

## Howard Powell

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**EDUCATION**     *BA - Astronomy*                      University of Virginia                      1998 - 2005  
                         *CIO Leadership Academy*              SUNY SAIL Institute                      Spring 2019

**WORK EXPERIENCE**     *Director of Information Technology*                      2021 - Present  
Lighthouse Instruments

- Lighthouse Instruments has experienced exponential growth during the pandemic, and I was asked to come back to help align their IT practices with the needs of a rapidly expanding company.
- Finalized the transition to a new building including network design and installation, updating of legacy computer platforms and applications, and debugging issues with a \$8M building.
- Led a project to integrate a remote office in Amsterdam, NL with our computer network here in Charlottesville via Wireguard, including integrating their network devices and users into the company Active Directory.

*Technical Director of Research and High Performance Computing* 2016 - 2021  
Colgate University

- Charged to launch and lead a new Research Computing support group. Responsibilities include creating and maintaining budget projections for research computing hardware and infrastructure.
- Focus on building bridges with researchers to better understand their needs and trends in research, and work with other IT personnel to develop the skills and technology to make that research possible.
- Work closely with the ITS infrastructure team (network engineers and system admins) to plan and develop upgrades necessary for HPC on campus, such as internet bandwidth and shaping, 10 gig+ campus network design, storage, etc. Took over as project lead after the departure of our previous CIO to re-join campus to I2, a research specific network between universities and education/research-focused campuses.
- Work closely with faculty to help plan the research process, identify computer-related problems, and to plan and implement solutions. E.g. - hardware procurement, life cycle storage of research data, and backup and disaster planning.
- Developed and maintain CentOS 8 Linux Kickstart image customized for research at Colgate, used for both research and infrastructure (e.g. Linux servers) across campus.
- Maintain multiple Beowulf HPC clusters at the department and campus levels, including design, procurement and installation of new clusters and upgrades, software installation, queue management and integrating these HPC systems into our campus Active Directory.
- Designed and developed a research-oriented VMWare ESXi cluster with enterprise-class FC-SAN storage, fail over and high availability which has been heavily utilized by research projects with specific needs not covered by a standard desktop or laptop.
- Co-chaired the Campus Information Security Matrix Team during transition between CISO personnel to continue work and projects, and transfer of knowledge to the new hire.

- Completed a NIST 800-171 security assessment of Research Computing assets.
- Continuously advocate for the development of skills in cutting edge technologies for my group and my co-workers including launching a skunkworks initiative to investigate and explore new and exciting emerging technologies.

*Volunteer* 2020 - 2021  
Hamilton Theater

- Stepped in as a volunteer when the local movie theater (built 1895, renovated 2019) lost all technical projector personnel to keep the theater running.
- Setup and configured a PCI compliant local network.
- Helped re-calibrate and re-engineer a Crestron control system left incomplete after renovations in 2019.
- Recalibrated sound and video equipment for the best movie experience.
- Load and setup first run films such as Star Wars IX, Knives Out and Little Women.

*System Administrator* 2012 - 2016  
Lighthouse Instruments

- Responsible for the design and maintenance of the computer network for an international company with locations in Charlottesville, VA and Amsterdam, NL.
- Handled procurement and inventory of all IT assets and the planning, design and vision for a rapidly growing IT infrastructure.
- Planned and implemented an Asterisk PBX VOIP solution.
- Developed a Samba 4-based Active directory domain for 60 Windows XP, 7 and 10 computers including implementing remote management, Group Policy, imaging and centralized Authentication.
- Developed and maintain PF-based firewall on OpenBSD (500+ rules).

*System Administrator* 2012  
MusicToday

- Documented multiple music-oriented merchandise and ticketing platforms for an independent division of Ticketmaster/Live Nation Entertainment.
- Implemented a Phone-Factor authentication system to meet PCI standards.
- Reverse-engineered with zero downtime a LAMP ticketing platform that all documentation, including passwords, had been lost.

*Unix Computer Administrator* 2002 - 2012  
Astronomy Department, University of Virginia

- Provided Tier 3 and network engineering support to an academic and research oriented department.
- Customized a unattended deployment system for both Redhat Linux and Windows XP/7 clients.
- Developed and maintained a 576 processor Linux based parallel HPC cluster.
- Perform data recovery on failed hard drives and USB flash disks.
- Planned and implemented an LDAP database, including the migration of NIS user tables and integrated various services into LDAP structure.
- Developed and maintain various servers including email (Postfix), web (Apache), and directory services (OpenLDAP).

- Designed a VM solution for multiple servers including VPN, iSCSI and ssh remote services.

**PUBLICATIONS AND PRESENTATIONS** **Powell, H.** (2011). How to Build a Beowulf HPC System Using the FedoraLiveCD Project. Linux Journal, issue 208, pages 64-68.  
**Powell, H.** (2012). ZFS and Btrfs: A Quick Introduction to Modern Filesystems. Linux Journal, issue 218, pages 104-111.  
**Powell, H.** (2017). Next-gen Filesystems Overview, ZFS, Btrfs and ReFS. Session presented at NYSErNet Conference, Syracuse NY.