New Mexico

Sheila Kitchen – California Institute of Technology

Kevin Kocot – University of Alabama

Joe Lopez – Nova Southeastern University

Adelaide Rhodes – University of Vermont

Joseph Sevigny – University of New Hampshire

Devin Thomas – University of New Hampshire

Kelley Thomas – University of New Hampshire

Gert Wörheide – Ludwig-Maximilians-Universität München

**GIGA III, Curaçao Hilton  
Session Overview**

**October 19<sup>th</sup>, 2018, Willemstad Room**

8:30- 8:45 AM	<b>Welcome to GIGA III: Jose V. Lopez</b>
8:45 - 11:00 AM	<b>Existing and Emerging Genomic Technologies</b>
11:00 AM - 4:00 PM	<b>Phylogenomics I &amp; II</b>
4:00– 6:00 PM	<b>Conservation Genomics I</b>
6:00 - 7:00 PM	<b>Keynote Speaker: Mónica Medina</b>

**October 20<sup>th</sup>, 2018, Concurrent Sessions**

	<b>Blenchi Room</b>	<b>Willemstad Room</b>
8:30 -11:00 AM	<b>Command Line Workshop</b>	<b>Conservation Genomics II</b>
11:00 - 12:30 PM	<b>Annotation/Assembly</b>	<b>Contributed Talks</b>
1:30 – 4:00 PM	<b>Annotation/Assembly cont.</b>	<b>Contributed Talks</b>
4:00 – 6:00 PM	<b>Annotation/Assembly cont.</b>	<b>Contributed Talks</b>
6:00- 7:00 PM		<b>Keynote: Federico Brown</b>
	<b>CARMABI Lab</b>	
7:30 – 9:00 PM	<b>POSTER SESSION</b>	

**October 21<sup>st</sup>, 2018, Concurrent Sessions**

	<b>Blenchi Room</b>	<b>Willemstad Room</b>
8:30 -11:00 AM	<b>Annotation/Assembly cont.</b>	<b>Contributed Talks</b>
11:00 - 12:30 PM	<b>QIIME 2 Workshop</b>	<b>Contributed Talks</b>
1:30 – 4:00 PM	<b>QIIME 2 Workshop cont.</b>	<b>Contributed Talks</b>
4:00 – 5:00 PM	<b>QIIME 2 Workshop cont.</b>	<b>Contributed Talks</b>
5:00- 6:00 PM		<b>Keynote: Johanna Cannon</b>
6:00- 7:00 PM		<b>GIGA Society Meeting</b>

**GIGA III, Curaçao Hilton  
Detailed Schedule**

**October 18<sup>th</sup>, 2018, Evening**

5:00 PM to 8:00 PM	<b>Registration</b> , Curaçao Hilton Lobby
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**October 19<sup>th</sup>, 2018, Early Morning**

7:00 AM to 8:30 AM	<b>Registration</b> , Curaçao Hilton Lobby
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**October 19<sup>th</sup>, 2018, Willemstad Room, Morning**

8:30 AM to 8:45 AM	Welcome to GIGA III: Jose V. Lopez
	<b>Existing and Emerging Genomic Technologies</b> Organizer: Michael Eitel
8:45 AM to 9:00 AM	Introduction: Michael Eitel*
9:00 AM to 9:30 AM	New Solutions in Invertebrate Genome Research through PacBio Long-read Sequencing  Greg Concepcion*
9:30 AM to 10:00 AM	Nanopore Sequencing  Michael Eitel*
10:00 AM to 10:15 AM	Q & A on Emerging Technologies
10:15 AM to 10:30 AM	European Training Network: IGNITE  Michael Eitel*
10:30 AM to 11:00 AM	<b>Coffee Break</b>
	<b>Phylogenomics I</b> Organizers: Gonzalo Giribet and Gert Wörheide
11:00 AM to 11:15 AM	Development of Open-Source Tools for Comparative Genomics Analyses: Discrimination of Technical vs Biological Variation in Genes and Genomes of Invertebrate Higher Taxa from NCBI GenBank  Jeffrey Robinson* & Ben Busby
11:15 AM to 11:30 AM	Improvements in Phylogenetic Models for Estimating Deep Evolutionary Divergences  Andrew J. Roger*, Huaichun Wang, Edward Susko & Bui Q. Minh
11:30 AM to 11:45 AM	Phylotranscriptomics Sheds New Light on the Sea Urchin Tree of Life

	Nicolás Mongiardino Koch*, Simon E. Coppard, Rich Mooi, & Greg Rouse
11:45 AM to 12:00 PM	Seeing the Light: Evolution of Photosymbiosis in Marine Cockles Jingchun Li*, Sarah Lemer, Gonzalo Giribet, Lisa Kirkendale, Rüdiger Bieler, & Colleen Cavanaugh
12:00 PM to 12:30 PM	Discussion
12:30 PM to 1:30 PM	<b>Lunch</b>

**October 19<sup>th</sup>, 2018, Willemstad Room, Afternoon**

	<b>Phylogenomics II</b> Organizers: Gonzalo Giribet and Gert Wörheide
1:30 PM to 1:45 PM	A Phylogenomic Framework for Decapoda Joanna M. Wolfe*, Jesse W. Breinholt, Keith A. Crandall & Heather D. Bracken-Grissom
1:45 PM to 2:00 PM	From the Shallows to the Abyss: Utilizing Phylotranscriptomics to Characterize Crustacean Visual Opsin Diversity Danielle M. DeLeo* & Heather D. Bracken-Grissom
2:00 PM to 2:15 PM	Copepod Phylogenomics: Orthology Inference for Target-capture Marker Development James P. Bernot* & Keith A. Crandall
2:15 PM to 2:30 PM	Amplification of VWD Domains Preceded the Origin of Cypridinid Luciferases and Bioluminescence Todd H. Oakley*, Nicholai M. Hensley, Emily A. Ellis, Gretchen A. Gerrish & Elizabeth Torres
2:30 PM to 2:45 PM	Confessions of a Ph.D. Candidate: Lessons Learned From Phylogenomics on Heterobranch Gastropods Vanessa L. Knutson* & Gonzalo Giribet
2:45 PM to 3:00 PM	Resolving Deep Nodes in the Gastropod Phylogeny Tauana Cunha* & Gonzalo Giribet
3:00 PM to 3:30 PM	<b>Discussion</b>
3:30 PM to 4:00 PM	<b>Coffee Break</b>

October 19<sup>th</sup>, 2018, Willemstad Room, Afternoon

	<p><b>Conservation Genomics I</b></p> <p>Organizers: Iliana Baums and Sheila Kitchen</p>
4:00 PM to 4:15 PM	<p>The Innovative Potential of Genomic Tools for Conservation in the Face of Global Change</p> <p>Iliana B. Baums*</p>
4:15 PM to 4:30 PM	<p>Whole Genome Resequencing Reveals Genomic Basis of Local Adaptation to Extreme Environments in the Ascidian <i>Phallusia nigra</i>.</p> <p>Edward G Smith* &amp; John A. Burt</p>
4:30 PM to 4:45 PM	<p>Evaluating Adaptive Potential and Identifying Markers of Thermal Tolerance in a Great Barrier Reef Coral <i>Platygyra daedalea</i></p> <p>Holland Elder*, Veronique Mocellin, Jose Montalvo-Proano, Line Bay, &amp; Eli Meyer</p>
4:45 PM to 5:00 PM	<p>Population Dynamics and Outlier Analysis of the Sea Urchin, <i>Echinometra</i> sp. EZ</p> <p>Remi N. Ketchum*, Edward G. Smith, Melissa B. DeBiase, Joseph F. Ryan, Grace O. Vaughan, Dain McParland, John A. Burt, &amp; Adam M. Reitzel</p>
5:00 PM to 5:15 PM	<p><i>Pocillopora damicornis</i> Immune Gene Expression Patterns in Response to Antibiotics Treatments, Heat Stress and Immune Stimulation with Bacterial Lipopolysaccharide</p> <p>Michael T. Connelly*, Crystal McRae, Pi-Jen Liu, &amp; Nikki Traylor-Knowles</p>
5:15 PM to 5:30 PM	<p>The Genome of the Quagga Mussel and the Evolution of Freshwater Embryonic Osmoregulation</p> <p>Andrew D. Calcino*, Oleg Simakov, André Luiz de Oliveira, Thomas Schwaha, Elisabeth Zieger &amp; Andreas Wanninger</p>
5:30 PM to 6:00 PM	<p><b>Discussion</b></p>
6:00 PM to 7:00 PM	<p><b>Keynote:</b> Comparative Metatranscriptomes Reveal the Adaptive Potential of Coral Holobionts Under Thermal Stress</p> <p>Viridiana Avila, Bishoy Kamel, Michael De Salvo, Roberto Iglesias-Prieto &amp; Mónica Medina*</p>

October 19<sup>th</sup>, 2018, Evening

	<p><b>Free Time</b></p>
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**October 20<sup>th</sup>, 2018, Blenchi Room, Concurrent Session 1, Morning**

	<b>Command Line Introduction Workshop</b> Organizers (alphabetically): Joseph Sevigny, Devin Thomas, & Kelley Thomas
8:30 AM to 10:30 AM	Command line introduction
10:30 AM to 11:00 AM	<b>Coffee Break</b>
	<b>Assembly/Annotation Workshop</b> Organizers (alphabetically): C. Titus Brown, Jean-François Flot, Lisa Johnson, Bishoy Kamel, Adelaide Rhodes, Joseph Sevigny, Devin Thomas
11:00 AM to 12:30 PM	Assembly/Annotation workshop
12:30 PM to 1:30 PM	<b>Lunch</b>

**October 20<sup>th</sup>, 2018, Willemstad Room, Concurrent Session 2, Morning**

	<b>Conservation Genomics II</b> Organizers: Iliana Baums and Sheila Kitchen
8:30 AM to 9:15 AM	SNP Discovery, Genotype and Database Workshop
9:15 AM to 9:30 AM	Workshop Break
9:30 AM to 10:00 AM	SNP Discovery, Genotype and Database Workshop continued
10:00 AM to 10:15 AM	Toward the genetic prediction of bleaching response in corals Zachary L. Fuller*, Yi Liao, Line K. Bay, Mikhail Matz, & Molly Przeworski
10:15 AM to 10:30 AM	Understanding Heat Stress Resistance in <i>Orbicella faveolata</i> From the Florida Keys Using Gene Network Analyses Catalina Aguilar Hurtado*, I. C. Enochs, K. C. Cohen & DP Manzello
10:30 AM to 11:00 AM	<b>Break</b>
	<b>Contributed Talks: Existing and Emerging Genomic Technologies</b> Organizer: Michael Eitel
11:00 AM to 11:15 AM	seqCAB (Sequence Conversion & Annotation with BLAST+): A BLAST Utility to Facilitate '-omics' Analyses Through Multi-core Parallelization and Taxonomic Annotation Cheryl L. Ames*, Amina Jackson, Sophie M. Colston, Allen G. Collins, Gary J. Vora, & W. Judson Hervey IV



11:15 AM to 11:30 AM	Expressed Exome Capture Sequencing (EecSeq): a method for cost-effective exome sequencing of non-model organisms Jonathan B. Puritz* & Kathleen E. Lotterhos
11:30 AM to 11:45 AM	Whole-chromosome Assembly and Analysis of Hybridogenetic Lineages of the Desert Ant <i>Cataglyphis hispanica</i> Lyam Baudry*, Hugo Darras, Jean-François Flot, Martial Marbouty, Serge Aron & Romain Koszul
11:45 AM to 12:30 PM	<b>Discussion</b>
12:30 PM to 1:30 PM	<b>Lunch</b>

**October 20<sup>th</sup>, 2018, Blenchi Room, Concurrent Session 1, Afternoon**

1:30 PM to 3:30 PM	Assembly/Annotation workshop (continued)
3:30 PM to 4:00 PM	<b>Break</b>
4:00 PM to 6:00 PM	Assembly/Annotation workshop (continued)

**October 20<sup>th</sup>, 2018, Willemstad Room, Concurrent Session 2, Afternoon**

	<b>Contributed Talks: Existing and Emerging Genomic Technologies</b> Organizer: Michael Eitel
1:30 PM to 1:45 PM	Differential Gene Expression Data Elucidate Systemic Effects of Wnt Signaling Inhibition During Segmentation in the Spider <i>Parasteatoda tepidariorum</i> Emily V. W. Setton* & Prashant P. Sharma
1:45 PM to 2:00 PM	BlobToolKit: Identification and Analysis of Non-target Data in All Eukaryote genome projects Mark Blaxter*, Richard Challis, Guy Cochrane, Nima Pakseresht & Edward Richards
	<b>Contributed Talks: IGNITE</b> Organizers: Gert Wörheide and Michael Eitel
2:00 PM to 2:15 PM	Assembling Genomes Into Complete Chromosomes Using Chromosome Conformation Capture: The Case of the Bdelloid Rotifer <i>Adineta vaga</i> Jean-François Flot*, Jitendra Narayan, Lyam Baudry, Alessandro Derzelle, Antoine Limasset, Romain Koszul & Karine Van Doninck

2:15 PM to 2:30 PM	Abundant DNA Methylation in the Demosponge <i>Amphimedon queenslandica</i> is involved in Genomic Evolution and Transcriptional Regulation  Juan Antonio Ruiz-Santesteban*, Yi Jin Liew & Manuel Aranda
2:30 PM to 2:45 PM	Does Evolution of Generalism in <i>Bemisia tabaci</i> Relate to Positive Selection in Cytochrome P450 Enzymes?  Ksenia Juravel*, Diego Santos Garcia, Osnat Malka & Shai Morin
2:45 PM to 3:00 PM	Delineation of the Caribbean Fire Corals ( <i>Millepora</i> spp.) using transcriptomic data  Ingrid C. Ortiz-González, Ramón E. Rivera-Vicéns* & Nikolaos V. Schizas
3:00 PM to 3:15 PM	Genomics of Adaptation  Agostinho Antunes*
3:15 PM to 3:30 PM	Molecular Paleobiology Reveals the Deep Evolution of Ecdysozoa  Mattia Giacomelli* et al.
3:30 PM to 4:00 PM	<b>Coffee Break</b>
	<b>Contributed Talks: General Session</b>
4:00 PM to 4:15 PM	Accessing the miRNA Complement in Tunicate Genomes, an <i>in silico</i> Approach  Cristian A. Velandia-Huerto*, Federico D. Brown, Adriaan Gittenberger, Clara I. Bermúdez-Santana & Peter F. Stadler.
4:15 PM to 4:30 PM	A multi-omic Approach to Reveal Interactions Between the Hard Clam and its Pathogen QPX  Bassem Allam*, Rachel Hartman, Kailai Wang, Sleiman Bassim, Ewelina Rubin and Emmanuelle Pales Espinosa
4:30 PM to 4:45 PM	The State of Knowledge and Resources for Marine Invertebrate Genomic Research  Jonathan A. Coddington*
4:45 PM to 6:00 PM	<b>Breakout session or Free time</b>
6:00 PM to 7:00 PM	<b>Keynote:</b> Ascidian coloniality: from genomes to super-organisms Federico D. Brown et al.

October 20<sup>th</sup>, 2018, Poster Session & Mixer at CARMABI Research Station, Evening

7:30 PM to 9:00 PM	<p><b>Poster Session &amp; Mixer</b></p> <p>Organizers (alphabetically): Tim Collins, Fabrizio Ghiselli, Kevin Kocot, &amp; Joe Lopez</p>
	<p>Posters (in alphabetical order by presenter's last name):</p>
	<p>GenomeHubs: Distributed Genome Databasing for Neglected Organisms</p> <p>Mark Blaxter* &amp; Richard Challis</p>
	<p>Disentangling a Taxonomic Conundrum: Cryptic Species as Separate Evolutionary Lineages</p> <p>José Cerca* &amp; Torsten Struck</p>
	<p>Transcriptomic Changes During Regeneration in the Marine Sponge <i>Cinachyrella</i> cf. <i>cavernosa</i></p> <p>Aabha Deshpande* &amp; Narsinh L. Thakur</p>
	<p>Integrated Genomic Resources for a Temperate Model of Cnidarian-Algal Symbiosis</p> <p>Holland Elder*, Katherine Diedzic, Manuel Aranda &amp; Eli Meyer</p>
	<p>Draft assemblies of a bryozoan and a chaetognath with Illumina and Oxford Nanopore data sets</p> <p>Rosa Fernández*</p>
	<p>High Quality Genome Assembly of the Octocorallian <i>Corallium rubrum</i>.</p> <p>Philippe Ganot* et al.</p>
	<p>Using RNA-Seq to Elucidate the Phylogeny of Polycladida (Platyhelminthes), a Flatworm Clade with Diverse Life Histories</p> <p>Jessica A. Goodheart*, Allen G. Collins, Michael P. Cummings &amp; Katherine Rawlinson</p>
	<p>Differential Gene Expression Profiles of the Bearded Fireworm, <i>Hermodice carunculata</i>, in Hypoxic Conditions</p> <p>Candace Grimes* &amp; Anja Schulze</p>
	<p>Are ultraconserved elements an informative phylogenetic marker for reconstructing deep molluscan phylogeny?</p> <p>Emily Pabst &amp; Kevin M. Kocot*</p>

	<p>PhyloPyPruner: Contamination-Aware Tree-Based Orthology Inference</p> <p>Felix Thalén &amp; Kevin Kocot*</p>
	<p>Does Chromatin Diminution Affect Invertebrate Genome Assembly?</p> <p>Aleksey Komissarov*, Sergey Kliver, Mike Rayko, Joseph P. Dunham, Mariangela Iannello, Liliana Milani, Sophie Breton, Sergey V. Nuzhdin, Marco Passamonti, Fabrizio Ghiselli.</p>
	<p>Cinachyrella as a Model Sponge Genus for Evolution, Microbial Symbiosis, and Comparative Genomics</p> <p>Jose V. Lopez*, Nidhi Vijayan, Marie L. Cuvelier, Cole G. Easson, Emily Blake, Astrid Schuster, Alexandra M. Campbell, Yasmin Khan, &amp; Paco Cárdenas</p>
	<p>Dicyemid Mesozoan Genome Reveals Adaptations to the Parasitic Lifestyle</p> <p>Tsai-Ming Lu*, Hidetaka Furuya &amp; Noriyuki Satoh</p>
	<p>Draft Genome of the Bryozoan <i>Bugula neritina</i> – a Colonial Animal Packing Powerful Symbionts and Potential Medicines</p> <p>Mikhail Rayko*, Adelaide Rhodes, Aleksey Komissarov, Sergey Kliver, Grace Lim-Fong, Jason Kwan, Stephen J O'Brien &amp; Jose V. Lopez</p>
	<p>New Insights on Oyster Genomics: The Flat Oyster as a Model for Disease and Environmental Adaptation Studies</p> <p>Isabelle Boutet, Ricardo Gonzalez-Araya, Benoit Salaun, François Lallier, Jean-Yves Toullec, Ann Andersen, Helene Laguerre, Bassem Allam, Ximing Guo &amp; Arnaud Tanguy*</p>
	<p>Phylogenomics of Class Anthozoa (Cnidaria) Using Universal Target-enrichment Baits</p> <p>A.M. Quattrini, B.C. Faircloth, Benjamin Titus*, E. Rodriguez and C.S. McFadden</p>
	<p>Reduced Representation Sequencing for Symbiotic Anthozoans: Are Reference Genomes Necessary to Eliminate Endosymbiont Contamination and Make Robust Phylogeographic Inferences?</p> <p>Benjamin Titus* &amp; Marymegan Daly</p>
	<p>The Genome of the Chiton <i>Acanthopleura granulata</i></p> <p>Rebecca M. Varney*, Daniel I. Speiser &amp; Kevin M. Kocot</p>

	<p>Monaco Explorations – Climate Change Impacts on Ocean and Human Health</p> <p>Didier Zoccola*</p>
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**October 21<sup>st</sup>, 2018, Blenchi Room, Concurrent Session 1, Morning**

	<p><b>Assembly/Annotation Workshop</b></p> <p>Organizers (alphabetically): C. Titus Brown, Jean-François Flot, Lisa Johnson, Bishoy Kamel, Adelaide Rhodes, Joseph Sevigny, Devin Thomas</p>
8:30 AM to 10:30 AM	Assembly/Annotation workshop continued
10:30 AM to 11:00 AM	<b>Break</b>
	<p><b>QIIME 2 Workshop</b></p> <p>Organizers (alphabetically): Holly Bik, Joseph Sevigny, Devin Thomas, &amp; Kelley Thomas</p>
11:00 AM to 12:30 PM	QIIME 2 workshop
12:30 PM to 1:30 PM	<b>Lunch</b>

**October 21<sup>st</sup>, 2018, Willemstad Room, Concurrent Session 2, Morning**

	<p><b>Contributed Talks: General Session</b></p> <p>Organizers (alphabetically): Tim Collins, Fabrizio Ghiselli, Kevin Kocot, &amp; Joe Lopez</p>
8:30 AM to 8:45AM	<p>Revisiting contemporary hybridization between Caribbean Acroporids</p> <p>Sheila Kitchen*, Meghann Devlin-Durante, Kate Stankiewicz, Aakrosh Ratan, Nicole Fogarty, Webb Miller, Iliana Baums</p>
8:45 AM to 9:00 AM	<p>Similarities and differences between genomes of temperate and tropical corals</p> <p>Iliana B. Baums*, Kathryn H. Stankiewicz, Sheila A. Kitchen, Meghann K. Devlin-Durante &amp; Astrangia Genome Consortium</p>
9:00 AM to 9:15 AM	<p>Profiling the Genetic Diversity and Structure of Pocilloporid Coral Populations along the Red Sea Using a Population Genomics Approach - Insights From RAD Sequencing of <i>Stylophora pistillata</i> and <i>Pocillopora verrucosa</i></p> <p>Carol Buitrago-Lopez*, Thierry Gosselin, Yvonne Sawall, Hagen M Gegner, Maren Ziegler, Manuel Aranda, Daniel J Barshis &amp; Christian R Voolstra</p>
9:15 AM to 9:30 AM	<p>Phylogeny and Function of a Newly-Discovered Coral Parasite within “<i>Candidatus Marinoinvertebrata</i>”</p>

	J. Grace Klinges*, Stephanie M. Rosales, Ryan McMinds, Elizabeth C. Shaver, Esther Peters, Deron E. Burkepile & Rebecca Vega Thurber
9:30 AM to 9:45 AM	Effects of Light on Coral Growth, Morphology, and Symbiodiniaceae Communities in the Coral Genus <i>Pavona</i>  Claire J Lewis*, Amy L Moran, Tayler Massey, Shayle B Matsuda, Zac H Forsman, Dave Gulko & Peter B Marko
9:45 AM to 10:00 AM	Identifying the Genetic Mechanisms Underpinning the Patterning of Antenniform Legs in Arachnids Using a Differential Expression Approach in Whip Spiders (Arachnida, Amblypygi)  Guilherme Gainett* & Prashant P. Sharma
10:00 AM to 10:15 AM	The Genome of <i>Lepidodermella squamata</i> (Dujardin 1841) and the Evolution of Developmental Gene pathways in Spiralia  Felipe Aguilera*, Kevin Pang & Andreas Hejnol
10:15 AM to 10:30 AM	Identification of Protein Domains on Putative Ancestral Subgenomic Regions Associated With Genes of the Immune System in the Subphylum Tunicata Using as Reference Genes of Human Cell-lines Previously Mapped on <i>Botryllus schlosseri</i>  Gabriel Luis Hernández- Gómez* & Clara I. Bermúdez-Santana
10:30 AM to 11:00 AM	<b>Break</b>
11:00 to 11:15 AM	Development of Cellular Assays for Characterization of Coral Cells Using Fluorescence-activated Cell Sorting (FACS)  Grace A. Snyder*, Michael T. Connelly, Benyamin Rosental & Nikki Traylor-Knowles
11:15 AM to 11:30 AM	Functional and Genomic Consequences of Mito-nuclear Coevolution in an Intertidal Copepod  Felipe S. Barreto*
11:30 AM to 11:45 AM	Evolution on Ice: 'Omic insights into Molecular Adaptation in Antarctic Sponges  Nathan J Kenny* & Ana Riesgo
11:45 AM to 12:00 PM	50 Shades of Red: An Analysis of the Biodiversity of <i>Goniobranchus</i> Nudibranchs  Lynn J. Bonomo* & Terrence M Gosliner

12:00 PM to 12:15 PM	A Hybrid-hierarchical Genome Assembly Strategy to Sequence the Invasive Golden Mussel, <i>Limnoperna fortune</i> Marcela Uliano-Silva, Francesco Dondero, Thomas Dan Otto, Igor Costa, Nicholas Costa Barroso Lima, Juliana Alves Americo, Camila Junqueira Mazzoni, Francisco Prosdocimi, & Mauro de Freitas Rebelo*
12:15 PM to 12:30 PM	<b>Discussion</b>
12:30 PM to 1:30 PM	<b>Lunch</b>

**October 21<sup>st</sup>, 2018, Blenchi Room, Concurrent Session 1, Afternoon**

1:30 PM to 3:30 PM	QIIME 2 workshop (continued)
3:30 PM to 4:00 PM	<b>Coffee Break</b>
4:00 PM to 5:00 PM	QIIME 2 workshop (continued)

**October 21<sup>st</sup>, 2018, Willemstad Room, Concurrent Session 2, Afternoon**

	<b>Contributed Talks: EukHiTS</b> Organizers (alphabetically): Holly Bik & Kelley Thomas
1:30 PM to 1:45 PM	Current "Unknowns" in Nematode Genomics and Biodiversity. Tiago J. Pereira* & Holly M. Bik
1:45 PM to 2:00 PM	New Tools for Old Problems: Population Genomics and Biogeographical Inference of the <i>Stygocapitella subterranea</i> Cryptic Species Complex (Annelida: Parergodrillidae) José Cerca*, Mark Ravinet, Julian Catchen, Angel Rivera-Colón & Torsten Struck
2:00 PM to 2:15 PM	The Epigenetic Landscape in the Bdelloid Rotifer <i>Adineta</i> Fernando Rodriguez* & Irina R. Arkhipova
2:15 PM to 2:30 PM	Putting <i>C. elegans</i> in Its Place: Genome Sequencing of All <i>Caenorhabditis</i> Species Mark Blaxter*, Lewis Stevens & Marie-Anne Félix
2:30 PM to 2:45 PM	The contribution of a diverse set of metazoan draft genomes and improvement of metagenomic analyses of meiofaunal communities Joseph L. Seigny*, Francesca Leasi, Anthony Westbrook, Stephen



	D. Simpson, Jeffrey Hall, Krystalynne Morris, Holly Bik, Paul Montagna, Jon Norenburg, W. Kelley Thomas.
2:45 PM to 3:15 PM	EuKHiTS discussion
3:30 PM to 4:00 PM	<b>Break</b>
4:00 PM to 5:00 PM	<b>Breakout session:</b>
	<b>Phylogenomics Keynote Speaker, co-sponsored by EukHiTS and IGNITE</b>
5:00 PM to 6:00 PM	<b>Keynote:</b> Phylogenomics Without Genomes: Tales from the Understudied  Johanna T. Cannon
6:00 PM to 7:00 PM	<b>Final Roundtable Discussion:</b> GIGA Society Meeting and Non-Profit Status Discussion

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