CEDS TO GROW A CAT: A Progress/Studio Report
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Abstract

In 1985 the Center for Electronic and Digital Sound (CEDS) was established at Connecticut College. That Center has been a highly visible and successful proponent of the computer arts. It has established itself as a studio for the realization of new art works, as well as a research laboratory for the creation of new artistic tools. At present it continues to broaden its resources and activities and has been one of the motivating forces behind the Center for Arts & Technology at Connecticut College (CATCC) established by unanimous faculty vote in the Spring of 1991. In addition to reporting on the greatly improved facilities of CEDS, this paper will report on the research presently underway by some 19 different faculty members in what is, to our knowledge, the only dedicated interdisciplinary faculty research center of this kind at a small liberal arts college in the United States. We will include in this report a description of the A&T Center's home, the newly renovated Winslow Ames House, the first pre-fabricated house built in the United States in the 1930s and dubbed "the house of the future." In addition, we will comment on the reorganization of CEDS as it joins its counterparts, CEIL (Cummings Electronic Imaging Laboratory), and CMAL (Crozier Motion Analysis Laboratory) under the auspices of the Center for Arts and Technology.

CEDS

The Center for Electronic and Digital Sound is a facility of the department of music at Connecticut College and a member facility of the Center for Arts and Technology. The actual name will be changed to The Cummings Electronic and Digital Sounds Studio so as to avoid confusion with the newly created Center designation by the College. The acronym will remain the same, CEDS. CEDS is located in the college's Cummings Arts Center. Its facilities have been greatly enhanced and presently include a Avid Pro Tools system, a Macintosh IIx - fully loaded with Digidesign's sound tools, Deck, etc., an extremely large assortment of music notation, sound analysis, sound synthesis, and sequencing programs for the Mac, a Fairlight CMI IX (with MIDI), a selection of Yamaha, Kurzweil, and Korg sound modules and keyboards, 2 and 4 track direct to disk digital recording, editing and mixing, 2, 4, and 8, track, analog recording and a


2 Gothic Tempest and Sleider's Dream, created by Cynthia Beth Rubin and Noel Zahler, and David Smalley and Noel Zahler, respectively, are multi-media videos which have won international recognition.
selection of analog synthesizers. In addition, CEDS has an assortment of digital and analog mixers and digital post production effects modules, equalization, and noise reduction units.

CEDS is located in Connecticut College’s Cumming’s Arts Center just behind Charles Dana Recital Hall. This facility is the main concert hall for the department of music. It seats three hundred and fifty people and is connected by cabling and closed circuit television to CEDS. The concert hall is equipped with “talk back” to CEDS and a newly designed quadrophonic sound system by James McIntosh. CEDS concerts are presented in Dana Hall and Dana Hall is the focal facility for the College’s biennial Arts and Technology Symposium.

The Center for Arts and Technology

The Center for Arts and Technology at Connecticut College supports interdisciplinary research and creative work at the boundaries of art and science, chief among its charges is the use, study, and creation of new technologies. New technologies (including hardware and software) will be made available to the academic community for the benefit of the academic enterprise. The Center for Arts and Technology provides opportunities for students and faculty to explore, through joint research projects, how new technologies might stimulate their work and foster communication among disciplines. While the Center for the Arts and Technology does not offer its own curriculum, it services students and faculty by providing the resources and environment to further work developed in existing programs which departments are unable to fund. It provides students with the opportunity of continuing their research, research with regular faculty, or with visiting scholars. The center strives to coordinate its efforts with the needs of departments. In addition, the Center presently sponsors a monthly colloquia series, student research assistantships, the biennial Arts and Technology Symposium, the publication of the biennial Arts and Technology Symposium Proceedings, an annual Journal, and a residency program for visiting artists and scholars.

The reasons for establishing a Center for Arts and Technology on the Connecticut College campus have been compelling. There was no formal mechanism for interdisciplinary research at the College, and yet interdisciplinary research is an integral part of the liberal arts curriculum. The essence of liberal education is to offer students broad-based knowledge that not only produces cultivated individuals but also enables them to function in new working environments. We believe the “renaissance team” (a group of individuals from different disciplines working together) will lead the way in the research of the future. Such research distinguishes the liberal arts curriculum and gives the College a competitive edge with research pursued at large universities where interdisciplinary work is less likely to occur because of the size of the faculty and departmental competition.

The initiative for Arts and Technology is prominent on our campus. Nineteen faculty from eleven disciplines have been extremely active in presenting the past two Arts and Technology Symposia. They have brought to the campus a
distinguished international roster of speakers, researchers, and exhibitors, whose work has been documented in the symposia's PROCEEDINGS and in such journals as LEONAD'DO, INTERFACE (the Netherlands), BYTE MAGAZINE and THE COMPUTER MUSIC JOURNAL (M.I.T.). This group is at work on plans for the Fourth Arts and Technology Symposium. Several members of the group have distinguished themselves and the college with national and international recognition of their achievements in the form of invited presentations, papers, awards and grants and they continue to produce important research across disciplinary lines. Facilities for this work have been enhanced both through faculty initiatives and the more general upgrading of computing and technological services on campus.

Housing the Center

The center will use existing facilities which are now becoming adequate to conduct the anticipated research. Space in the soon-to-be-renovated Winslow Ames House will be available for administrative offices, a library, meeting rooms, and seminars rooms. We find the symbolism of housing a Center for Arts and Technology in what was built in 1932 as the "House of the Futures" appealing. New advanced and interdisciplinary computing facilities which will be part of a new science building which will enhance the work of the center as well.

Corporate Partners

The Center opened with several already established corporate partners, but continues to seek additional relationships. Through sponsorship of the biennial symposium and joint research projects, local high technology firms such as Analysis and Technology, Inc., and Sonalysis, Inc. have displayed their interest in supporting the center and are enthusiastic about the mutual benefits that come from their affiliation. The Center's established relationships are being expanded and refined, and will serve as prototypes for future interaction with the corporate sector. The Center will provide needed expertise and access into fields such as education, as defense-dependent firms continue to seek avenues of diversification.

Research at the Center

At present the Center is only six months old yet research has been going on through the member facilities of the Center for some time. To date several award winning videos have been created through collaborations by members of the CEDS and CEIL facilities and the AICP (Artificially Intelligent Computer Performer) program is the result of a collaboration between members of the department of mathematics and CEDS. In addition, we are presently releasing Music Matrix, a set theory program for composers created by members of the CEDS studio. Other work currently underway includes an NSF (National Science Foundation) funded project to explore how parallel processing can be used in conjunction with the AICP, neural modeling and simulation of complex psychological judgements, motion analysis studies of infant motor

ICMC 457
development, original software for composition of poetry, research in poetry and hypertext instruction in metrics, psychologically sound generative notations for musical improvisation, revision of an existing dance notation in a generative manner, pitch and rhythmic perceptual studies, digital imaging of collisions between intermediate energy ions and simple molecules, and dance animation. As the Center's faculty and student assistants grow in number we expect a far greater number of projects to be forthcoming.

Conclusion

The Center for Arts and Technology at Connecticut College is used as a common link for faculty, corporate partners, and students. It is an intellectual trust for new avenues of thought that will change the way the arts and sciences forge the future at academic institutions like our own. We look forward to expanding our present constituency and to bringing guest artists and scientists to our campus to share their knowledge and take interest in the research we do. Most of all we believe that an important link has been forged between the arts and sciences on our campus and we hope that link will continue to strengthen and grow.

Publications of the Center for Arts and Technology at Connecticut College

AICP (Artificially Intelligent Computer Performer) (1991). A software program written for the Macintosh II or SE30 computer which tracks and compares a live performer's interpreative performance to a written score encoded in the computer's memory, while providing electronically synthesized accompaniment based on the mapping of performance to score. The AICP simulates a human accompanist. Created by Bridget Baird, Donald Blevins and Noel Zahler.

Music Matrix (1991). A software program written for the Macintosh II or SE30 computer designed to assist composers with the investigation of pitch complexes as they relate to music composition and analysis. Created by Jonathan Kozzi and Noel Zahler.

