IAS | INSTITUTE FOR ADVANCED STUDY

Computing Annual Report

2025-2026 Academic Year

December 11, 2025

https://www.ias.edu/computing/

Introduction

Thank you for taking a few moments to review this report. The goal of this annual report is two-fold. First, it serves as documentation of important changes and improvements to the Institute's technological infrastructure and its technology team. Second, it aims to demonstrate the significant work involved in planning, implementing and supporting the IT services necessary for conducting research at the highest levels. The work included herein, past and future, is the product of the Institute's robust IT strategic planning effort. The Strategic Planning Committee for Computing (SPC) is the primary vehicle for this discussion. The SPC also receives regular guidance from other stakeholders across the institution, including the Faculty Committee on IT, the Director's Office, school Administrative Officers, individual faculty, members and staff, and outside experts. This collaborative approach helps to best identify, plan for and prioritize these solutions effectively. More information about IAS Computing's strategic goals is discussed in the sections below.

Although this report highlights initiatives currently underway or recently completed, IAS Computing provides a comprehensive catalog of IT services and support. All campus technology consumers are encouraged to review the entire catalog online and familiarize themselves with all of the resources and services available to aid their research and work and enhance their experience on campus. Please see the IAS Computing Service Catalog (https://www.ias.edu/computing/services).

As noted above, your input and feedback are welcomed. If you have any questions or suggestions regarding the content of this report, or about IT services at IAS in general, please do not hesitate to reach out to a member of the team.

2024-2025 Year in Review

Organizational Structure, Personnel, and External Resources

- **IAS Computing Strategic Plan.** To serve as a guide for the coming years, and to best incorporate the recommendations from last year's external review of IAS Computing, a new strategic plan was completed this year. The plan outlines the key objectives and initiatives that will direct the Computing team for this and future years. Many aspects of these initiatives already in progress are detailed in the two sections of this annual report.

- **Interns and Summer Students.** As in past years, the entire IAS community benefitted from the hard work of several interns and summer students who assisted the IAS Computing team. This past year, we are grateful for the contributions made by Martin Becak, Sebastian Coste, Amir Farhang, John Vizhco-Leon, and Brandon Martinez to assist the IAS Computing staff in achieving many of the goals and milestones described herein.

Information Security, Business Continuity and Disaster Recovery

- **Enterprise Storage Upgrade.** The Institute's enterprise storage environment was fully upgraded this past year, providing additional capacity, as well as significant improvements to performance and business continuity. Achieving a long sought-after goal, scholar and staff data is now available from both campus datacenters, significantly lessening the likelihood that these

critical resources are taken offline by campus disruptions such as power outages or cooling failures. Alongside this work, similar improvements were made to the Institute's virtual server infrastructure to leverage these new capabilities, and also ensure that IT services are equally as resilient in the face of campus failures.

- **Campus Firewall Upgrade.** The enterprise firewall which protects the campus and its IT resources from Internet threats was upgraded this past year. The refreshed system offers improved performance, better analytics and telemetry, and a leaner ruleset. This work has also allowed for the restructuring of the network layout for Internet-connected services to align them with evolving best practices.

- **CISA Cyber-Hygiene Project Scanning.** To supplement our awareness and readiness for dealing with cyber threats, the Network Administration team has begun leveraging the CISA's Cyber Hygiene Project as an additional external vulnerability scanner for our resources. These regular reports provide system administrators with better insight into the resiliency of their systems, and improve the campus' overall posture for preventing system compromise.

- **Email Security Improvements.** In addition to the perimeter security improvements described above, attention was also paid to improving email security this past year as well. The main vehicle for this was the implementation of a new set of tools provided by our email security platform, Proofpoint. These tools help to protect users by scanning links embedded in emails, and intercepting attempts to access known-bad sites across the Internet. This represents an additional layer of protection on top of the already robust anti-phishing protections in place. Users are encouraged to continue to report suspicious emails to phish@ias.edu, so they can be properly analyzed and neutralized.

- **Single Sign-On Expansion.** Efforts also continued this past year to expand the reach of our single sign-on platform to cover more services. New additions included the Albert repository, access to Research.gov, and the Albourne system.

- **Certificate Audit and Automation.** In preparation for the industry-wide shift towards short-duration certificates, Computing completed an audit of our environment to assess our exposure. Work also began to build the infrastructure to automate the creation and replacement of certificates on servers and network services, ensuring continuity when shorter-duration certificates become required.

Infrastructure

- **Datacenter Planning.** An intensive analysis of options for sufficient datacenter resources to meet the future needs of the Institute was conducted this past year. Building on the findings of that work, and partnering with IAS Facilities, planning was completed to begin a construction project in the coming months to upgrade the Bloomberg Hall C4 (BBC4) datacenter. The expansion will add approximately 150 kW of power to the space. The plan also calls for upgrades to the cooling infrastructure, including support for direct water-cooling of racks, which is needed for advanced high-performance computation.

- **Emergency Power Generator.** The long-awaited emergency power generator arrived on campus this past summer, and work is ongoing to facilitate its operation. Trenching work to connect IT resources in Bloomberg Hall and Fuld Hall has been completed, and the generator is expected to be online this fall. Once operational, the generator will help safeguard high-performance computing resources from being impacted by frequent power disruptions.

- **McBride Hall Connectivity.** In conjunction with the temporary relocation of the Historical Studies-Social Science Library to McBride Hall on the ETS campus, the Network Administration team connected this space to the Institute network, including extending our wifi networks to the space. The Information Technology Group also worked to relocate the library's electronic resources and staff systems.

- **Gödel Lane Townhomes.** The construction of the second set of townhomes on Gödel Lane was completed this past year, including their connection to the IAS network, and the installation of elevator telephones to service these units.

- **Simonyi Hall Server Room Cooling.** A replacement of the aging cooling system in the Simonyi Hall Server Room was also completed this past spring. This upgrade stabilized the cooling in the space which hosts many services leveraged by the School of Mathematics, and ensures inadequate operating conditions will no longer disrupt these services.

- **Network Upgrades.** As in all years, lifecycle management and equipment refresh for a portion of the campus network were completed. The past year's work focused mainly on upgrades to our network related to the enterprise storage and firewall upgrades noted earlier, as well as the remote connectivity to ETS and faculty housing.   The campus wireless network was also upgraded this year, with nearly one half of all access points being replaced with newer, faster and more powerful models.

Administrative Computing Environment

- **Nelson Center for Collaborative Research (NCCR).** Computing staff have been active in both planning for the technology support needed by the NCCR, as well as beginning to deliver on those plans as the center has taken shape this past year. Planning is expected to continue in the upcoming year, as the construction of the NCCR's dedicated space above the HS-SS Library begins.

- **Additional AI Tools.** GitHub Co-Pilot and Grammarly were added this past year to the AI Toolkit available to all IAS Scholars and staff. Such tools are regularly being evaluated, and Computing staff are engaging directly with scholars and administrators to identify other valuable tools for consideration. A complete listing of available AI Tools is found on the Computing website (https://www.ias.edu/computing/aitools).

- **Live Event Interactivity.** Working with event organizers, Computing deployed Vevox as a tool to improve accessibility and manage public event interactivity more effectively. Vevox can manage interactive Q&A sessions, produce polls and more, allowing event facilitators to best manage the flow of questions and maintain audience engagement. The tool was successfully

used many times this past year, including each showing of the IAS Film Series.

World Wide Web, Campus Databases and Data Integration

- **P3 Database Improvements/Member Onboarding.** Major changes were implemented within the P3 system this past year, including a new, more manageable interface for adding and viewing visits, which also did away with the deprecated concept of visit archiving. In addition, new technology was put in place to provide long sought-after, greater flexibility around the creation and use of scholar types. The system's menus were reorganized to be more efficient, and improvements were also made to reporting tools and integrations. The Member Onboarding system was also updated to collect information needed for the Faculty and Members publication, as well as temporary information related to the library relocation.

- **IAS Website.** Development of the IAS website continued at its normal, brisk pace this past year, with new functionality being added to several sections, and planning work being completed for the impending upgrade to Drupal 11. Highlights from this past year's work include a new presence for the Nelson Center for Collaborative Research, improvements to the iCal feeds for seminar series, updates to the menu structures for mobile device browsing and improved protection for the software supply chain related to the site.

- **Digital Accessibility Improvements.** In addition to the above, work also continued on implementing improvements to digital accessibility, ensuring that the Institute's website produces Web Content Accessibility Guidelines (WCAG) compliant pages. This also dovetails with the integration of the Editoria11y tool into the site's content management system to better alert content creators to WCAG improvements which should be made to their submissions. The Software Engineering team has also begun a project to carry these efforts through their other custom software applications, including the IAS Directory and more.

High-Performance Computing (HPC)

- **H200 GPU Processors Added.** The Apollo cluster was expanded this past year with 16 H200 GPUs, bringing the total number of GPUs available to 32. For a full technical overview of the updated Apollo nodes, please visit the Apollo website (https://www.ias.edu/computing/apollo-gpu-nodes).

- **High-Performance Cloud Computing.** This past year, SNS Computing also continued to provide access and support to scientists looking to pursue cloud-based HPC resources. Projects were completed on both Google Cloud Platform and Amazon Web Services (via Camber Cloud).

As a reminder, all of the Institute's HPC systems are available for all IAS scholars to utilize. Full documentation on leveraging these new systems is available on our website (https://www.ias.edu/computing/high-performance-computing).

Digital Scholarship at IAS (DS)

Support for scholars working in the field of digital scholarship and efforts to increase awareness of these activities, also continued in the last academic year. Some of those highlights include:

- **Albert Updates.** Albert, the Institute's open-access digital repository, was expanded this past year, adding several new scholar collections and reorganizing existing ones. Improvements were also implemented to system integrations, including with the ORCID platform.

- **DS Conversations.** The DS@IAS group also completed curation of another year of compelling webinars highlighting unique DS-based projects, and surfacing topical discussions relevant to digital scholars working today. Please visit the DS@IAS website for a complete list of events (https://www.ias.edu/digital-scholarship/events_ias).

Media Technology Services (MTS)

- **Wolfensohn Hall Audio.** Following last year's lighting improvements, the audio system in Wolfensohn Hall received its first major upgrade in almost two decades. This entailed the installing new speakers, microphones, and receivers, reconfiguring sound management for the hall, and improving to the assisted listening system. These upgrades help to transform the space into a multi-purpose lecture and performance hall capable of supporting the broad range of events planned for IAS in the coming years.

- **Simons Hall Audio.** Continuing with audio updates, the audio capabilities of Simons Hall were also improved and expanded this past year, through the installation of new microphones and receivers. The space now supports up to four simultaneous microphones.

- **Simonyi Hall Classroom.** Working with IAS Facilities, the Simonyi Hall Classroom (S-114) was upgraded to serve as an additional hybrid meeting space, including new display hardware and the deployment of a Zoom Room.

- **Zoom Administration.** The Media Technology Services team also continued to provide management, oversight and training for the Institute's heavy use of the Zoom platform, and sustained reliance on hybrid and online events. Training was also provided this year for event organizers on best practices for reducing the risk of Zoom meeting disruptions and unwanted attendees.

Training Highlights

Computing works with internal and external partners to curate information technology-based training opportunities for the community throughout the year. Some highlights from last year included:

- **Information Security Awareness.** Brian Epstein, the Institute's Chief Information Security Officer, again curated a rich curriculum of information security trainings for the IAS community throughout the year. This included the traditional training sessions held each

October for scholars and staff, as well as members of our extended community. Additionally, helpful training and blog postings about current events are regularly published on the IAS Security website (https://security.ias.edu).

- **Digital Travel Safety Tips.** Staff from IAS Computing also conducted several seminars this past year to educate scholars and staff on strategies and best practices for information security related to international travel. These well-attended sessions offered tips on reducing the amount of data you are traveling with, leveraging loaner devices and more.

- **MS Office Training.** Computing partnered with Human Resources to help facilitate beginner and advanced training for staff in MS Word and MS Excel this past year.

- **LinkedIn Learning.** Through an enterprise licensing agreement, the Institute offers all users access to the full library of online training courses available on LinkedIn Learning. For access, please visit LinkedIn Learning (https://www.linkedin.com/learning/login-ent).

The Computing team is committed to providing a comprehensive range of IT services and high-quality support to the Institute's scholars and staff. The projects described above demonstrate our commitment to meeting this standard in the previous academic year.

2025-2026 Goals and Objectives

This section will outline our plans and priorities for the 2025-2026 academic year. The group will be working closely with campus partners on important construction projects including the upgrade of our primary datacenter and completing the generator installation. At the same time, the team will remain diligent in refreshing and modernizing the IT infrastructure, while also focusing on organizational improvements in areas such as IT governance and information security.

The details of these efforts are outlined in the section below. Please note that this is not an exhaustive list of all the work to be completed this year, but rather a selection of highlights and major initiatives. If you feel something important has been omitted, please be in touch with your Computing representatives.

Infrastructure

- **BBC4 Datacenter Upgrade.** Following the exhaustive analysis completed this past year, work will begin on the reconstruction and expansion of the Bloomberg Hall C4 datacenter. This work, expected to take 18-24 months to complete, will equip the space with the power and cooling infrastructure needed to support our HPC efforts for the next 10-15 years. Leveraging available expansion space, shrewd planning and improved service continuity plans, it is anticipated that there will be very few disruptions to IT service during this construction phase.

- **BBC4 Generator.** Another major improvement for the BBC4 datacenter will be the completion of installing an emergency power generator for the space. This will provide emergency power to the IT equipment, as well as the HVAC plant, ensuring that the datacenter

remains viable even when the rest of the campus is without power. The generator will also support backup power for critical IT, telecommunications and HVAC gear in Fuld Hall and West Building, which are also essential for keeping the campus network online at all times.

- **The Future of Campus Email and Collaboration Tools.** With datacenter plans cemented, IAS Computing will turn its attention to another major project this year: evaluating, selecting and beginning the implementation of a new platform for IAS-provided email service, personal calendaring and contact management. The selection process will involve input from many campus audiences, consultation with administrative and academic IT governance bodies and a comprehensive technical review from the email administration team. Updates on the progress will be provided throughout the year.

- **Campus Wireless Network Audit.** The Network Administration team has engaged Velaspan, Inc. to conduct a survey of wireless network availability and connectivity across the academic and housing campuses, as well as much of the outdoor, common space. The audit, expected to be completed this fall, will guide plans for upgrade, expansion and improved reliability of this critical network resource throughout the remainder of the year.

- **Short-term Academic Housing Renovations.** Network Administration will also be working to support the IAS Facilities team as they complete the project to renovate the Short-term Academic Housing units this year.

Information Security, Business Continuity and Disaster Recovery

- **Offsite Data Storage Upgrade.** In the wake of last year's successful upgrade of the on-campus enterprise storage facility, this year will see Computing staff focus on the data storage system that provides offsite, private-cloud backup for our critical data. This system, located in Norristown, PA, provides protection for modern data storage threats, such as disk failure, data corruption and ransomware attacks.

- **Web Application Firewall Implementation.** This year, the continuing focus on ensuring adherence to best practices for securing our critical systems will focus on the implementation of application firewall technology for our on-campus applications. This technology provides an additional layer of safety and control for these important systems, without interfering with usability. This process is anticipated to be transparent to users of these tools.

High Performance Computing

- **On-Premises HPC Expansion.** Planning will begin this year for the procurement of the next on-premises HPC cluster, which is expected to come online at the completion of the datacenter construction next year. The IAS Computing HPC team will be working closely with stakeholders to determine the optimal configuration for this new platform and begin the process of working with vendors to identify the best system candidates.

- **HPC Partnerships.** Simultaneous with the on-campus expansion plans, IAS will continue to

evaluate and identify beneficial opportunities to expand the access to HPC resources for our community through local, regional or national partnerships. Should such partnerships emerge, information will be shared within the Institute.

Administrative Computing Environment

- **IT Governance.** As the scope and scale of the projects IAS Computing is confronting continues to grow, it is critical that planning, prioritization and needs assessments are being conducted comprehensively. To achieve this, a goal for this year is to improve the process of governance around these decisions, ensuring that administrative, academic and technical voices are all included, and that each constituency's unique needs are considered when developing project plans and making final decisions.

- **Access to AI Tools.** Computing is committed to providing access to, and supporting scholars using, AI tools to benefit their work and their scholarship. Throughout the year, the group will be evaluating and making available AI tools that benefit the IAS community. If you have a specific need, please communicate that to your IT Helpdesk. To view a current list of tools, please see the AI Tools page (https://www.ias.edu/computing/aitools)

World Wide Web, Campus Databases and Data Integration

- **Web Application Accessibility Improvements.** The Software Engineering team will remain focused this year on ensuring that custom-developed software is updated to comply with the Web Content Accessibility Guidelines (WCAG) 2.0 standard, wherever possible. The work will be prioritized based on applications with the largest user bases to those with the smallest. Computing will also be hosting several training webinars related to WCAG compliance for content creators.

- **"Add to Calendar" Functionality on IAS Website.** The ability to add an individual event, or event series, to your calendar directly from the Institute's website will be added this fall. This will initially be accomplished through an integration with AddEvent, a platform that specializes in calendaring.

- **Software Prototyping/Testing Improvements.** As always, Software Engineering is dedicated to developing their systems using the most efficient and safest methodologies available today. This year, leveraging the Tugboat QA platform, improvements will be made to the process enabling faster prototyping and more secure, higher-quality unit testing as part of the standard software development lifecycle.

- **P3 System Improvements.** Software Engineering will be working this year to open access for administrators to scholar data from within P3. This work will streamline administrative data management by incorporating fields which scholars enter within UpdateMe into the standard P3 interface. The group will also be pursuing additional feature improvements within P3, guided by input from a committee being formed to help steer the development of the system moving

forward.

Digital Scholarship at IAS

- **Supporting Faculty-led Projects.** DS@IAS will continue to provide support for projects being led by IAS faculty in the Schools of Historical Studies and Social Sciences. For a complete list of projects underway, please visit DS@IAS on the website (https://www.ias.edu/digital-scholarship).

- **Albert, the IAS Digital Repository.** Albert will undergo another upgrade, this year moving to DSpace-CRIS version 9.1. The exact schedule is still being determined, but the work is expected to be completed this spring. Those interested in participating in the Albert project can contact the Albert Admin team. Access Albert online (https://albert.ias.edu).

- **Digital Scholarship Conversations Series.** The Digital Scholarship Conversations seminar series will continue virtually again this academic year. The curriculum will include training sessions related to DS-concepts and tools and the typical presentation of DS projects by faculty and visiting scholars. The schedule for this year's talks can be found online (https://www.ias.edu/digital-scholarship/events_ias).

Media Technology Services

- **Nelson Center Planning.** As the construction of the Nelson Center space begins over the HS/SS Library, the MTS team will also be working with Cerami & Associates to plan and design the audio/visual infrastructure for these new spaces. The team will be meeting with stakeholders and collecting input and feedback on the vision for the design, as well as working to identify and model the technical components.

- **Bloomberg Lecture Hall Update.** This coming year, the Lecture Hall in Bloomberg Hall will be the main focus of the MTS team's upgrade attention. This important space will receive updates to its audio and video systems, as well as updates to the cameras and hybrid event technologies. These upgrades are anticipated to take place this coming summer.

- **Simonyi Hall Lecture Room Update.** Improvements to the audio system in the School of Mathematics' primary lecture will be completed.

- **Zoom Administration/Hybrid Meeting Space Design.** MTS staff will also remain committed to supporting the campus's use of Zoom for remote and hybrid meetings, as well as to designing and improving campus spaces for hybrid events. New hybrid meeting spaces are planned in D Building, and improvements are anticipated in West Building and Bloomberg Hall as well.

Conclusion

Thank you for taking the time to review the extensive work completed by IAS Computing this past

year, as well as the projects being conducted this coming year. Each of these efforts is carefully planned and executed to minimize impact on campus IT consumers, while maximizing benefits and new features.

The process of planning and delivering IT services to the Institute community is most effective when it is collaborative. IAS Computing aims to promote discussions about technology and its effects on your scholarship, work, and our community at the Institute. If there are projects or services not mentioned in this report that you believe should be a focus of the Computing group this coming year, please share your thoughts and speak with a member of the Computing staff about your computing needs.

IAS Computing

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