

General Information Template for Academic Program Review

Degree Area and Level:

Ph.D in Bioinformatics & Computational Biology (CIP 26.1103)

Addressing UNC Tomorrow:

The Ph.D in Bioinformatics & Computational Biology degree program directly applies to UNC Tomorrow Recommendation 4.1.2 that states, “UNC programs, especially research programs, should be globally competitive to ensure that they are globally relevant and significant.”

Role of Program in Relation to State and Regional Needs:

According to the proposal, the Charlotte region “is well on its way to becoming a major biotechnology center in the state with the development of the North Carolina Research Campus (NCRC) at Kannapolis. The expertise provided by this program is critical in a wide range of biotechnology research problems and applications, from genomics to health care and beyond.” In 2005, the North Carolina General Assembly granted the request from UNC Charlotte for \$35 million to build a Bioinformatics building on their campus.

US Labor Department Analysis:

- *Summary* - The computer scientists and database administrator’s occupation is expected to grow 37 percent from 2006 to 2016, much faster than average for all occupations. Employment of these computer specialists is expected to grow as organizations continue to adopt and integrate increasingly sophisticated technologies. Job increases will be driven by very rapid growth in computer systems design and related services, which is projected to be one of the fastest growing industries in the U.S. economy.
http://www.occsupplydemand.org/OSD_UnitOfAnalysis.aspx?CLUSCODE=110B-11&ST=NC&PathNo=1
- *Summary Data* – Source: U.S. Department of Labor and America's Career InfoNet

Occupational Characteristics - North Carolina					
SOC Code	Occupation	Minimum Educ Level	2006-2016 Growth	2008 Wages	Self-Empl
15-1011	Computer and Information Scientists, Research	Doctoral degree	Faster than average	\$93,170	5.3%

Occupational Projections - North Carolina							
SOC code	Occupation	Employment			Average Annual Openings		
		Est 2006	Proj 2016	Change	Growth	Replace	Total
15-1011	Computer and Information Scientists, Research	358	442	23.5%	8	10	18

Wage Trends - North Carolina							
SOC Code	Occupation	Median Annual Wage					Change
		2004	2005	2006	2007	2008	2004 to 2008
15-1011	Computer and Information Scientists, Research	\$85,750	\$87,690	\$87,460	\$91,430	\$93,170	8.7%

Benchmarks for Wage Trends (all occupations)	2003	2004	2005	2006	2007	Change 2003 to 2007
North Carolina Median Wage	\$26,140	\$26,690	\$27,160	\$27,980	\$28,950	10.7%
North Carolina Mean Wage	\$33,270	\$33,960	\$34,460	\$35,520	\$36,900	10.9%
National Median Wage	\$28,140	\$28,770	\$29,430	\$30,400	\$31,410	11.6%
National Mean Wage	\$36,210	\$37,020	\$37,870	\$39,190	\$40,690	12.4%

Availability of Program Statewide (Enrollment and Degrees Awarded in Last 3 Years):

- *Public universities* – The program at UNC-CH was BOG approved on 11/09/07.

Enrollment			Academic Year						
			Fall 05	Spr 06	Fall 06	Spr 07	Fall 07	Spr 08	Fall 08
NCSU	Bioinformatics	PhD	45	40	40	36	39	35	34
UNC-CH	Bioinformatics and Computational Biology	PhD	N/A	N/A	N/A	N/A	N/A	N/A	1

Number of Degrees Awarded			Academic Year		
			2005- 2006	2006- 2007	2007- 2008
NCSU	Bioinformatics	PhD	6	7	9

- *Private universities* – The data below was found on the Duke University Graduate School website for their Ph.D in Computational Biology & Bioinformatics.

<http://gradschool.duke.edu/about/statistics/admitbgt.htm>

			Academic Year			
			2005-2006	2006-2007	2007-2008	2008-2009
Duke University	Enrollment		20	26	28	18
	Number of Degrees Awarded		N/A	1	2	N/A

Available in Online or Distance Format from UNC institutions:

Not available.

Available or not from Academic Common Market:

Not available.

UNC Charlotte Campus enrollment and degrees awarded by similar programs:

(Based on two CIP digits – 26 CIP is the summary group for Biological and Biomedical Sciences under which Bioinformatics is listed as a program.)

Enrollment			Academic Year						
			Fall 05	Spr 06	Fall 06	Spr 07	Fall 07	Spr 08	Fall 08
UNC-C	Biology/Biological Sciences, General	PhD	25	22	23	22	24	26	29

Number of Degrees Awarded			Academic Year		
			2005-2006	2006-2007	2007-2008
UNC-C	Biology/Biological Sciences, General	PhD	4	3	2

Campus Average of enrollment and degrees awarded in this degree area:

(Based on two CIP digits – 26 CIP is the summary group for Biological and Biomedical Sciences under which Bioinformatics is listed as a program - over the last 3 Academic Years, Fall 2005-Fall 2008)

Campus Average			
	Number of Active Programs	Enrollment per Semester	Degrees Awarded per Year
ECU	8	12	1
NCSU	13	23	4
UNC-C	1	24	3
UNC-CH	14	55	8
UNC-G	1	7 in Fall 2008	N/A
UNC-W	1	11	1
Campus Average:		22	3

UNC Charlotte Campus Degree Programs added in the past three years:

- *Bachelor*
 - BA Special Education, General Curriculum (03/20/2009)
 - BS Systems Engineering (09/07/2007)
 - BS Respiratory Therapy (05/11/2007)
 - BS Public Health (03/16/2007)
- *Master*
 - MUD Urban Design (06/13/2008)
 - MA Latin American Studies (02/09/2007)
 - MS Bioinformatics (05/11/2007)
- *Doctoral*
 - PhD Nanoscale Science (01/12/2007)

UNC Charlotte Degree Programs discontinued in past three years:

- *Bachelor*
 - BA Special Education (03/20/2009)
- *Master*
 - MEd Special Education, Cross-Categorical Disabilities (03/20/2009)
 - MEd Special Education, behavioral-Emotional Handicaps (03/20/2009)
 - MEd Special Education, Mental Handicaps (03/20/2009)
 - MEd Special Education, Learning Disabilities (03/20/2009)
 - MEd Special Education, Severe and Profound Handicaps (03/20/2009)
 - MA Art Administration (03/20/2009)
- *Doctoral*
 - N/A