The UPR High Performance Computing facility

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The UPR HPCf

- Shared resource for research computing in Puerto Rico
- Hosts PR-AABRE Bioinformatics Resource Center (BiRC)
- Hosts PR-EPSCOR Computational Nanoscience Resource Center (CNaRC)
- Hosts Puerto Rico's Internet2 GigaPOP
- 4 full time staff

HPCf aims

- providing high-performance computing tools and technical support
- establishing research collaborations with biomedical, computational and mathematics researchers
- developing new courses and educational materials in computational sciences, statistics and bioinformatics in collaboration with faculty
- promoting advanced networking between PRAABRE member institutions, to enable collaborative research on and off the island

BiRC Computing Resources

- nanobio.hpcf.upr.edu – x86_64 SMP Cluster
  - 60? nodes with:
    - 1000+ core x86_64 processors
    - 3+ TB RAM
    - 45 TB storage
    - 1 and 10 Gigabit Ethernet

      - Upgrades coming soon!

Internet2 Infrastructure

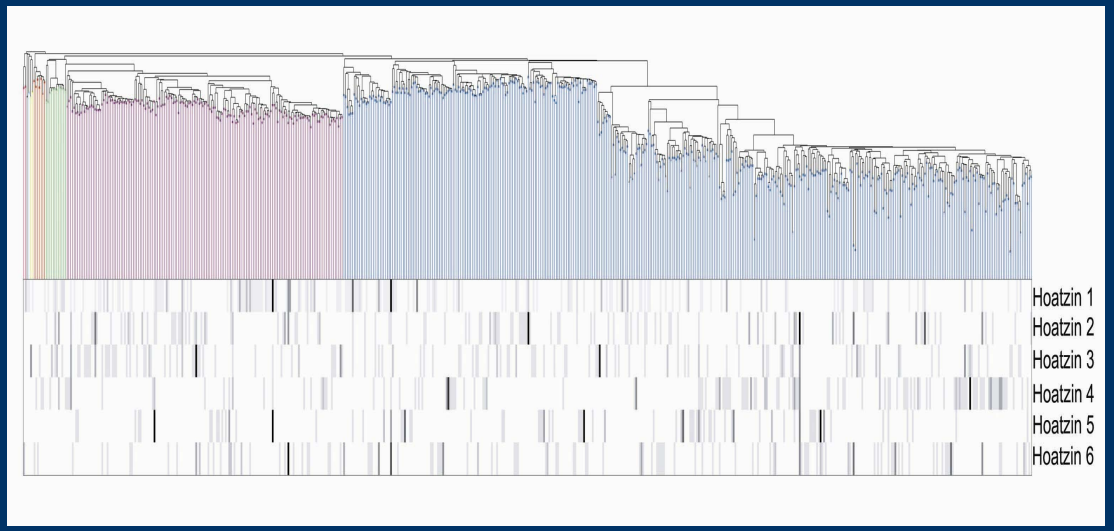
- 300-500 Mbps Connections to UPR-RRP, UPR-RCM, UPR-RUM
- 100 Mbps Connection to UPR-CUH
- 45 Mbps Connections to smaller UPR campus
- UPR Core routers, HPCf Core connected at Gigabit Ethernet.
- Upgrades coming soon!

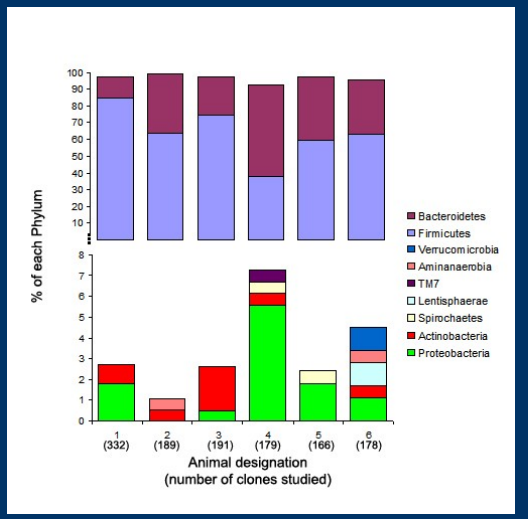
Collaborations

A B

Metagenomics

- Collaboration with Filipa Vitorino.
- Created custom scripts, custom server

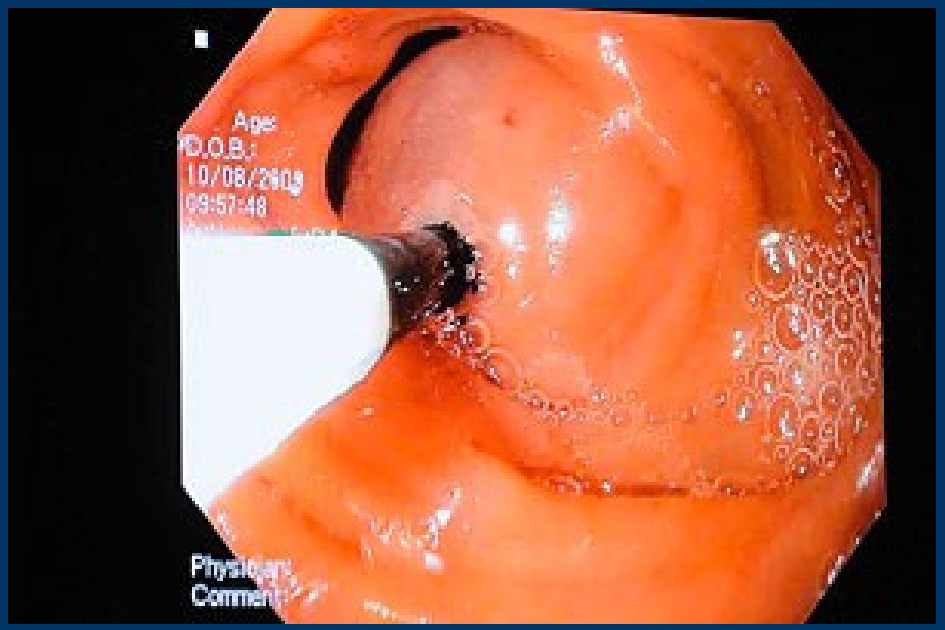




http://dx.doi.org/10.1128/AEM.00574-08

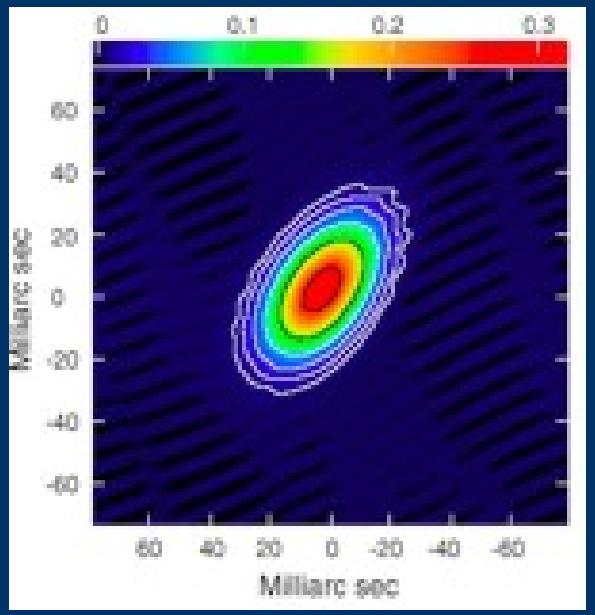
RCMI – Internet2 collaboration.

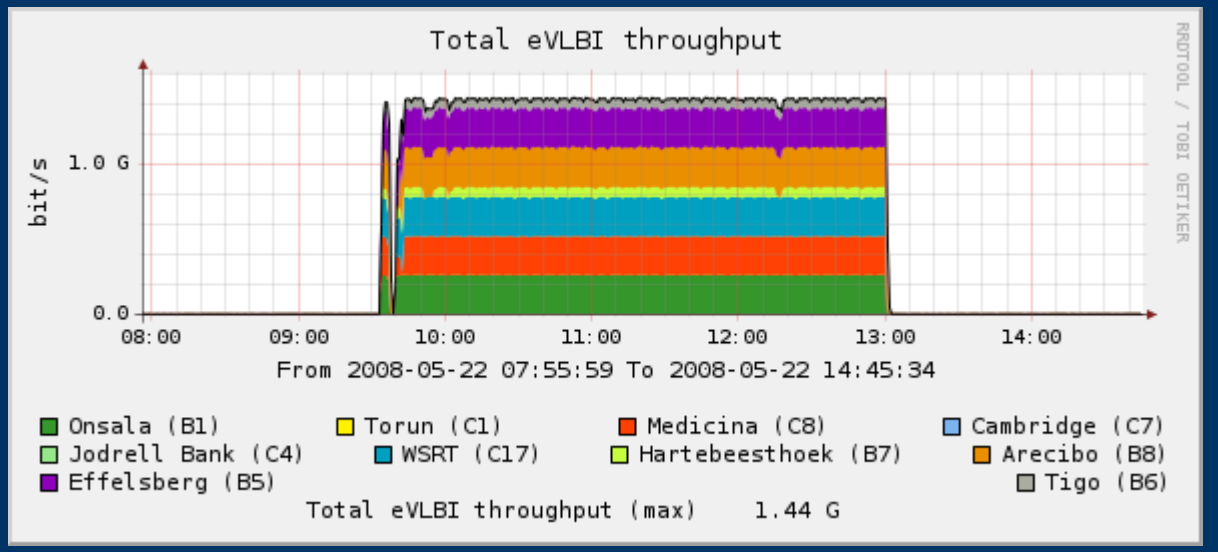
- Transmission of High Definition Endoscopic Procedures Live via Internet2.



Arecibo – Internet2 collaboration.

- Electronic Very Long Baseline Interferometry.
- First four-continent eVLBI, May 2008.





Scientific Programming

- The HPCf has two scientific programmers on staff.
- Currently working on two projects:
  - RT-PCR, metabolomics, proteomics database and software with the INBRE core.
  - Scanmoment – a protein sequence analysis tool, with Dr. Steven Massey.