Mission Statement (Version October 12, 2010)

“QuBi Concentrators will learn statistical and computational methods and apply these methods to the processing, storage, analysis, visualization, and modeling of large-scale molecular biomedical data. They will also develop the research, communication, and collaboration skills to contribute to the solution of bioinformatics problems as members of multidisciplinary teams.”

**QuBi News**

**Quantitative Biology Education & Research at Hunter College  Spring, 2015**

**Congratulations to QuBi’15 Graduates**

- **Biology Majors**
  - Arman Akter | Thahmina Ali (Dr Krampis Lab) | Asmaa Butt | Thomas Hart (Macaulay Honors College; Department Honor; Seringhaus Award; Dr Xie Lab; will attend Rockefeller University doctoral program) | Sabeel Kazi | Djibril Keita | Lyle Kingsbury (Department Honor; Dr Melendez-Vasquez Lab; will attend UCLA doctoral program in neuroscience) | Raymond Liang (Macaulay Honors College; Department Honor; Drs Qiu & Xavier Labs) | Rayees Rahman (Drs Qiu & Xavier Labs) | Girish Raramttan (Department Honor; Seringhaus Award; Dr Qiu Lab; Bioinformatics Analyst at University of Michigan) | Maqsood Rukhinda | Vincent Setang

- **Computer Science Majors**
  - Baekdoo Kim (Dr Krampis Lab)

- **Mathematics & Statistics Majors**
  - Samuel Hosmer (Dr Krampis Lab; will attend CUNY Graduate Center doctoral program in Mathematics) | Dylan Sun (Macaulay Honors College; Department Honor; will attend University of Michigan’s Master’s Program in Biostatistics with full tuition & stipend)

**Alumni News**

- **Vincent Xue (CS-QuBi, 2011)**: 3rd Year doctoral students at MIT
- **Yözen Hernández (CS-QuBi, 2010)**: 4th year doctoral student at Boston University
- **Linda Huang (CS-QuBi, 2014)**: Bioinformatics Analyst, Weil Cornell Medical College
- **Akanksha Verma (CS-QuBi, 2014)**: Bioinformatics Analyst, Weil Cornell Medical College

**QuBi Enrollment & Graduates**

<table>
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<tr>
<th></th>
<th>Active</th>
<th>Graduated</th>
<th>Med/Grad School</th>
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<tbody>
<tr>
<td>Biology</td>
<td>25</td>
<td>16</td>
<td>6</td>
</tr>
<tr>
<td>Computer Science</td>
<td>12</td>
<td>11</td>
<td>5</td>
</tr>
<tr>
<td>Chemistry</td>
<td>24</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>Mathematics/Statistics</td>
<td>11</td>
<td>11</td>
<td>2</td>
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<tr>
<td>Total</td>
<td>72</td>
<td>45</td>
<td>17</td>
</tr>
</tbody>
</table>

More Next Page!
Student Co-authored Research Publications


* QuBi student, Hunter Mentor
Looking Ahead: QuBi Courses in Summer & Fall 2015

**BIOL 470.83**
Summer Bioinformatics Workshop
Summer I
Professor Krampis

**CSCI 132**
UNIX & Perl Programming
Mon & Thu
Professor Stewart Weiss

**CSCI 232**
Relational Database & SQL
Tu & Thur
Professor Xie

**STAT 319**
Bayesian Methods in Sciences
Tu & Thu
Professor Mneimneh

**BIOL 375**
Molecular Evolution
Mon & Thu
Professor Qiu

MIT Quantitative Biology Workshop
January 2-9, 2015
Cambridge, MA

- Angelina Volkova (Chemistry; accepted as a Summer intern in MIT)
- Dalencourt Christian (Biology)
- Tom Hart (Biology)
- Baekdoo Kim (Computer Science)
- Dylan Sun (Statistics)
- Samuel Hosmer (Mathematics)
- Dr Saad Mneimneh (Faculty Lecturer; Computer Science)
- Dr Weigang Qiu (Faculty Advisor, Biology)

MIT Workshop Alumni

<table>
<thead>
<tr>
<th>Year</th>
<th>Name</th>
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<th>Year</th>
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<th>Name</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Geoffrey Rice (CS)</td>
<td></td>
<td>Yaroslav Melnyk (Math)</td>
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<td>Anna Feitzinger (Chem)</td>
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<td>Nanda Mijola (Stat)</td>
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<td></td>
<td>Kathleen McGovern (Math)</td>
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<td>Joan Marc (CS)</td>
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<td>Daniel Packer (CS)</td>
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<td>Raees Rahman (Bio)</td>
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<td></td>
<td>Pedro Pagan (Bio)</td>
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<td>Clara Ng (CS)</td>
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<td>Linda Huang (CS)</td>
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<td>Girish Ramrattan (Bio)</td>
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<td></td>
<td>Prof. Dana Sylvan (Stat)</td>
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<td>Amardeep Singh (Bio)</td>
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<td>Akansh Verma (CS)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Prof. Ed Binkowski (Stat)</td>
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<tr>
<td>2011</td>
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<td>2013</td>
<td></td>
<td>2014</td>
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</table>
Quantitative Biology Labs at Hunter & Neighbors

Dr Akira Kawamura (Chemistry): Chemical genomics & communications between microbes and plants | Dr Mandé Holford (Chemistry): Venom arsenal of marine invertebrates | Dr Saad Mneimneh (Computer Science): Algorithms for biological problems such as RNA folding & identification of toxin in corn snails | Dr Lei Xie (Computer Science): Structural & systems biology | Dr Konstantinos Krampis (Biology): Cloud-based bioinformatics infrastructure | Dr Weigang Qiu (Biology): Microbial pathogen genomics, evolution & informatics | Dr Levi Waldron (School of Public Health): Biostatistics and R tool development | Dr Joao Xavier (Memorial Sloan Kettering Cancer Center, Computational Biology Group): Experimental and systems evolution of microbial pathogens | Dr Olivier Elemento (Weil Cornell Medical College, Institute for Computational Biomedicine: Cancer genomics & precision medicine.

About QuBi

Background. In 2003 the National Research Council published BIO2010, a report that recommends replacing the traditional model of undergraduate biology curricula with a “strong interdisciplinary curriculum that includes physical science, information technology, and mathematics.” Hunter College was one of the nine awardees of a NIH/NIGMS/MARC program during 2008-2013 to transform undergraduate biology curricula. Today, QuBi mission continues with support from Hunter Administration and the four participating Departments.

Program Highlights

- Five Bioinformatics Concentrations. We have designed and implemented five new bioinformatics concentrations in Biology, Computer Science, Chemistry, Mathematics, and Statistics. Course requirements for the five concentrations are available at QuBi website. Watch what students and faculty say about QuBi.
- Over Twenty New & Revised Courses and Lab Modules. We have designed and implemented six new quantitative biology courses and revised over twenty existing courses. Each year, over two thousand Hunter students are exposed to quantitative biology & bioinformatics through these revised courses.
- Wiki Syllabi of new and revised courses and modules: •BIOL 425 Computational Molecular Biology (QuBi capstone course; course wiki) •BIOL 470.83 Summer Bioinformatics Workshop (course wiki) •BIOL 203 Molecular Genetics; Lab 4 (module wiki). •BIOL 203 Lab 7 (module wiki) •BIOL 303 Cell Biology (module wiki)

QuBi Advisors

- Dr Saad Mneimneh <saad@hunter.cuny.edu> (Statistics)
- Dr Lei Xie <lei.xie@hunter.cuny.edu> (Computer Science)
- Dr Akira Kawamura <akawamur@hunter.cuny.edu> (Chemistry)
- Dr Weigang Qiu <weigang@genectr.hunter.cuny.edu> (Biology)

Former Advisors & Administrator

- Ms Veronica Lichman (Mathematics, 2008-2014)
- Dr Virginia Teller (Computer Science, 2003-2013)
- Dr Dana Sylvan (Mathematics & Statistics, 2008-2015)
- Dr Makram Talih (Statistics, 2003-2007)
- Dr Ronald Neath (Statistics, 2010-2014)
- Dr Adrienne Alaie (Biology, 2003-2012)