**Faculty Profile:** [**Hieu Bui**](https://engineering.catholic.edu/research-and-faculty/faculty-profiles/eecs/hieu-bui/index.html)

Assistant Professor

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Education: Ph.D., Computer Science, Duke University, 2017

**Research Interests and Expertise:**

DNA nanotechnology and molecular computing, information technology and digital storage systems, nanoscience and neural networks, biosensing and diagnostics, nanophotonics and optical computing, systems biology and synthetic biology, nanofabrication and simulation

**Biography:**

Hieu Bui joined the Catholic University of America in 2019 where he currently is an assistant professor in the Department of Electrical Engineering and Computer Science. Prior to joining the University, he was a research fellow at the U.S. Naval Research Laboratory in the Center for Biomolecular Science and Engineering. He received his Ph.D. in Computer Science from Duke University and his M.Sc. and B.Sc. in Electrical and Computer Engineering from Boise State University. His research interests are focused on researching and developing functional and intelligent computing systems for addressing engineering, health, and energy applications. His research work has been published in high impact peer-reviewed journals (i.e. Nature Nanotechnology, Nano Letters, JACS, ACS Synthetic Biology, ACS Nano, Small, New Journal of Physics), conferences (i.e. Foundations of Nanoscience, International Conference on DNA Computing and Molecular Programming, ISDRS, IEEE IRW) and book chapters. He is a recipient of the following prestigious awards: NAS-NRC Fellowship, NAS-NRL Publication Award, Outstanding Duke University Computer Science Ph.D. Award, Duke University Nanoscience Fellowship, Micron Scholar.

**Five Selected Papers:**

1. Bui, H.; Díaz, S. A.; Fontana, J.; Chiriboga, M.; Veneziano, R.; Medintz, I. L., Utilizing the Organizational Power of DNA Scaffolds for New Nanophotonic Applications. *Adv. Opt. Mater.* **2019,** *7* (18), 1900562.
2. Song, T.; Shah, S.; Bui, H.; Garg, S.; Eshra, A.; Fu, D.; Yang, M.; Mokhtar, R.; Reif, J., Programming DNA-Based Biomolecular Reaction Networks on Cancer Cell Membranes. *J. Am. Chem. Soc.* **2019,** *141* (42), 16539-16543.
3. Bui, H.; Brown III, C. W.; Buckhout‐White, S.; Díaz, S. A.; Stewart, M. H.; Susumu, K.; Oh, E.; Ancona, M. G.; Goldman, E. R.; Medintz, I. L., Transducing Protease Activity into DNA Output for Developing Smart Bionanosensors. *Small* **2019,** *15* (14), 1805384.
4. Bui, H.; Shah, S.; Mokhtar, R.; Song, T.; Garg, S.; Reif, J., Localized DNA Hybridization Chain Reactions on DNA Origami. *ACS Nano* **2018,** *12* (2), 1146-1155.
5. Bui, H.; Onodera, C.; Kidwell, C.; Tan, Y.; Graugnard, E.; Kuang, W.; Lee, J.; Knowlton, W. B.; Yurke, B.; Hughes, W. L., Programmable periodicity of quantum dot arrays with DNA origami nanotubes. *Nano Lett.* **2010,** *10* (9), 3367-72.

**Professional Activities**

* Member of International Society for Nanoscale Science, Computation and Engineering (2009-present)
* Co-Organized 2nd Mid-Atlantic DNA Nanotechnology Symposium, National Institute of Standard and Technology (2019)
* Co-Organized 13th Annual Conference – Foundations of Nanoscience – Self-assembled Architectures and Devices (2016)
* Peer reviewer for ISNSCE DNA Conference, FNANO Conference, ACS Family