

# **Report on UNCA's Research Centers**

**March 18, 2010**

This report is a summary of findings in the investigation of the five research centers that were in operation in 2009. These five centers are:

Environmental Quality Institute (EQI)

Mössbauer Effect and Data Center (MEDC)

Center for Crafts, Creativity and Design (CCCD)

Pisgah Astronomical Research and Education Center (PARSEC)

National Environmental Modeling and Analysis Center (NEMAC)

The motivation behind the investigation is twofold: to help clarify the role these centers play within the University and to give an objective summary of the costs and benefits of each center.

Lothar Dohse  
Chair of Faculty Senate

## **EQI, Environmental Quality Institute**

The Environmental Quality Institute was formed in the late 1980's to focus on water quality and its impact on human health. Its stated goal is to serve citizen groups, governmental agencies, and the private sector by providing information on water quality and other environmental concerns. Its objective was to conduct technically rigorous and unbiased research to help interested parties gain accurate technical understanding of complex environmental issues.

### Resource Requirements

Based on 2008 numbers, EQI had an annual budget of \$460K and was generating 4.5 positions. This budget was slightly lower than in previous years. Its director received a 1/3 teaching reduction. The University also supplied 1,300 sq ft of laboratory / office space to run the program. However, all the equipment was purchased and maintained by the EQI Staff, EQI's operational expenses (phone, travel, and computers) were paid with grant monies, and approximately \$48K was reimbursed to UNCA to cover facilities and administration (F&A) expenses. In the final year this reimbursement was increased to \$56K. EQI also paid for the adjunct instructors needed to cover the director's reassigned teaching load.

### Impact on UNCA

EQI offered research opportunities for both faculty and students. Typically the Center employed 7-9 students who logged, on average, a total of 2600 hours a year, and each year approximately three students received the designation as *Undergraduate Research Scholar*. The Center also offered research projects for some faculty as well as opportunities to incorporate real data and case studies into their undergraduate classes. In the last three years about a dozen undergraduate classes used EQI data, and the Center generated six peer reviewed articles authored by UNCA faculty, four of which included UNCA student authors.

### Impact on the Community

Locally, EQI was very active in helping regional agencies assess water quality. Examples of its projects included helping regional groups monitor the water quality of streams, testing drinking water supplies for lead leached from pipes, and testing for arsenic release in lumber used for decks. Their reputation extended beyond the local area, some of their non-regional collaborators included: New York City Department of Environmental Protection, Environmental Working Group, Sierra Club, Greenpeace, Center for Environmental Health, and the US Environmental Protection Agency. EQI research has been used in constructing the Lead and Copper Rule, reducing the allowable percentage of lead in kitchen faucets and submersible pumps, reducing the allowable percentage of lead in children's jewelry, and eliminating the use of chromated-copper-arsenic lumber for residential uses.

## **MEDC, Mössbauer Effect Data Center**

The Mössbauer Center had been a part of UNC Asheville since 1970. Its purpose was to support the international Mössbauer community by maintaining and updating their database and creating tools and resources for all students, scientists, and research groups in the field. (Mössbauer spectroscopy uses gamma radiation to understand the atomic structure of specific elements.)

### Resource Requirements

In 2009 the Mössbauer Center was supported through outside funding and employed three individuals filling 1.75 positions. Its annual budget was approximately \$94,000. Aside from the 400 sq ft of office space, this Center also ran a scientific laboratory, which occasionally employed students and was part of faculty research. Even though this Center's Director was a UNCA faculty member, no reassigned time was granted to that faculty member for his work. No direct funds were paid to the University for its overhead costs.

### Impact on UNCA

The MEDC staff provided support on a regular basis (without additional compensation) to UNCA by assisting students enrolled in Chemistry courses. In addition the Mössbauer program provided equipment for the Physical Chemistry Labs when the University did not have the funds to support these required lab courses. As a result of these interactions, students had learning opportunities that led to a number of research projects. Though numbers vary greatly, the average number of undergraduate student research projects was two a year.

### Impact on the Community

The Mössbauer Effect Data Center differed from the other centers in that it served a small international research community. It was established as a resource to this research community and served to maintain an accessible database from which information and research data could be disseminated. The Center also assisted the organizers of international, national, and regional Mössbauer conferences in their planning and communications, and provided support to the International Board on the Applications of the Mössbauer Effect (IBAME). The IBAME is the governing body of the international Mössbauer research community.

The Center provided in-depth research information and resources, and the opportunity for international scientific experience to undergraduate students in the Mössbauer Research Group at the University of North Carolina at Asheville.

## **CCCD, Center for Crafts, Creativity and Design**

General Administration established CCCD in 1996 as a public service inter-institutional center to advance the understanding of craft by encouraging and supporting research and professional development. CCCD has its own board of directors whose members come from the three western campuses of the UNC system, as well as regional craft schools, organizations and community colleges. Initially, CCCD reported to General Administration, but under the new organizational structure it now reports to UNCA.

### Resource requirements

Most of the funding for CCCD is from non-state sources. The FY 2009 budget figures indicate that of the present \$700,000 approximately \$200,000 come from the state. State monies are used to fund two positions and CCCD operations. Grants fund an additional halftime position. The Center has its own building that is located on the Kellogg property in Hendersonville, NC.

### Impact on UNCA

CCCD serves as a resource for three regional state universities and to the crafts community in the region. UNCA faculty and students participate in a 21 day residency of an international artist held every three years. (In 2009, six UNCA students participated.) UNCA faculty / staff serve on CCCD's board and participate in annual retreats that bring together an international group of individuals to help advance craft in academia and the curatorial world.

If UNCA were to develop a craft studies curriculum, CCCD would be a major player in helping this university start a crafts program.

### Impact on the Community

CCCD is heavily involved locally, regionally, and nationally in a number of far-reaching projects. On a local level, it offers a small gallery that showcases select craft artists, and it maintains a sculpture garden for the community. On a regional level, it offers support to the crafts community through workshops and guidance to bring more recognition to studio crafts and its economic impact. On a national level, the center administers privately funded grant programs that offer museum internships, fellowships for graduating seniors, research grants, and support for the peer-reviewed periodical, *Journal of Modern Craft*.

A major achievement of this Center has been to facilitate, through private funding and grants, the writing and publishing of the first textbook in its field, *Makers: A History of American Studio Craft*, University of North Carolina Press, 2010.

## **PARSEC, Pisgah Astronomical Research and Science Education Center**

PARSEC was created in 2005 as an inter-institutional Center to help facilitate research at the radio telescope facility located in the Pisgah National Forest. This facility was formerly a U.S. government satellite tracking station, and is now maintained by the non-profit organization Pisgah Astronomical Research Institute (PARI). This institute maintains the site and provides educational opportunities for the public. PARSEC is the university based Center designed to encourage research and educational use of this facility by the UNC system. Its stated mission is to provide students and faculty from across the UNC system access to state-of-the-art astronomical instrumentation in a setting that serves as a conduit for education and research opportunities.

### Resource requirements

PARSEC is fully funded through outside sources. Its budget varies from year to year depending on the level of research and grant activity. In 2008 the budget was over \$500,000, however in 2009 there were fewer grants and the budget was \$210,000. In 2008 its director had a 0.25 reduced teaching load. Presently PARSEC has no officially designated space on campus, and its director receives no reassigned time.

### Impact on UNCA

PARSEC impacts UNCA on three levels: student interns, faculty research, and possible expansion. Each year, 5-6 students intern at the PARI facility. In addition, several faculty members from Physics and Computer Science engage in research and development at PARI. Their work (software innovations) is rewarded through "research credits" which allow the UNCA community access to the facility. In the immediate future, PARSEC will partner with The Health Adventure to install a telescope on Ridge Mountain. This telescope will augment the laboratory experiences of UNCA Astronomy students.

### Impact on the Community

PARSEC is tightly interlinked with PARI. It is the UNC system's connection to a facility that is a major attraction to the Southern Pisgah Forest. In the future this Center will be in partnership with The Health Adventure.

## **NEMAC, National Environmental Modeling and Analysis Center**

NEMAC was established in 2004 to utilize UNCA's proximity to the National Climatic Data Center (NCDC) and its resources. Its focus is to facilitate collaboration between locally based government agencies, local businesses and this university. Its mission is to conduct interdisciplinary research that addresses human interaction with the environment, to develop data-based decision making tools, and to foster active partnerships with the university and regional (both public and private) organizations.

### Resource requirements

NEMAC is supported primarily through non-state funds and employs nine full-time professionals. In past years, UNCA faculty and staff have been involved on a part-time basis with the program. Typically this amounted to two halftime positions in one year. Presently, no faculty is getting reassigned time to work with NEMAC. The 2009 annual budget was approximately \$1.25 million, and except for a nominal amount (\$3,000), all funds were from grants. Approximately \$100,000 was returned to the University for facilities and administrative costs.

NEMAC is presently housed in Robinson hall using up about 2,000 sq ft of office and classroom space. Its equipment (mainly computers) is maintained by its own staff.

### Impact on UNCA

An important component of NEMAC is to facilitate collaboration between our campus and regional organizations. In 2008-2009, 21 students were involved in NEMAC supported projects. Students worked with faculty members and were expected to deliver professional reports of their work. Typically a student earns \$10 per hour. Faculty involvement is presently limited to sponsoring students. These faculty come from a variety of programs including: Atmospheric Science, Environmental Studies, Computer Science, Management, and Multimedia Arts. Presently there are no UNCA faculty members receiving reassigned time or monetary compensation for their work with NEMAC. There are, however, several NEMAC staff members who teach as adjuncts, or as guest lecturers at UNCA.

### Impact on the Community

The main groups with which NEMAC collaborates are the NOAA (National Oceanic and Atmospheric Administration), US Forest Service, City of Asheville, and Buncombe County. It is not uncommon that students who had internships with one of these organizations were later hired as permanent fulltime employees.

## Overview of UNCA Centers' 2008/2009 Expenditures

FY 2008 expenditures of UNCA's centers.<sup>1</sup> (All numbers rounded to the nearest \$1,000)

| Center | Expenditures | Non-State positions | F&A returned to UNCA | State Funds | State positions |
|--------|--------------|---------------------|----------------------|-------------|-----------------|
| EQI    | \$474,000    | 4½                  | \$30,000             | \$34,000*   | ¼ (Faculty)     |
| MEDC   | \$94,000     | 1¾                  | \$0                  | \$0         | 0               |
| CCCD   | \$711,000    | ½                   | \$0                  | \$216,000   | 2 (E.P.A.)      |
| PARSEC | \$537,000    | 0                   | \$17,000             | \$28,000*   | ¼ (Faculty)     |
| NEMAC  | \$1,297,000  | 9                   | \$104,000            | \$3,000     | 0               |

\*These funds reflect the value of the faculty release time for the center's administration.

<sup>1</sup> Information obtained from UNC-Asheville' office of Finance and Operations.

### References

Information for this report was obtained through interviews and correspondence with the respective directors of each Center, and verified by UNC-Asheville's Office of Finance and Operations. For more information the following websites are useful.

Environmental Quality Institute, <http://orgs.unca.edu/EQI/>

Mössbauer Effect and Data Center, <http://orgs.unca.edu/medc/>

Center for Crafts, Creativity and Design, <http://www.craftcreativitydesign.org/>

Pisgah Astronomical Research and Education Center, <http://parsec.unca.edu/>

National Environmental Modeling and Analysis Center, <http://orgs.unca.edu/nemac/>