# John Edward Major jr.

Scientist, Engineer & Leader with a track record of contributing to the successful realization of highly ambitious enterprises.

**Phone:** 617.270.7981
**Address:** 3791 Harrison St Oakland CA, 94611
**Website:** http://daylilyinformatics.com
**Email:** john@daylilyinformatics.com

Areas of expertise:

- ___ Bioinformatics
- ___ Scalable Operations:
  - _____| Managing and developing processes to gracefully support exponentially growth.
  - _____| Interface for complex regulatory (CLIA & CAP), scientific and engineering needs.
- ___ Recruiting top scientific and engineering talent.
- ___ Architect & engineer of 'omics data management systems.
- ___ Process Engineering, Automation & Monitoring.
- ___ Pragmatic software engineering.
- ___ Research & development of new clinical products.

## EXPERIENCE

**Daylily Informatics**, Oakland CA, (daylilyinformatics.com)    2022 TO PRESENT

**Founder**

- ___ Informatics consulting.
- ___ Architect of daylily, a WGS analysis framework which makes WGS analysis widely available in under an hour, for dollars a sample and yielding cutting edge accuracy.
- ___ Industry leading managed genomic variant calling and QC services.

**Invitae**, San Francisco CA    2019 TO 2022

**Principal Research Scientist / Engineer**

- ___ Remaining current on informatics tools, algorithms and best practices.
- ___ As part of a team of 3, built from the ground up a CLIA-validated WGS product.
  - _____| Establishing product specifications.
  - _____| Partnered with the clinical lab to build tools supporting their work.
  - _____| Designing and implementation of the end to end LIMS and analysis pipeline.
- ___ Produced an ONT analysis pipeline to support a clinical metagenomic offering.
- ___ Served as bioinformatics representative to the GREGoR Consortium

**Invitae**, San Francisco CA    2017 TO 2019

**Director of Clinical Process Quality Management**

- ___ Oversaw Invitae's third successful CAP inspection.
- ___ Improved team integration with the full product development lifecycle.
- ___ Established weekly lab data review meetings to review out of range assay performance.
- ___ Moved paper-based record systems to digital systems.
- ___ Implemented a clinical asset management system.
- ___ Streamlined the incident management process.
- ___ Standardized the clinical product validation process.
- ___ Bridged communication gap between the software, bioinformatics and clinical teams.

**Invitae**, San Francisco CA                                      2013 to 2017

**Director of Dry Lab Operations**

___ Established and grew the team to 12 clinical and informatic analysts.
___ Co-architected and built core the LIMS system supporting clinical products.
___ Managed product operations (wet and dry lab).
___ Successfully stabilized erratic lab operations.
___ Key contributor to numerous process automation and scaleup projects.

**Invitae**, San Francisco CA                                      2012 to 2014

**Director of Clinical Lab Operations**

___ Managed lab's initial CLIA licensing and CAP accreditation.
___ Assisted in bringing Invitaes lab in Santiago de Chile into operation.
___ Worked with the Berkeley Center for Catastrophic Risk Management to adopt HRO principles.
___ Automated lab and informatic process monitoring.
___ Managed the team through sample volume growth of 4 orders of magnitude.

**Invitae**, San Francisco CA                                      2011 to 2015

**Startup team member**

___ As one of the initial employees of Locus Development, pitched in wherever I was most useful.

**Pacific Biosciences,** Mountain View CA                          2008 to 2011

**Staff Engineer, Bioinformatics**

___ Contributed to algorithms and analysis software packaged with the first single molecule sequencer.

**Self Employed Consultant,** San Francisco CA                     2008 to 2009

**Bioinformatics Scientist / Engineer**

___ Wrote a NGS metagenomic characterization pipeline.
___ Advised on mutation detection and annotation for several cancer studies at MSKCC.

**Perlegen,** Mountain View CA                                     2008 to 2008

**Bioinformatics Engineer**

___ Built alignment and QC modules for early exome sequencing capabilities developed at Perlegen.

**Memorial Sloan-Kettering Cancer Center,** New York NY           2005 to 2008

**Bioinformatics Engineer**

___ Built informatic systems for various panel assays developed by the Translational Oncology Core.
___ Taught bioinformatics courses for research Scientists and M.D.'s.
___ Represented the Computational Biology Center to The Cancer Genome Atlas (TCGA) project.
___ Authored and published the 'Genomic mutation consequence calculator.', an early variant effect prediction tool freely available on the internet.

**Redtail Arts Collective,** Boston MA                             2003 to 2008

**co-Founder & Board Member [ emeritus ]**

**Firefly Arts Collective,** Boston MA                             2003 to 2008

**co-Founder & Board Member [ emeritus ]**

The 501(c)(3) non-profit arts organization which produces the annual arts festival Firefly.

---

**Whitehead Institute / Broad Institute of MIT and Harvard,** Boston MA

2001 TO 2005

**Bioinformatics Engineer**

Made significant contributions to the automation required to enable the finishing of the human genome project.

---

**Thompson Financial Group, LLC,** Boston MA

2000 TO 2001

**Web Programmer**

---

**Webtakeout.net,** Boston MA

1999 TO 2000

**Co-Founder & Chief Architect / Engineer**

Early internet based, Boston area, takeout & delivery intermediary service.

---

**Northeastern University,** Boston MA

1998 TO 2000

**Graduate Research Assistant / Scientific Diver**

Studied the New England green sea urchin (*Strongylocentrotus droebachiensis*) fishery.

---

**Sea Education Association | SEA Semester,** Boston MA

1998 TO 1998

**Deckhand / Teaching Assistant**

---

*EDUCATION*

**Northeastern University,** Boston MA

2002 TO 2004

**M.Sc., Bioinformatics**

---

**East West Marine Biology Program,** Nahant MA

1999 TO 2000

Graduate studies marine ecology program

---

**Northeastern University,** Boston MA

2002 TO 2004

**B.S. Biology & B.S. Geology**

---

**arsDigita Boot Camp,** Boston MA

1999 TO 1999

---

**SEA Education Association,** Falmouth MA

1997 TO 1997

---

**Chatham High School,** Chatham NJ

1990 TO 1993

---

*SKILLS*

Bioinformatics, Leadership, Dogged, Social Networking, Volunteer Management, Automation, Analytical Skills, Sense of Urgency, Quality Management, Genomics, Software Engineering, Department Lead, Multidisciplinary Consensus Reality Broker, Sequencing, Regulatory Compliance, Clinical Laboratory Improvement Amendments (CLIA), Translational Bioinformatics, Analysis Pipeline Architecture and Implementation, Python, DJ, Project Management, Social Media, Strategic Influence, Snakemake, Linux, DNA sequencing, Sequence Analysis, Genetics, Computational Biology, Event Production, Biotechnology,

Cancer, Life Sciences, Molecular Biology, Data Mining, Data Analysis, Scientific Computing, Perl, Instrument Validation, Analytical Method Validation, Process Engineering, Pipeline Development

## PUBLICATIONS

**Subtype-specific genomic alterations define new targets for soft-tissue sarcoma therapy.**                    2010

**Nature Genetics**
PMID: 20601955

---

**Integrative Genomic Profiling of Human Prostate Cancer.**                    2010

**Cancer Cell**
PMID: 20579941

---

**An integrated genomic analysis of lung cancer reveals loss of DUSP4 in EGFR-mutant tumors.**                    2009

**Oncogene**
PMID: 19525976

---

**Genomic Mutation Consequence Calculator**                    2007

**Bioinformatics**
PMID: 17599934

---

**DNA sequence of human chromosome 17 and analysis of rearrangement in the human lineage.**                    2006

**Nature**
PMID: 16625196

---

**DNA sequence and analysis of human chromosome 8.**                    2006

**Nature**
PMID: 16421571

---

**CancerGenes: a gene selection resource for cancer genome projects.**                    2006

**Nucleic Acids Res.**
PMID: 17088289

---

**Genome sequence, comparative analysis and haplotype structure of the domestic dog**                    2005

**Genome Res.**
PMID: 15289470

---

**The complete genome and proteome of Mycoplasma mobile.**                    2004

**Genome Res.**
PMID: 15289470

---

**Finishing the euchromatic sequence of the human genome.**                    2004

**Nature**

PMID: 15496913

**Participant in the opening bell ceremony**, New York Stock Exchange
2015

Invited to join the Invitae delegation to the opening bell ceremony at the NYSE, to stand with the CEO as he rang the bell to open trading the day Invitae completed its IPO.

**Eagle Scout**, Boy Scouts of America
1993

Eagle Scout is the highest achievement or rank attainable in the Boy Scouts of America with 4% of scouts having attained the rank. Awarded in 1993