

UMMS Career Ladder Matrix

Bioinformatician Job Family

Job Title	Bioinformatician	Bioinformatician II	Bioinformatician III	Sr Bioinformatician
Job Code	MC2200	MC2201	MC2202	MC2203
Pay Grade	72	73	74	75
<b>Position Summary</b>	Under the direction of a member of the faculty, the Bioinformatician is responsible for the design, development, evaluation and iterative modification of a technical infrastructure to expedite the quantitative evaluation of data resulting from studies that are laboratory based. The position will entail the establishment and maintenance of applicable in-house bioinformatics resources and interaction with individual lab members on customized research projects, as well independent projects that are the solely computational.	Under the direction of a member of the faculty, the Bioinformatician is responsible for the design, development, evaluation and iterative modification of a technical infrastructure to expedite the quantitative evaluation of data resulting from studies that are laboratory based. The position will entail the establishment and maintenance of applicable in-house bioinformatics resources and interaction with individual lab members on customized research projects, as well independent projects that are the solely computational.	Under the direction of a member of the faculty, the Bioinformatician is responsible for the design, development, evaluation and iterative modification of a technical infrastructure to expedite the quantitative evaluation of data resulting from studies that are laboratory based. The position will entail the establishment and maintenance of applicable in-house bioinformatics resources and interaction with individual lab members on customized research projects, as well independent projects that are the solely computational.	Under the direction of a member of the faculty, the Bioinformatician is responsible for the design, development, evaluation and iterative modification of a technical infrastructure to expedite the quantitative evaluation of data resulting from studies that are laboratory based. The position will entail the establishment and maintenance of applicable in-house bioinformatics resources and interaction with individual lab members on customized research projects, as well independent projects that are the solely computational.
<b>Essential Functions /Scope</b>	<ul style="list-style-type: none"> <li>* Establish general bioinformatics resources for day-to-day use by members of the laboratory</li> <li>* In collaboration with a faculty member, generate customized programming solutions to improve user interaction with available bioinformatics resources</li> <li>* Assist in the implementation of programs for microarray analysis, high-throughput sequencing data analysis, cis regulatory motif identification, and multi-genome protein motif searches</li> <li>* Local establishment and customization of model organism genomic databases and tools for batch sequence analysis utilizing these resources</li> <li>* Interpret and present study results in support of laboratory members</li> <li>* Provide tabular and written summaries of approaches and analyses in a form suitable for inclusion in manuscripts or grant applications, as well as media for presentation at scientific meetings</li> </ul>	<ul style="list-style-type: none"> <li>* Implement and adapt programs for microarray analysis, high-throughput sequencing data analysis, cis regulatory motif identification, and multi-genome protein motif searches.</li> <li>* Independently develop, implement and maintain custom designed computational solutions relevant for ongoing lab-based projects.</li> <li>* Independently develop, implement and maintain computational methods for meta-analysis of data generated in the lab as well as publicly available data.</li> <li>* Independently execute a scientific computational project (e.g. a project that can result in a first author publication)</li> <li>* Local establishment and customization of model organism genomic databases and tools for batch sequence analysis utilizing these resources.</li> </ul>	<ul style="list-style-type: none"> <li>* Design and implement reusable bioinformatics analysis pipelines for processing next-generation sequencing, microarray, genomics, proteomics and chemogenomics data.</li> <li>* Integrate computational methods/pipelines with high performance computing clusters</li> <li>* Collaborate closely with PIs and their lab members on research projects including defining the scope of the collaboration, researching on the scientific topics and implementing the appropriate bioinformatics solutions that meet timelines</li> <li>* Participates in the oral presentation of all project findings and abstracts including participation in periodic project status meetings and presentation of final project deliverables.</li> <li>* Develop rapid prototypes and custom scripts for one-off type of analysis requests</li> <li>* Develop novel algorithms and integrated data visualization applications when existing software packages are not available or adequate</li> <li>* Properly document the procedures used in computational analysis and provide summary report of results suitable for inclusion in manuscript and grant applications</li> <li>* Develop custom databases and web portals for managing raw and processed experimental data</li> <li>* Provide bioinformatics training and workshops for analysis pipelines and in-house developed software applications</li> <li>* Coordinate and collaborate with other bioinformaticians, biostatisticians, information technology professionals, and interdepartmental project teams.</li> </ul>	<ul style="list-style-type: none"> <li>* Lead the design and implementation of reusable bioinformatics analysis pipelines for processing next-generation sequencing, microarray, genomics, proteomics and chemogenomics data. Ensure pipelines meet end-user needs and project timelines</li> <li>* Independently initiate and manage research collaborations</li> <li>* Participate in the oral presentation of all project findings and abstracts including participation in periodic project status meetings and presentation of final project deliverables</li> <li>* Closely follow the latest development in high-through technologies, pioneer in bioinformatics analysis on novel datasets and facilitate sharing of knowledge and best practices</li> <li>* Independently develop novel algorithms and bioinformatics applications when existing software packages are not available or adequate</li> <li>* Prepare scientific manuscripts and abstracts including primary authorship of bioinformatics research papers</li> <li>* Organize bioinformatics training and workshops for analysis pipelines and in-house developed software applications</li> <li>* Liaison with Information System department to ensure high performance computing needs for research are properly addressed</li> <li>* Mentor rotation and summer internship students and junior members in the group</li> </ul>
<b>Required Qualifications</b>	BS in computer science, or equivalent experience  0-1 year of related experience  Strong background in statistical methodology, software languages and computer systems (Perl, C++, R, MySQL, etc.). Experience in writing basic search algorithms and the ability to generate new algorithms and programs for custom data manipulation and analysis.	BS in computer science, or equivalent experience  1-3 years of related experience  Strong background in statistical methodology, software languages and computer systems (Perl, C++, R, MySQL, etc.). Experience in writing basic search algorithms and programs for custom data manipulation and analysis.	Master's degree in Computer Science, a related computational discipline, or equivalent experience 1-3 years of bioinformatics-related research experience  Proven research record such as co-authorship on peer-reviewed publications.□	Master's degree in Computer Science, a related computational discipline, or equivalent experience 3-5 years bioinformatics-related research experience  Proven research record such as co-authorship on peer-reviewed publications. Highly self-motivated and demonstrated ability to manage internal and external collaborations
<b>FLSA Status</b>	Exempt	Exempt	Exempt	Exempt
<b>Promotional Process</b>	<b>Requisition</b>	Requisition or In-family Promotion from Bioinformatician	Requisition or In-family Promotion from Bioinformatician II	Requisition or In-family Promotion from Bioinformatician III