

CLEMSON UNIVERSITY POSTDOC HANDBOOK

03/21/2017

Welcome

Welcome to the Clemson University Office of Postdoctoral Affairs. Established in 2017 to help serve the needs of the growing post-doctoral scholar population in the college, the office acts as a central resource connecting scholars and faculty advisors to the larger college and campus community through a variety of services

As a post-doc, we hope that you use this handbook as a map of the policies governing, the resources available and the opportunities available to you during your time here as a post-doctoral scholar. Your contributions as a researcher and member of the Clemson Family are valuable and we want to recognize you. Please do not hesitate to contact us if there is any way that we can be of assistance during your time at Clemson.

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Introduction

Mission

To support and enhance a diverse community post-doctoral scholars and their faculty advisors by providing a centralized office to cultivate innovative research, advanced training and career development to improve the overall Clemson experience.

Definition of a post-doc

“An individual who has received a doctoral degree (or equivalent) and is engaged in a temporary and defined period of mentored advanced training to enhance the professional skills and research independence needed to pursue his or her chosen career path”
-NSF/NIH definition, est. 2007.

- Post-Docs at Clemson are present for a maximum of 4 to 5 years as a post-doc.
- Engaged in Primarily research, advising and mentoring as appropriate and according to contracts.

Classification of Post-Docs

The majority of post-docs at Clemson, are hired as a Post-Doctoral Fellow, however for various reasons, those without a PhD, may be hired on as a research associate or research assistant professor. Below are the relevant definitions that guide the status of a post-doc. *Definitions of positions from the faculty manual are in italics.*

Post-Doctoral Research Fellow

“Denotes an appointment for special research functions, typically in connection with externally funded research projects. The individuals appointed shall have the general qualifications for regular faculty. These appointments are time-limited according to funding constraints, research program needs, satisfactory performance, and if funding sources and grant conditions allow.”

Post-Doctoral Fellows are individuals that have obtained their PhD and are pursuing advanced research experience in preparation for an independent career as a “trainee in residence”. They are typically appointed for a limited period of time and participate in research projects and research teams usually under the supervision of a faculty sponsor. They are supported by external awards, fellowships, or state or foundation funds. Due to the temporary nature of their appointment, it is not appropriate for them to serve as Principle Investigator (PI) on an external research award. It is reasonable for them to serve as co-PI and to participate in grant writing. They will hold a special faculty status and as their offer letter and advisor allow. Post-doctoral fellows can be hired as time-limited positions as appropriate.

Research Associate

Research Associates are individuals who are typically appointed for a limited period of time to participate in research or scholarly activities, usually under the supervision of a faculty sponsor. They are supported by external awards, fellowships, or state or foundation funds. They do not hold faculty status, but may participate in teaching (but not their primary responsibility) as their contract allows. This position title does not require a PhD. Research associates can be hired into regular, temporary, temporary grant, or time-limited positions.

Research Faculty

“Includes the titles of research professor, research associate professor and research assistant professor (depending on professional qualifications) may be granted to persons engaged in full time research who are supported exclusively from external funds or foundation accounts. Such appointments must be initiated by the host department(s) in accordance with departmental bylaws and approved by the dean and the Provost. These positions are contingent upon the availability of external funds and adequate space; termination is automatic upon expiration of external funding. Individuals holding these positions will be subject to annual review utilizing the faculty activity system for faculty continuance. Initial appointment, reappointment, and promotion will be based on departmental by laws and will be contingent upon plans for any contributions to the department’s undergraduate, graduate, and public service programs that interface with their research or public service activities. Examples are participation in departmental seminars, research exposure with undergraduate and graduate students, provision for funding of graduate students, service on the graduate advisory committee, and public service activities related to the department’s mission. Distribution of indirect costs or overhead

generated shall follow university policy. These positions are not tenurable, nor shall time spent in such a position count toward tenure. “

Research Faculty is a special faculty rank defined in the Clemson University Faculty manual. They are individuals who are typically hired to participate in research projects and research teams working with one or more faculty members or they may be expected to develop their own research project/program. They are supported exclusively by external funds or foundation funds. No state funds may be used for salary support. Because of these salary restrictions, they have no teaching or administrative responsibilities. The title is to be determined by the department's Tenure, Promotion & Reappointment (TPR) committee and qualifications are comparable with the corresponding regular faculty rank. Per college policy, they are hired on a 9-month basis.

Temporary position

This position is for employment of 12 months or less and includes no benefits except the option for retirement. If 30+ hours are worked during the week, benefits will be offered. Any continuation of the appointment will require a two week unpaid break in service and a change of duties. The position can be paid from any funding source or type of account

Temporary Grant position

This position has benefits in accordance with position title and hours. This type of position does not carry a maximum employment length as long as funding is available. The position must be generated with and paid from grant funding only.

Time-Limited Position.

This position has benefits in accordance with position title and 30+ hours. The position can be paid from any funding source. It must be associated with a specific project (name) and must have an end date or will only last until funding runs out or the position is no longer required.

Temporary Housing

At this time we do not offer temporary housing for postdocs. Visit our website to obtain information about housing <http://wwwdev.clemson.edu/cecas/research/post-docs-new/postdoc-resources/about-city.html>

Benefits

Benefits are provided according to hours worked through the office of human resources. Depending on the hiring situation, different benefits including retirement, insurance, and leave are potentially available. Please consult your HR representative for more information and to enroll in the options available to you.

Prospective Employee Toolkit: http://media.clemson.edu/humanres/benefit_programs_booklet.pdf

Benefit Programs Summary Booklet:

http://media.clemson.edu/humanres/benefit_programs_booklet.pdf

Employee Services

Many of the services available to all Clemson employees are also available to post-doctoral fellows. These include Employee Assistance Program, university Ombudsman, discounted membership at Fike Recreation Center, and Tuition Assistance.

Employee Assistance Program

Clemson University, recognizing the dignity, value, and contributions of all faculty and staff, provides the Employee Assistance Program to ensure administrative support for any employee experiencing personal difficulties that may result in personal stress or problems that could impact job performance. The Employee Assistance Program (EAP) is provided through an outside resource, Deer Oaks EAP. Services offered through this program are available to Clemson University faculty and staff and their dependents/household members with a focus on the importance of work/life balance. For more information, please visit:

<http://www.clemson.edu/employment/worklife/EAP.html>

Contact Deer Oaks: 1-866-327-2400 or visit the website at <http://www.deeroaks.com/>,

Username: Clemson, Password: Clemson

Ombudsman

An ombudsman is an independent, informal, neutral and confidential resource who provides assistance to members of the University community in exploring options to resolve problems, complaints and conflicts when normal processes and procedures have not worked satisfactorily. This assistance is an alternate to formal administrative channels, supplementing them but not replacing them. The Ombuds Office serves as a resource for those who seek guidance on policies, procedures and regulations affecting faculty, graduate students, postdocs, undergraduate students and staff. Ombuds can refer individuals to persons able to resolve problems or handle issues at the lowest possible level. Where appropriate, ombuds can also facilitate communication between parties who find themselves in a dispute.

The Ombuds Office is available to faculty members, graduate students, postdocs, undergraduate students and staff who:

- have a problem or concern relating to the University and need guidance in resolving the issue;
- need information about policies or procedures at Clemson;
- think that the University has made an error in a particular case;
- feel like a victim of harassment or discrimination;
- are unsure about which University policies, procedures or regulations apply to certain situations;
- have a problem that cannot be resolved by following regular University procedures; believe that he/she has been unfairly or inequitably treated;

- have a problem that requires someone to help negotiate a solution or facilitate communication between parties;
- believe that a University policy, procedure or regulation has been applied unfairly or erroneously.

The Ombuds Office provides a confidential, informal, neutral, fair and impartial place for faculty members, graduate students, postdocs, undergraduate students and staff to discuss their concerns. Ombuds can assist with:

- addressing problems and concerns, identifying and evaluating options to reach resolutions;
- providing available resources within the University that might be of assistance;
- serving as a neutral party in conflict resolution;
- opening lines of communication through shuttle diplomacy;
- recommending changes in University policies and procedures when appropriate.

Confidential: Private confidential meetings can be arranged at your convenience. All communications will be treated with strict confidentiality to the extent permissible by law. The Ombuds will not identify you or discuss your personal concerns with anyone unless, within the course of your conversations with the Ombuds, you and the Ombuds both deem it appropriate to do so. The only exception to confidentiality to the extent permissible by law, is when an Ombuds determines that there is risk of imminent harm. Matters discussed with an ombudsman are considered confidential, "off the record," and do not constitute formal notice of any claims to Clemson University. The Ombuds Office is made available to visitors with the express understanding that it provides them with a confidential, independent, neutral and alternate channel of communication. Use of the Ombuds Office constitutes an agreement not to seek to compel an ombudsman to reveal confidential communications in formal or legal proceedings.

Contact: <http://www.clemson.edu/administration/ombudsman/index.html>

Ombudsman for Faculty & Students (including "Post-Doctoral Fellows"): R. Gordon Halfacre, 864-656-4353

Ombudsman for Staff (Research Associates): Tom Ward, 864-656-5353

Fike Recreation Center

University employees may purchase an individual membership, and employee/spouse membership or an employee/family membership at a discounted rate to the campus recreation center. For more information, please visit: <http://www.clemson.edu/campus-life/campus-recreation/memberships.html>

Tuition Assistance

Goal: To provide educational opportunities for State employees specific to their employing institution.

Eligibility: All employees working 75 percent time or greater in a permanent, temporary grant, or time limited position.

Process: The tuition assistance benefit is available to eligible employees who are admitted as a degree seeking undergraduate, or who are admitted by the Graduate School to post-graduate or graduate-degree, or who are classified as special students. Special student status provides employees the opportunity to take classes without applying for formal admission to a degree seeking program. Employees must obtain a form from the Undergraduate Admissions Office for special student status and must reapply each semester and each summer session until 18 credit hours are completed. After obtaining 18 credit hours, the employee must apply for admission, take SAT (normal enrollment requirement), and check with the Admissions Office on transcript requirements. An enrolled employee who leaves the University will be allowed to continue the course; however, that person will not be permitted to enroll in additional courses. This benefit covers academic fees only: not medical, laboratory or other incidental fees.

Employees may take up to six (6) credit hours per semester. Summer I and Minimester A and B are treated as the same registration. Summer II and Minimester C and D are also treated as the same registration. Therefore, eligible employees may register for one or the other, but not both.

Limitations and Exclusions - Employees are encouraged to discuss with their supervisor their intent of taking classes and should schedule classes during off-duty hours whenever possible.

When a desired class cannot be scheduled during off-duty hours, the department may adjust the employee's work schedule, allow them to use annual leave, accumulated compensatory time, or leave without pay.

Study Abroad programs are excluded from this tuition assistance policy. Employee tuition assistance for online and internet courses is not generally provided, but may be granted at the discretion of the college offering the course. Employees who wish to receive tuition assistance for online and internet courses must receive approval from the college's dean.

For more information: <http://www.clemson.edu/finance/student-financials/tuition-fees/stafftuitioninfo.html>

About Clemson

Clemson University combines the benefits of a major, land-grant, science- and engineering-oriented Research University with a strong commitment to quality teaching and individual student success. It is a student-centered community characterized by high academic standards, inclusiveness, collaboration and a drive to excel.

Located in a college-town setting, Clemson boasts a 17,500-acre forest, a 295-acre botanical garden and a lakefront setting. Undergraduate enrollment is managed to ensure small classes, an 18-to-1 student-to-faculty ratio, and high retention and graduation rates. Clemson scores above the national average on student engagement and satisfaction surveys, and has earned national recognition for living-learning communities, Creative Inquiry, writing across the curriculum and participation in community service.

A new 10-year strategic plan, the Clemson 2020 Road Map, focuses on providing talent for the new economy, driving innovation that stimulates economic growth, and addressing the great challenges of the 21st century, such as health, energy, transportation and environmental sustainability. Other key emphasis areas include advanced materials, biotechnology and biomedical science, information and computing technology, family and community living, general education, information and communications technology, and leadership and entrepreneurship.

Clemson ranks 21st among national public universities according to U.S. News & World Report and is the No. 1 choice of the state's best high school graduates. More than half of Clemson's incoming freshmen ranked in the top 10 percent of their high school class. The University ranks seventh among national universities, both public and private, in payback ratio, according to SmartMoney Magazine – a calculation based on graduates' lifetime earning potential and the cost of tuition.

Clemson's 20,000 students can select from 80 undergraduate and 110 graduate degree programs offered by five colleges: Agriculture, Forestry and Life Sciences; Architecture, Arts and Humanities; Business and Behavioral Science; Engineering and Science; and Health, Education and Human Development.

Clemson was founded in 1889 through a bequest from Thomas Green Clemson, a Philadelphia-born, European-educated engineer, musician and artist who married John C. Calhoun's daughter, Anna, and settled at her family estate in South Carolina. Clemson believed that the way to rebuild his adopted state's war-ravaged economy was through scientific education, so he left his home and fortune to the state of South Carolina to create the institution that bears his name.

For more information, go to www.clemson.edu or call the Class of '44 Visitors Center at 864-656-4789.

Research Environment

With an emphasis on research and economic development, Clemson is strongly focused on collaboration and encouraging faculty, students and economic partners to embrace and pursue bold ideas. Our teaching, research and outreach are driving development and improving the quality of life in South Carolina and beyond. In fact, Clemson's externally funded research expenditures surpassed \$100 million the past two years.

Clemson is growing selected graduate programs and building new research and economic development centers across the state. These centers support a knowledge-based economy and are focused on advanced materials, automotive and transportation technology, biotechnology and environmental sustainability. Clemson entrepreneurs — students and faculty alike — are bringing technology and research findings to market. From manufacturing to medicine, Clemson is building tomorrow's economy and workforce today.

For more information about research at Clemson, please visit: www.clemson.edu/research

Research Safety

The Office of Research Safety (<https://www.clemson.edu/research/safety/>) strives to promote a culture of safety, integrity, and quality within the University research community. Along with the Office of Research Compliance, we work to facilitate University research, teaching and public service programs by providing oversight and coordination of research compliance and safety areas.

While each department has its own safety and training protocol, many training resources are available both in classrooms and online. Online training courses include:

- Bloodborne Pathogens
- Biohazardous Waste
- Biological Safety Cabinets
- Chemical Fume Hoods
- Chemical Hygiene
- Hazard Communication
- Hazardous Waste Training - How to Dispose of Chemical Waste
- Laser Safety
- X-ray and Radiation Producing Equipment

Please make sure you consult with your research advisor and lab manager to determine the necessary safety training you require to conduct research in your area.

Research Resources

Editorial Services

Contact: Godfrey Kimball, gkimball@clemson.edu

As the editor in the CES Pre-awards office, Godfrey Kimball provides administrative and consultative services in support of the acquisition and management of externally supported programs and projects under limited supervision. He organizes and assists faculty in assembling and writing with special interest in interdisciplinary proposals on a college and a university-wide basis on request. He also delivers technical assistance to faculty in the development of single and multi-authored proposals/papers by reading and editing for style, grammar, spelling, sentence structure, and punctuation. Post-doctoral candidates and researchers can benefit from what he offers, particularly those with English as a second language in that he can rewrite proposals to increase readability and impact, and condense text to fit space requirements as needed without losing the essential theme of the research. Mr. Kimball can also recommend and arrange for expert readers and secure their evaluations.

The editor can also provide basic services, from SVO agreement, parallelism, grammar, overly long sentences, sentences that fail to link to one another, tautologies, and ensuring that a proposal reads with one voice if multiple authors are involved. Through experience, and using a layman's perspective if a scientific concept looks unfinished, the editor can either rewrite that section or perhaps comment stating how the original was unclear and recommend a rewrite. The purpose is to ensure that the proposal must be clear, readily legible, so that the layman can understand as much as possible.

Additional responsibilities include summaries for proposals that are self-contained descriptions of the activity containing statements of objectives and methods used which are suitable for publication. He also ensures that they contain necessary intellectual merit of the proposed activity and broader impacts from the proposed activity, coordinating and writing biosketches for faculty that are in the correct format for the different sponsors (NSF, NIH, DOE, DARPA etc.). He encourages faculty to submit large multi-disciplinary proposals by searching for opportunities and matching them to the faculty by disciplines, and maintains a repository of standardized documents for each department in the college pertaining to facilities, equipment and services available which would support research proposals. He also looks for best practices in proposal writing either by conferences or video purchases and presenting these findings on a one-on-one with faculty and or presenting in a workshop environment. He also conducts a presentation each August during faculty orientation in which he explains his role in both editing, writing of papers and proposals.

Machining and Technical Services

Website: <https://www.clemson.edu/cecas/faculty-staff/mts/>

Machining and Technical Services (MTS) is a Research Support Center offering Engineering design, Precision Machining, Fabrication, Rapid Prototyping, Reverse Engineering and Electronics/Instrumentation in the College of Engineering and Sciences.

Capabilities:

- Engineering design and drafting assistance, using the latest version of AutoCad and SolidWorks.
- Charmilles Electro-Discharge Machining (E.D.M.) including 4 Axis wire, and hole popper machines.
- Precision traditional machining including Bridgeport milling machines, Hardinge tool room, Clausing Colchester, and Monarch lathes.

- (C.N.C.) Computer Numerical Controlled machining, including 2 Axis turning, and 4 Axis milling.
- Precision Surface grinding, including Okamoto 12-24, 6-18, and Harig 6-12 machines.
- Sheet metal and plastics fabrication, welding; arc, MIG, TIG, gas, plasma cutting.
- Electrical Engineering, Electronics and Instrumentation Design, repair and installation.
- Rapid Prototyping:
 - Fuse Deposition Modeling - Stratasys Fortus 360mc
 - 3D Color Printing - Spectrum Z510 Color Printer
 - Polyjet 3D Printing - Objet Connex350
 - 3D Printed Wax Patterns For Investment Casting - 3DSystems ProJet CPX 3000plus
- Reverse Engineering:
 - 3D Scanning - Konica-Minolta Vivid 910, Creaform MAXSCAN & EXASCAN and NextEngine 3D Scanner
 - Contact Digitizing - MicroScribe MX 3D digitizer & HighRES software
 - Reverse Engineering - RapidForm XOR, RapidWorks (exclusively for NextEngine scanner) and Geomagic Studio & Qualify

Library Services

The Clemson University Libraries are composed of R.M. Cooper Library (main), Special Collections (archives), Gunnin Architecture Library, the Tillman Media Center (education and curriculum materials) and the Campbell Graduate Engineering Center (CGEC) Library at CU-ICAR. The general collection at R.M. Cooper Library consists of approximately 1.6 million books, 208,000+ audio/visuals, 2,149 current print periodicals, 64,076 unique electronic journal titles, and 100,000+ electronic books. The Libraries are a U.S. Federal Document Depository, and receive federal government publications, extension publications, technical reports, and maps. South Carolina government publications are also collected. (Numbers of physical pieces are included in above totals.) Federal and South Carolina government documents are currently distributed primarily in electronic formats.

The Libraries are fully networked, and through the Library webpage provide access to: an online catalog of local holdings; regional and worldwide library catalogs; a federated catalog of books and journal articles; a variety of databases, electronic journals and ebooks; and the Internet. Twelve professional librarians and five library technical assistants provide reference service in the main library.

Three reference librarians serve as liaisons and research specialists for faculty, staff, and students in the College of Engineering and Science: Jan Comfort is liaison for Bioengineering; Chemical and Biomolecular Engineering; Civil Engineering; Electrical and Computer Engineering; Environmental Engineering and Earth Sciences; General Engineering/Engineering and Science Education; Materials Science and Engineering; and Mechanical Engineering. Peggy Tyler is liaison for Automotive Engineering; Industrial Engineering; Computer Science; and Mathematics. Megan Sheffield is liaison for Chemistry; Physics; and Genetics.

Engineering Collection

The Libraries' engineering collection includes more than 52,700 monographs, 100 current print journals, and access to more than 5,000 electronic journals. The majority of the physical items

are housed in the R.M. Cooper Library, but materials in the fields of Civil and Environmental Engineering may also be located in the Gunnin Architecture Library, based on the related subject matter supporting the Architecture and Construction Science curricula.

Databases and Journals

To locate journal articles and research publications, the Libraries provide access to a wide variety of article indexes and databases. To help students decide which databases are best for their research topics, the library provides subject research pages. Each discipline within Engineering also has a custom LibGuide, which features additional databases and journal packages relevant to that field. The Engineering subject page includes links to relevant article indexes and databases, such as Engineering Village, IEEE Xplore, INSPEC, Web of Knowledge (Science Citation Index), SciFinder Scholar (Chemical Abstracts), SAE Digital Library, ASTM Standards, Academic Search Complete and Medline. Many of these databases contain full-text articles, and/or links to articles available via Library e-journal subscriptions. E-journals are found using the Library Catalog or the E-journal Finder. The Library maintains subscriptions of journal packages from Elsevier, Springer, and Wiley-Blackwell as well as a number of professional organizations such as ASME, ASCE, and ACM. Nearly every electronic resource is available off-campus to authenticated users.

Journals are purchased from a central periodicals fund, administered by the Head of the Acquisitions Unit. New titles can be submitted to the Engineering liaison, and will be reviewed by the Libraries' Information Access Committee for approval.

Books and e-Books

The Engineering Liaison selects books to support the research needs of faculty and students. An Information Access Policy sets guidelines for purchases.

http://media.clemson.edu/library/infoAccess_Policies/EnvironmentalEngineeringEarthSciences.pdf. Each year library funds are allocated to purchase current books. The allocation formula is based on number of faculty, average cost of books, and recent circulation. Faculty members are encouraged to submit book order requests for titles that will support their students' course work and research, and their own research and teaching.

Increasingly, electronic books are the preferred format. Electronic books have several advantages: the ability for more than one patron to use at a time; the ability to electronically search the contents of the book to retrieve the information needed; and no need to spend time and money to process, store, and preserve a print book. E-books are purchased in many different ways. We subscribe to some collections just as we do for journal collections. Knovel, CRC ENGnetBASE and Referex are several examples. In addition, we purchase individual books from a variety of publishers, including Wiley and Springer. In addition, we have lately begun to explore a new model of purchasing electronic book titles on demand. Information about books that meet certain criteria (cost, subject matter, scope, etc.) are listed in the Libraries catalog. If a particular title is accessed more than 3 times, it is automatically purchased for the collection.

Computer and Information Technology

Clemson Computing and Information Technology, or CCIT, is the primary provider of computing resources and IT support for Clemson University. Currently consisting of well-established, highly successful group of over 250 faculty and technical staff and 100 students within the central unit collaborating with over 100 distributed IT staff spread among the various colleges and departments, CCIT is providing an integrated approach to high-performance computing environments and traditional computing. Within this framework, the groups that manage the various aspects of these areas will leverage the common synergies and provide comprehensive solutions, to the benefit of faculty, students, and the greater user community.

CCIT Services Catalog: <http://www.clemson.edu/ccit/atoz/categories.php>

For service

Email: ITHELP@clemson.edu OR call: (864)656-3494

CCIT Research Resources

Cyberinfrastructure Technology Integration (CITI)

Cyberinfrastructure Technology Integration (CITI) is a centrally funded support organization providing on-line and in-person training to faculty, staff, and students in basic use of the computing resources; assistance for success in program compiling, installation and running; and also code parallelization/optimization. CITI faculty and technical staff are a well-established, highly successful group of research scientists who have lead research in areas such as high performance computing applications, high throughput computing, high performance networking, data access and interpretation, visualization, and software environments for cyber-communities.

Data Center

Clemson Computing and Information Technology's physical resources include the main data center located in the Information Technology Center at the Innovation Campus and Technology Park. The core of Clemson's computing infrastructure, the data center has 21,000 sq ft of raised floor and is powered by a 14MW substation, with redundant power and cooling systems, and two new UPS systems, increasing the ITC power capacity from 1MW to 2.5MW. The data center is the home of both enterprise and HPC systems, and is manned by CCIT staff on a 24 hour basis from a state of the art network operations center within the ITC.

High Performance Computing – Palmetto Cluster

Clemson's high performance computing resources includes a "condominium" style cluster, known as Palmetto, developed to serve the university's wide-ranging research needs. The Palmetto Cluster is a supercomputer community resource, jointly funded by Clemson University and research grants secured by participating faculty.

Developed by Clemson Computing and Information Technology (CCIT) in collaboration with faculty researchers across the university, the Palmetto Cluster provides a shared platform that optimizes resources for the benefit of all users. Named for South Carolina's state tree, the Palmetto Cluster is designed to suit many different research applications, with a large number of powerful multi-core nodes, each with a significant amount of memory.

The Palmetto Cluster is a fully staff-supported high-performance research computing center, which is located in its own secured facility at Clemson University's research park. (CCIT) maintains this community resource, jointly funded by Clemson University and research grants secured by participating faculty that provides a cost-effective shared computing infrastructure for faculty and students.

With performance of more than 85 trillion floating point operations per second (teraFLOPS), the Palmetto Cluster is ranked number 6 among academic institutions in the country and number 85 worldwide on the list of Top500 Supercomputing Sites. If you need guaranteed availability and have funding for purchase, the Cluster Condominium Program provides a very cost-competitive alternative to purchasing, operating and managing your own, stand-alone cluster. Condominium owners have access to additional Palmetto computational capacity as needed.

How the Cluster Condominium Program Works:

Faculty may purchase any number of compute nodes. Once installed, the nodes become part of the cluster but the faculty member retains ownership of the purchased equipment.

Faculty and their research collaborators always have first priority on their own equipment or the equivalent in CPU time and storage. In addition, owners have access to compute cycles available on all the other nodes in the cluster on a first-come, first-served basis. Unused compute cycles in the condominium are available for use by the rest of the Clemson community. Faculty with storage needs above the 50 GB individual quota and 50TB temporary scratch space may purchase high throughput storage by the TB. Clemson Computing and Information Technology provides: hardware, operating system, and system administration support; equipment room space, racks, power, and cooling; a high speed Myrinet I/O interface for each node; and research scientist support staff to assist faculty in getting their application up and running.

Clemson University subsidizes these costs in order to build High Performance Computing as a strategic university resource; in addition, vendors have provided substantial hardware discounts since the use is for university research. Any similar, non-subsidized services provided by CCIT are therefore likely to be billed at a higher cost.

Ranked #81 in the world (TOP500 list, November 2013), the system currently benchmarks at 396.7 teraflops and currently has 1,978 compute nodes with 19,814 total cores. The nodes are a mixture of vendors such as Dell, Sun, IBM, and HP. The system also contains 5 large memory nodes with 512GB of memory and 1 node with 2TB of memory. All nodes are connected via 1Gbps Ethernet. The system has a combination of 10Gbps Myrinet and 56Gbps Infiniband interconnections. Recent additions to the cluster contain 20 nodes with dual Nvidia Tesla M2075 GPUs and 197 nodes with dual Nvidia Tesla K20m GPUs. The system is directly connected to a Brocade MLXe-32 switch that will provide 100Gbps bandwidth to Internet2 and 40Gbps bandwidth to the Clemson campus. The system is monitored 24x7 using Nagios and CA Spectrum. Storage for the cluster consists of 2 DDN 6620 arrays with 120 TB of raw disk storage attached to 2 Sun X4600 nodes running the SAM-QFS filesystem, and 32 Dell R510 nodes with 220TB of raw disk storage on each running the OrangeFS parallel filesystem.

The Palmetto Cluster is made possible through a partnership between faculty and information technology administrators. A shared funding formula makes Palmetto available to the entire Clemson community on a first come, first served basis; faculty researchers who require predictable computational availability may purchase nodes with reserved priority. The university

provides additional nodes, hardware infrastructure, and system administration support. This gives individual researchers high performance computing capacity previously unavailable at Clemson, and allows the university to compete for the research grants and contracts that are vital to Clemson's goals as a major research university.

High Throughput Computing - Condor

A campus grid linking over 1700 CPUs distributed across 27 locations provides a loosely coupled high throughput computing resource for all faculty and students for computational needs. This grid utilizes Condor, a specialized workload management system that provides a job queuing mechanism, scheduling policy, priority scheme, resource monitoring, and resource management. Applications from several disciplines including civil engineering, economics and chemistry, have already benefited from this resources.

Networks

At the core of Clemson's local area network are two fully-redundant, 10 Gbps-connected Cisco 6509s in diverse campus locations. These switches aggregate dual 1 Gbps or 10 Gbps connections from dual switch Cisco 3750 stacks that serve as building network distribution switches. These distribution stacks aggregate dual connections from the Cisco 3650s that connect to each end-user jack at 1 Gbps. This network design has no single points of failure in the core and distribution layers, is consistent across Clemson's entire campus, is easy to troubleshoot, and behaves in a deterministic manner should link or equipment failures occur. The C-Light Network is Clemson University's connection to the national research community, via direct fiber between Clemson, Greenville, Atlanta and Charlotte, providing high speed access to the National LambdaRail, Internet2, and other national and international research networks. C-Light currently provides 16 individual 10 gigabit connections, but as a facilities-based network, it can be easily reconfigured to dedicate access as needed. C-Light is the first leg of the South Carolina Light Rail, the State of South Carolina's fiber optic network. This resource brings to Clemson the infrastructure that faculty and researchers need to collaborate with colleagues and access resources nationally and internationally, thusly ensuring a competitive capability.

Network Operations Center (NOC)

The Network Operations Center utilizes cutting edge technology, equipment, and monitoring tools to proactively monitor the network infrastructure and critical computing systems and services provided by CCIT to Clemson University and our affiliated organizations, overseeing functionality, capacity and performance. The NOC operates 24x7x365 to provide top level support and customer service to the university's research and academic communities and our affiliated partners. The NOC utilizes cutting edge technology, equipment, and monitoring tools to proactively monitor the network infrastructure and critical computing systems and services provided by CCIT to Clemson University and our affiliated organizations, overseeing functionality, capacity and performance. The NOC operates 24x7x365 to provide top level support and customer service to the university's research and academic communities and our affiliated partners.

Large sensor grid – NESTbed

NESTbed consists of 80 Tmote Sky devices arranged in a dense grid, each of which has a 16-bit 8Mhz micro controller, 2.4Ghz ZigBee radio, 48K ROM, 10K RAM, and 1M EEPROM storage. Small cameras provide a visual actuation state. Additional features include a centralized application/database server and both GUI and shell controlling interfaces.

Office of Global Engagement

The Office of Global Engagement (OGE) coordinates international activities and collaborative efforts on Clemson's campus and around the world through programming, services, and development. We work with faculty, staff and students in the areas of international programs and international services providing programming and services for incoming international students, faculty, staff, and visitors and for Clemson students who wish to study abroad. We work with faculty members and departments to develop study abroad programs and to establish partnerships with overseas institutions. We also strive to enhance overall campus internationalization as both Clemson and our students and faculty live, work, and study in a diverse and interconnected world.

International Services Office

<http://www.clemson.edu/administration/ia/services/index.html>

OGE's International Services area works with incoming international students, scholars and faculty, as well as university administrators, to provide valuable information, service, and advice to meet the needs of our community. As an international at Clemson University, International Services is a valuable resource for your immigration, employment, and support needs.

OGE's International Services contributes to the facilitation of international educational exchange on the campus of Clemson University by providing immigration related support services to international students and scholars as well as Clemson's international faculty and staff and those engaged in hiring foreign nationals.

Our advising staff currently supports approximately 1,700 international students from over 90 countries, in addition to approximately 200 exchange visitors and international employees from around the world. Our goal is to make Clemson University a welcoming, positive environment for our international population to help them meet their academic and research goals, while making sure personal goals are taken into consideration.

International Services is pleased to assist the University in meeting its goals of creating a diverse environment where students and scholars, from the U.S. and abroad, have the opportunity to share, grow, and discover. International Services hopes that you think of our office as facilitating not only your necessary immigration, employment and taxation requirements, but also as a resource in helping you reach your goals.

Please call 1-864-656-3614 or stop by Long Hall, Room 108 to make an appointment.

International Organizations

Many organizations across campus bring together international populations. To find out more about different organizations and help find a community on campus, contact the Office of Global Engagement, or use Clemson's orgsync search: <https://clemson.collegiatelink.net/organizations> .

Professional Development Resources

Faculty Activity System (FAS)

All employees hired into a special faculty position (including Post-Doctoral Fellows and Research Professors), have access to Clemson's Faculty Activity System (FAS), the electronic record-keeping and evaluation system. Post-Docs and their advisors may elect to utilize the FAS for annual reviews and effective tracking of the post-doc productivity.

Access to the FAS & additional information is available here: <https://fas.app.clemson.edu>

- Categories of Activity include:
- Coursework
- Other Instructional Activities
- Administrative Duties and Elected Offices
- University Sponsored Public Service
- Librarianship
- Research and Scholarship
- Student Advising/Honors and Graduate Committees
- Committees
- Professional Service and Professional Development
- Personal Community Service and Personal Development
- Honors and Awards

Clemson Writing Center

The Clemson Writing Center works with writers ranging from faculty to first year students. The center welcomes working with postdocs.

The theory of the Writing Center is based upon empowering and educating writers so that we produce better writers, not just better pieces of writing. Our methods, therefore, are Socratic in nature and place the writers in the position of power. We believe that the writer should walk out of the Writing Center with the sense of authority and certainty that enables him/her to write with confidence. We help students reach that confidence not by pointing out superficial errors, but by inviting writers to talk about their intentions, to find weaknesses in the writing themselves, and to talk with a tutor about the goals of the writing process. In short, we avoid corrective sessions that are closer to editing and work toward more collaborative sessions that empower the writers.

More info: <http://www.clemson.edu/centers-institutes/writing/index.html>

Make an appointment: <http://www.clemson.edu/centers-institutes/writing/appointments/index.html>

Contact: Austin Gorman, Director, gorman1@clemson.edu

Career Planning Tools

There are a variety of resources available online to assist you in defining your goals and interests and preparing you for your future career. A few of these resources recommended by the National Post-Doc Association are listed below.

Science Careers: myIDP

An individual development plan (IDP) helps you explore career possibilities and set goals to follow the career path that fits you best.

myIDP provides:

- Exercises to help you examine your skills, interests, and values
- A list of 20 scientific career paths with a prediction of which ones best fit your skills and interests
- A tool for setting strategic goals for the coming year, with optional reminders to keep you on track
- Articles and resources to guide you through the process

There is no charge to use the site and you can return as often as you wish.

To access the site, follow this link: <http://myidp.sciencecareers.org/>

Assessment Tools

When thinking about which career path to take, it is often helpful to conduct a self-assessment to identify skills and interests. The following tools might help:

- Myers-Briggs Test: a questionnaire that describes your preferred way of interacting; one of many free online tests can be found at HumanMetrics: <http://www.humanmetrics.com/cgi-win/JTypes2.asp>
- Strong Interest Inventory: another personality test compares your interests with those of individuals successfully working in a range of jobs; the analysis usually incurs a fee (see if your institution's career services might offer it), but you can find free versions online (keep in mind that you often get what you pay for): <https://www.cpp.com/products/strong/index.aspx>
- Career Beliefs Inventory: a career counseling tool that can help identify and overcome attitudes that interfere with choosing a career: <http://eric.ed.gov/?id=ED356256>
- Core Competencies: The NPA established six core competencies to offer guidance to individual postdoctoral scholars who must seek out relevant training experiences, in collaboration with mentors, institutions, and other advisors who provide this training. <http://nationalpostdoc.org/publications/competencies>
- SciPhD: SciPhD offers an Online Self-Assessment Training course. NPA Affiliate or Individual Members can receive a 25% discount on this course <http://sciphd.com/SciPhD.com/Home.html>

National Post-Doc Association

The mission of the National Postdoctoral Association (NPA) is to advance the U.S. research enterprise by maximizing the effectiveness of the research community and enhancing the quality of the postdoctoral experience for all participants. To achieve its mission, the NPA works to:

- Develop and advocate for implementation of policies that promote positive and constructive change in the postdoctoral experience.
- Promote collection, analysis, and dissemination of data on postdoctoral scholars.
- Develop a self-sustaining, democratic organization to enhance all stakeholders in the postdoctoral community.

The NPA was founded in 2002 by a group of postdoctoral leaders across the U.S. A start-up grant was awarded by the Alfred P. Sloan Foundation under the auspices of the American Association for the Advancement of Science (AAAS). Since the organization's founding, more than 150 institutions have adopted portions of the NPA Recommended Practices; moreover, it has been recognized by the National Institutes of Health as a "key driver" of its postdoctoral policies. The NPA works with the leadership of federal funding agencies, such as the NIH and the NSF, to develop new programs and policies for postdoctoral training, compensation, and benefits.

Postdoctoral scholars at institutions that are sustaining NPA members are eligible for free Affiliate Membership in the NPA. Please visit the NPA website <http://www.nationalpostdoc.org> to learn of the advantages of being member. These include access to web content (e.g. Postdoctoral Policies Database, International Postdoc Survival Guide), discounts to the NPA Annual Meeting, and resources for professional and leadership development. Members also have access to affordable group health insurance plans. Individual (dues paying) Members have access to a number of additional discounts. See the [NPA Member Discounts page](#) for extensive details on membership status and respective benefits.

The NPA is always interested in recruiting enthusiastic people to serve on one of its four [committees of the membership](#). This service is great "beyond the bench" experience, since the committees involve policy, diversity, and international issues, along with planning the yearly annual meeting. It is an opportunity to network and collaborate with postdoctoral fellows and established scientists in a variety of institutions (universities, national labs, private foundations, industry...) both nationally and internationally.

The NPA hosts an [Annual Meeting](#) every spring that is designed to bring all stakeholders together to understand the needs of postdocs, to educate all parties, and to facilitate change at the local and national level. Workshops are offered to help PDA and PDO leaders identify and accomplish goals for their individual institutions. This event is a great opportunity for all postdoc associations, from those newly formed to long-standing organizations.

To sign up for NPA through a Clemson Affiliate Membership, please follow these directions:

Step 1: Go to <https://www.npacommunity.org/> and click on "Join" in the upper right corner.

Step 2: Select your member type:

- Affiliate Graduate Student: Free individual membership for graduate students at Sustaining Member institutions

- Affiliate Postdoc: Free individual membership for postdocs at Sustaining Member institutions
- Affiliate Non-Postdoc/Other: Free membership for non-postdocs or non-graduate students at Sustaining Member institutions

Step 3: Enter your username (your institutional e-mail address), along with your first and last name. To receive a free Affiliate membership, you must use your institutional e-mail address.

Step 4: Enter all required information (marked with an asterisk) and any other information that you wish to have in your profile. The required information includes your username, e-mail address, gender and full name. You will also need to create a password for your account. Your password must be a minimum of six (6) characters in length and contain at least one number and one non-numeric character (letters, punctuation, etc.).

Please Note: All information entered will be visible to site administrators. If you wish for information to be excluded from your public profile (as seen by other site visitors), uncheck the box(es) next to the field(s) you wish to be hidden. If you uncheck the box next to "e-mail address" it will not be displayed, but members can still contact you via e-mail through the site's e-mail system.

Step 5: Click on "Submit." Congratulations - you're done! The NPA Membership Manager will review your Affiliate membership within 10 working days, and you will receive an e-mail when it has been approved.