

Nano-Bio-Info-Cogno (NBIC) technologies

Description

Martin-Sanchez, F., & Maojo, V.. (2009). Biomedical Informatics and the Convergence of Nano-Bio-Info-Cogno (NBIC) Technologies. Yearbook of Medical Informatics

, 18(01), 134–142.

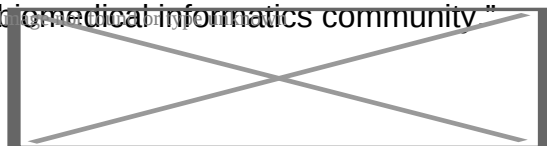
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"Objectives to analyze the role that biomedical informatics could play in the application of the nbic converging technologies in the medical field and raise awareness of these new areas throughout the biomedical informatics community"



Abstract

Objectives: To analyze the role that biomedical informatics could play in the application of the NBIC Converging Technologies in the medical field and raise awareness of these new areas throughout the Biomedical Informatics community.

Methods: Review of the literature and analysis of the reference documents in this domain from the biomedical informatics perspective. Detailing existing developments showing that partial convergence of technologies have already yielded relevant results in biomedicine (such as bioinformatics or biochips). Input from current projects in which the authors are involved is also used.

Results: Information processing is a key issue in enabling the convergence of NBIC technologies. Researchers in biomedical informatics are in a privileged position to participate and actively develop this new scientific direction. The experience of biomedical informaticians in five decades of research in the medical area and their involvement in the completion of the Human and other genome projects will help them participate in a similar role for the development of applications of converging technologies - particularly in nanomedicine.

Conclusions: The proposed convergence will bring bridges between traditional disciplines. Particular attention should be placed on the ethical, legal, and social issues raised by the NBIC convergence. These technologies provide new directions for research and education in Biomedical Informatics placing a greater emphasis in multidisciplinary approaches.

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Rebholz-Schuhman D, Cameron G, Clark D, van Mulligen E, Coatrieux JL, Del Hoyo Barbolla E, Martin-Sanchez F, Milanesi L, Porro I, Beltrame F, Tollis I, Van der Lei J. BMC Bioinformatics. 2007 Mar 8;8 Suppl 1(Suppl 1):S18. doi: 10.1186/1471-2105-8-S1-S18. PMID: 17430562 Free PMC article. Review.
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De La Iglesia D, Chiesa S, Kern J, Maojo V, Martin-Sanchez F, Potamias G, Moustakis V, Mitchell JA. Stud Health Technol Inform. 2009;150:987-91. PMID: 19745461
- [Cognitive and learning sciences in biomedical and health instructional design: A review with lessons for biomedical informatics education.](#)
Patel VL, Yoskowitz NA, Arocha JF, Shortliffe EH. J Biomed Inform. 2009 Feb;42(1):176-97. doi: 10.1016/j.jbi.2008.12.002. Epub 2008 Dec 24. PMID: 19135173 Review.
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