

JENNIFER N. IDOL

jennifer.idol@jax.org

EDUCATION:

University of North Carolina Wilmington
Bachelor of Science, Marine Biology, May 2011
Minor: Statistics
GPA: 3.67 out of 4.0

University of North Carolina Wilmington
Masters of Science, Marine Biology, July 2013
Thesis Title: Spatial and Seasonal Variation in Hardbottom Benthic Communities in Onslow Bay, North Carolina, USA
GPA: 3.9 out of 4.0

EMPLOYMENT EXPERIENCE:

Biomedical Technologist III; May 2016 – Present

The Jackson Laboratory, Scientific Services, Genome Technologies;
Farmington, CT

- Performed library preparation from DNA and RNA for samples for Next Generation Sequencing (Illumina, Pacific Biosciences and Oxford Nanopore). Library prep methods included Mouse and Human Exome, Mouse and Human Whole Genome, Human Cancer Panel Capture, PCR Amplicons, Nugen RRBS, targeted Array Capture, oxBS, All-Seq, Small RNA, PacBio Iso-Seq, PacBio Whole Genome, PacBio Targeted Amplicons, Oxford Nanopore prep for sequencing. Extraction methods include both RNA and DNA from tissues, blood, FFPE sections.
- In charge of running, maintaining and updating the Pacific Biosciences Sequel sequencing platforms (and RSII until 2018).
- Performed sequencing using the Illumina MiSeq and NovaSeq 6000 platforms.
- Performed sequencing using the Oxford Nanopore GridION and PromethION.
- During the COVID-19 pandemic, performed RNA-Seq, RNA-Capture, Pacific Biosciences long insert Amplicon and Pacific Bio Iso-Seq Library Preps on pre-extracted COVID RNA samples.
- Kept lab in compliance with safety protocols of The Jackson Laboratory.

Biomedical Technologist II; August 2014 – May 2016

The Jackson Laboratory, Scientific Services, Genome Technologies;
Bar Harbor, ME

- Performed library preparation from DNA for samples for Next Generation Sequencing. Library prep methods included ChIP-Seq, DREAM, Mouse Exome, Mouse Whole Genome, Human Exome, Human Cancer Panel Capture, Nextera MatePair, PCR Amplicons, Nugen RRBS, and targeted Array Capture.
- Performed extractions using Hot NaOH and Qiagen Extraction kits.
- Ran the Illumina MiSeq sequencer.
- Did QC on DNA and RNA libraries including Qubit, Nanodrop and Bioanalyzer.

IRTA / Laboratory Technician; August 2013 – August 2014

National Institute of Health, National Human Genome Research Institute, Genome Technology Branch, Lab of Dr. Shawn Burgess; Bethesda MD

- Bred, sorted and raised lines of Zebrafish as needed for genetic experiments.
- Genotyped individual fish from three Zebrafish lines using fin clips, PCR and gel electrophoresis.
- Performed CRISPR injections on Zebrafish embryos.
- Screened Zebrafish using fluorescent PCR to determine presence of insertions/ deletions due to CRISPR.
- Performed hair cell regeneration studies on all mutations generated by CRISPR.

UNCW Research Assistant; June 2012 – July 2013

University of North Carolina Wilmington; Employer – Dr. D. Wilson Freshwater

- Collected and morphologically identified algal specimens from the Pacific and Atlantic Coasts, Panama CA.
- Compared molecular data from specimens and possible related specimens to verify morphological identifications.
- Research diving for ecological studies, collections and pictures in Onslow Bay, NC, USA and Panama.

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EMPLOYMENT EXPERIENCE (CONTINUED):

UNCW Graduate Assistant for the Quality Enhancement Program; August 2011 – May 2012

University of North Carolina Wilmington; Employer – Dr. Zachary Long, (910)962-2828, longz@uncw.edu

- Liaison between faculty and undergraduate students of the Department of Biology and Marine Biology QEP.
- Taught and planned the Department of Biology and Marine Biology QEP for 12 undergraduate students (Fall 2011).
- Attended planning meetings and work with other departments QEPs as a part of the Expanding the Professoriate program across UNCW.

IRTA/ Research Assistant; May – July 2011

National Institute of Health, National Human Genome Research Institute, Genome Technology Branch, Lab of Dr. Shawn Burgess; Bethesda MD

- Bred, sorted and raised lines of Zebrafish as needed for genetic experiments.
- Genotyped individual fish from three Zebrafish lines using fin clips, PCR and gel electrophoresis.

IRTA/ Research Assistant; May – August 2010

National Institute of Health, National Human Genome Research Institute, Genome Technology Branch, Lab of Dr. Shawn Burgess; Bethesda MD

- Bred, sorted and raised lines of Zebrafish as needed for genetic experiments.
- Treated Zebrafish with copper to kill off hair cells in inner ear and lateral line to induce regeneration.
- Prepared Zebrafish for the Flow Sorting Machine to collect experimentally important cells.
- Worked to isolate gene that caused regeneration in Zebrafish hair cells.

Education Volunteer; North Carolina Aquarium at Fort Fisher; Wilmington, NC; November 2009 – May 2010

Employer – Education Department, (910)458-8257 ext. 232, 900 Loggerhead Road, Kure Beach, NC 28449

- Educated visitors about exhibits in the aquarium including the touch tank, alligators, and turtle exhibits.

Genetics Group Study Leader/Tutor for Professor Dr. Diane Dodd; UNCW, Wilmington, NC; January – April 2010

Employer – Dr. Diane Dodd, (910)962-3228, doddd@uncw.edu

- Tutored a group of approximately 20 students in genetics once a week.

PADI Divemaster; May-August 2008 and 2009

Boy Scouts of America Florida Sea Base High Adventure Camp; Islamorada, Florida Keys, FL

Employer – Capt. Steve Willis, (305)664-5625, 73800 Overseas Highway, Islamorada, FL 33036

- Guided groups of 8 scouts and adults on dives off the coast of Islamorada Key.
- Taught classes on conservation, fish identification, safe diving practices, and underwater navigation.
- Helped groups check into camp and processed medical forms and additional paperwork.

Red Cross Lifeguard; Herndon Community Center; Herndon, VA; May-August 2007

Employer – Herndon Community Center Aquatics, (703)435-6800 ext. 2117, 814 Ferndale Avenue, Herndon, VA 20170

- Oversaw safety of patrons and initiated rescue procedures if necessary.
- Maintained water quality of pool.

Pre-IRTA/Research Assistant; May-August 2006

National Institute of Health, National Human Genome Research Institute, Genome Technology Branch, Lab of Dr. Shawn Burgess; Bethesda MD

- Bred and raised lines of Zebrafish as needed for genetic experiments.
- Isolated DNA using PCR and gel electrophoresis.

GRANTS:

UNCW Center for Marine Science Summer Research Award 2012

Constellation Federal Credit Union Fall 2012 Scholarship

BIO GSA Travel Grant for Southeast Phycological Colloquy

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CERTIFICATIONS:

American Red Cross Standard First Aid
PADI Open Water Certification
PADI Advanced Open Water Certification
PADI Rescue Diver Certification
PADI Divemaster Certification
PADI Assistant Instructor Certification (Certification Date: 01-26-2009)
PADI Nitrox Certification
Technical Diving International Nitrox Certification
UNCW Research Diver (AAUS Certification)

PUBLICATIONS:

Wong CH, CY Ngan, RL Goldfeder, J Idol, C Kuhlberg, R Maurya, K Kelly, G Omerza, N Renzette, F De Abreu, L Li, FA Browne, ET Liu, CL Wei (2021) Subgenomic RNAs as molecular indicators of asymptomatic SARS-CoV-2 infection. *bioRxiv* 10.1101

L Gong, CH Wong, J Idol, CY Ngan, CL Wei (2019) Ultra-Long Read Sequencing for Whole Genomic DNA Analysis. *JoVE Scientific Video Journal*. 10.3791

W Pei, L Xu, S Huang, K Pettie, J Idol, A Rissone, E Jimenez, J Sinclair, G Varshney, MP Jones, B Carrington, K Bishop, H Huang, R Sood, S Lin, S Burgess (2018) Guided genetic screen to identify genes essential in the regeneration of hair cells and other tissues. *Regenerative Medicine* 3:11

DW Freshwater, J Idol, S Parham, C Fernandez-Garcia, N Leon, P Gabrielson, B Wysor (2017) Molecular Assisted Identification Reveals Hidden Red Algae Diversity from the Burica Peninsula, Pacific Panama. *Diversity* 9: 19

W Pei, L Xu, G Varshney, B Carrington, K Bishop, MP Jones, S Huang, J Idol, P Pretorius, A Beirl, L Schimmenti, K Kindt, R Sood, S Burgess (2016) Additive reductions in zebrafish PRPS1 activity result in a spectrum of deficiencies modeling several human PRSP1-associated diseases. *Scientific Reports* 6:29946

W Pei, K Tanaka, SC Huang, L Xu, B Liu, J Sinclair, J Idol, GK Varshney, H Huang, S Lin, RB Nussenblatt, R Mori, S Burgess (2016) Extracellular Hspd60 triggers tissue regeneration and wound healing by regulating inflammation and cell proliferation. *Regenerative Medicine* 16013

GK Varshney, W Pei, MC LaFave, J Idol, L Xu, V Gallardo, B Carrington, K Bishop, MP Jones, M Li, U Harper, SC Huang, A Prakash, W Chen, R Sood, J Ledin, S Burgess (2015) High-throughput gene targeting and phenotyping in zebrafish using CRISPR/Cas9. *Genome Research* 25:1030-1042

J Idol. (2013) Spatial and temporal variation in hardbottom benthic communities at five sites in Onslow Bay, North Carolina. *Masters of Science Thesis*

DW Freshwater, JN Idol. (2013) Studies of North Carolina Marine Algae XIII. First Reports of the Genus *Cottoniella* (Rhodophyta, Sarcomeniaceae). *Marine Biodiversity Records* 6:88

B Wysor, DW Freshwater, N Leon, C Fernandez-Garcia, P Gabrielson, V Charbonneau, C Green, J Idol, S Parham (2012) Algal Diversity of the Burica Peninsula, Pacific Panama. *Journal of Phycology* 48:S10

M Behra, VE Gallardo, J Bradsher, A Torrado, A Elkahloun, J Idol, J Sheehy, S Zonies, L Xu, KM Shaw, C Satou, S Higashijima, B Weistein, S Burgess. (2012) Transcriptional signature of accessory cells in the lateral line, using the *Tnk1bp1:EGFP* transgenic zebrafish line. *BMC Developmental Biology* 12:6

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PRESENTATIONS:

J Idol. Technical Protocols Hands-On Tutorial. Presented at The Jackson Laboratory Workshop on Long Read Sequencing Technologies. Sept 19th & 20th, 2019.

J Idol, L Gong, CH Wong, D Harrison, L Bellfy, A Mil-Homens, M Ryan, CY Ngan, C Lee, CL Wei. High Coverage, Ultra-Long Read Sequencing of Human Genomes. Presented at Oxford Nanopore London Calling. May 24th, 2018.

J Idol. Technical Protocols Hands-On Tutorial. Presented at The Jackson Laboratory Workshop on Long Read Sequencing Technologies. April 24th & 25th, 2018.

J Idol, Z Long, DW Freshwater. Spatial and Seasonal Variation in Hard Bottom Benthic Communities in Onslow Bay, North Carolina. Presented for Thesis Defense. July 19th, 2013.

J Idol, Z Long, DW Freshwater. Seasonal and Spatial Variation in the Benthic Community of North Carolina Hardbottoms. Presented at the North Carolina Scientific Diver Symposium. February 22nd, 2013.

J Idol. Seasonality and Distribution of Macroalgae in Onslow Bay, NC. Presented at Southeastern Phycological Colloquy. October 20th, 2012.

DW Freshwater, B Wysor, N Leon, C Fernández-García, P Gabrielson, V Charbonneau, C Green, J Idol, S Parham. Algal Diversity of the Burica Peninsula, Pacific Panama. Presented at the Annual Meeting of the Phycological Society of America. June 21st, 2012. Abstract # T14.

J Idol. Spatial and Temporal Macroalgae Distribution in Onslow Bay, NC. Presented at UNCW Department of Biology and Marine Biology Masters Student Prospectus Symposium. April 21st, 2012.

B Wysor, DW Freshwater, N Leon, C Fernández-García, P Gabrielson, V Charbonneau, C Green, J Idol, S Parham. Algal Diversity of the Burica Peninsula, Pacific Panama. Presented at 51st Annual Northeast Algal Society Meeting. April 21st, 2012.