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Report on Residency and Exchange  
Program in New Music Technology

Center for Research in Computing and the Arts

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## Introduction

From 1990 to 1995 the University of California, San Diego (UCSD) was involved in a computer music exchange program between its Center for Research in Computing and the Arts (CRCA), the Center for Computer Research in Music and Acoustics (Stanford University), and the Laboratorio de Investigación y Producción Musical (LIPM, Buenos Aires, Argentina). A grant funded by The Rockefeller Foundation, allowed for the exchange of composers and researchers among the three centers. Results of the exchange were presented to the public through a series of concerts, seminars, and a double compact disc of new works produced at the three centers.

When in 1989 the Residency and Exchange Program in New Music Technology was envisioned, a new phase in the realm of computer music was being initiated: we could now visualize the possibility of sharing the same computers and software at various centers in different countries. A new generation of economically accessible powerful computers running the best computer music programs available opened new perspectives in this sense. Pieces could be started at one center and completed at another. One of the purposes linked to this possibility was that of establishing consistent inter cultural relations since the program's participants would be carrying out prolonged residencies at each site in Argentina and in the U.S.

The technological advances during those years awakened in several South American countries in the region a great interest in computer music. This was due to the availability of hardware and software to a larger number of composers and to an expanding network of composers and universities throughout the region. Visits to Venezuela and Brazil proved that there existed a budding activity which deserved to be stimulated; potential whose development should no doubt

be supported. The three centers therefore agreed that it was important to extend the initial project and offer the results obtained to various other countries in Latin America.

The international residency and exchange program has provided invaluable interactions between musicians of different cultures, bringing their own unique traditions to a common interest in electroacoustic music and its attendant technologies. It has planted "seed crystals" around which future activities will develop. The results of such projects enrich future generations. The Torcuato Di Tella Institute supported an arts program in Buenos Aires during the 1960's. The music section, sponsored by the Rockefeller Foundation was developed from 1963-71. It created a concentration of artists working in the avant garde, dedicated to experimentation in the visual arts, theater, and music, providing training for young composers. The composer Alberto Ginastera founded the Centro Latinoamericano de Altos Estudios Musicales (Center of Latin American Advanced Musical Studies, CLAEM) in the Di Tella Institute, again thanks to support from the Rockefeller Foundation. A fundamental aspect of this project was the gathering of young composers from all over Latin America, who received scholarships allowing them to study and meet during the years of CLAEM, putting them in contact with teachers of the stature of Dallapiccola, Messiaen, and Xenakis, among others. Some of the 48 scholarship recipients who were at CLAEM are now key figures in the creation and leadership of art in their countries. The current Residency and Exchange Program in New Music Technology has provided a structure in which institutional and personal contacts flourished. These associations will undoubtedly lead to continued activity after the funding expires.

#### The Trilateral Exchange between the Initial Centers

The Laboratorio de Investigación y Producción Musical (Laboratory for Musical Research and Production, LIPM) is sponsored by the City of Buenos Aires as part of the city's Recoleta Cultural Center. LIPM is the oldest and most important music research institution in Latin America. LIPM conducts research on the nature of musical structures, creative processes, and composing technique, and supports an extensive array of concerts, courses, and publications. Modern technical facilities include digital synthesizers, samplers, and networks of NeXT and Macintosh computers running Music Kit, CARL software, Common Lisp Music, Common Music, Max , and Dmix. Buenos Aires considers itself more a European country than an American one, and they have long standing connections with art centers and festivals in France, Spain, and Germany. This exchange program has developed the communication between Argentina and the United States, particularly computer music centers in California, and has provided opportunities to interact with technology centers in other neighboring Latin American countries, with whom contact has been limited in the past.

Francisco Kröpfl was the principal investigator at LIPM, assisted by Julio Viera.

The Center for Research in Computing and the Arts (CRCA, formerly the Center for Music Experiment) was founded in 1972 at the University of California, San Diego. Since 1979 it has hosted the Computer Audio Research Laboratory (CARL) which is dedicated to the application of computer technology to music. CARL research centers on the design of music systems development and the production of musical works. CARL software, which includes the well-known acoustic compiler named cmusic, includes integrated signal analysis, synthesis and processing modules; it has been distributed worldwide since 1980.

Roger Reynolds and F. Richard Moore were the principal investigators at CRCA. Research associate Robert Willey assisted the exchange, along with Tim Labor, John Stevens, and Jarek Kapuscinski.

The Center for Computer Research in Music and Acoustics (CCRMA) was founded in 1975 at Stanford University to allow composers and researchers to collaborate using computer-based technology as a research tool for music. CCRMA research by faculty, students, staff and visiting scholars ranges over a vast area including musical signal processing, novel realtime control interfaces, psychoacoustics, music manuscripting and artificial intelligence. Technical facilities include extensive synthesis hardware and software including SAIL, Common Lisp, Objective-C, and Smalltalk.

Chris Chafe was the principal investigator at CCRMA. Fernando López Lezcano, originally from LIPM, has been a key contact for the project, while serving as CCRMA's system administrator.

### Residencies

The exchange program supported the travel and accommodation of researchers from the three centers. Visits varied from one week to six months in duration. Longer visits allowed for the study of new techniques and the creation of new works. Shorter visits provided opportunities to present seminars and concerts of new compositions. When LIPM visitors came to California they generally stayed at either CRCA or CCRMA for most of the time, making just a short visit to the other center for meetings and to present concerts. A list of residents sent among the three centers is included in the appendices. The fact that the three centers used compatible hardware and software environments allowed for pieces begun during a visit to one center to be finished after returning home.

### Concerts

Concerts were given at the three centers in order to present new works during the residencies. These provided opportunities to share new works for instruments and computers by exposing them to audiences. The performers who were involved in the concerts have adopted several of the compositions into the

repertoire and have continued to perform them in other situations. Attached to this report are a list of concerts given at CRCA , and of music from CRCA presented at LIPM.

## Recordings

) Intercambio/Exchange, with accompanying bilingual 49 pp. report. A double compact disk documenting the first three years of the exchange program between CRCA, CCRMA, and LIPM. Includes pieces by Pablo Cetta, Chris Chafe, Christopher Dobrian, Robert Willey, Diego Losa, Stanislaw Krupowicz, Miguel Calzón, Fernando López Lezcano, Guillermo Pozzati, David Jaffe, Tim Labor, Carlos Cerana, Rafael Liñan, Eric Lyon, and Julio Viera. CRCA, 1994. In the fall of 1995 Stanford will start its "Digital Jukebox" by putting compositions from the Intercambio CD online, making it possible for anyone connected to the network to download and listen to compositions from the CD. It is hoped that another CD or CD- ROM can be made, to document pieces made during the last two years of the exchange, including compositions by Pablo di Liscia, Javier Leichman, Fernando López Lezcano, David Horta, Jorge Sad, Juan Carlos Pampin, John Stevens, Christopher Penrose, and Robert Willey.

) Música Electroacústica en la Argentina. Works by LIPM composers Julio Viera, Fernando López Lezcano, Jorge Rapp, Guillermo Pozzati, Gustav Chab, Miguel Calzón, and Carlos Cerana. Tarka, 1994. Distributed in the U.S. by Out of the Blue Productions , P.O. Box 17594, San Diego, CA 92177.

)II SBCM. Second Brazilian Symposium on Computers and Music), in conjunction with the Brazilian Computer Society . The CD was produced by Eduardo Reck Miranda at Edinburgh University's Electroacoustic Music Studio and Robert Willey at CRCA, 1995. Compositions by Carlos Cerana, Diego Losa, Celso Aguiar, Mario Verandi, Stephen Travis Pope, Conrado Silva, Eduardo Reck Miranda, Ralf Ollertz, Victor Lazzarini, Aluizio Arcela, and Robert Willey. More information on the recording and symposium is posted.

Unpublished recordings made of concerts resulting from the exchange program may be obtained directly from the three centers.

## Extensions

) Robert Willey began an electronic network at CRCA to promote collaborative music research, production, and education. It is named " El Camino de Silicio " and is available on the world wide web in English, Spanish, and Portuguese. Links from this page take users to other computer music centers throughout the Americas, and provide another outlet for the distribution of results from the exchange program, complementing the physical travel it made possible. One of resources it includes is a connection to site at the University of Brasília produced by Aluizio Arcela, who came to CRCA in 1995 to demonstrate his work

relating graphics and sound.

A number of the composers in the exchange program have participated in " Disklavier Discovery ", another of Willey's projects. Compositions from Argentina, California, and Brazil were played on concerts at CRCA and CCRMA and placed on the anonymous ftp server wendy.ucsd.edu in the pub/midi/disklavier directory, alongside works from other centers around the world. Pieces from the archive may be transferred via the network worldwide. One of the pieces, Christopher Dobrian's composition " Entropy " from the series appears on the " Intercambio " CD.

## Brazil

Robert Willey made three trips to Brazil to give lectures and concerts at UFRGS (Porto Alegre), USP and PUC (São Paulo), UFMG (Belo Horizonte), UFES (Vitória), and the Festival de Inverno in Ouro Preto. One of the results of extending the exchange program to include Brazil has been the support of the Núcleo de Computação e Música da Sociedade Brasileira de Computação (NUCOM, the Brazilian Computer Music Group of the Brazilian Computer Society). The exchange program provided funding for personnel from LIPM, CCRMA, and CRCA to attend NUCOM's First Symposium on Computer Music in Brazil , held in August 1994 in Caxambu. It attracted significant international participation, presenting 38 papers and 40 compositions selected from submissions from all over the world. Information on the first symposium is included in an appendix.

The second symposium on computer music in Brazil will be held from July 30 to August 2, 1995 in Canela (RGS) during the annual congress of the Brazilian Computer Society. Invited speakers from CRCA, CCRMA, the Computer Music Journal , ZKM (Germany), and York (UK) will join with their colleagues from around Brazil, representing universities in Belo Horizonte, Salvador, Brasília, São Paulo, Rio de Janeiro, Campinas, and other cities. A compact disk of some of the works played at the symposium will be distributed as part of the congress' proceedings.

During the exchange CRCA hosted residencies from Brazilian professors Antonio Cunha, Rodolfo Coelho de Souza, Hubertus Hofmann, Maurício Alves Loureiro, and Aluizio Arcela.

## Mexico

The exchange program benefited from additional funds obtained through a grant from the UC MEXUS program , established in 1980 to focus the resources of the nine campuses of the University of California. This allowed CRCA to host Roberto Morales Manzanares for a month, and for him to work at UC Berkeley's Center for New Music and Audio Technologies (CNMAT). CRCA staff Carol Hobson, Chris Penrose, and Robert Willey went to UCB during Morales

Manzanares' residence for his concert and meetings. During his stay in La Jolla he arranged a jury for his university's algorithmic composition festival, which included Allen Strange (from San Jose State University), Peter Otto and Brian Ferneyhough (University of California, San Diego).

## Venezuela

LIPM's contacts in Caracas were renewed through contact with Eduardo Kusnir. Roger Reynolds participated in Eduardo Kusnir's festival through CEDIAM at the Central University of Caracas, Venezuela during their annual Contemporary Music Festival in the fall of 1994.

Servio Marin, a Venezuelan graduate of UCSD now teaching at National University in San Deigo, organized and presented the International New Music Festival in 1994 and 1995, assisted by Robert Willey. These festivals provided further opportunities to work with Joanne Carey, Max Mathews, Maureen Chowning, Fernando López Lezcano, and Chris Chafe, who came from CCRMA to perform and lecture. Composers from Latin America in general, and LIPM specifically, were highlighted during the concerts and lectures given at National University and CRCA.

In addition to the Rockefeller exchange program, Stanford continued to host Latin American visitors to its summer program. Visitors from Latin America worked with CCRMA staff and students. CCRMA hosted a special targetted workshop for the Latin American participants in 1995 offering introductory and advanced level workshops in areas of computer music, signal processing and composition. CRCA and CCRMA maintained ftp sites for the dissemination of computer music information, and collaborated on improving the network infrastructure in Latin America in support of shared, electronic educational programs, offering a future site of exchange for the new and projected Residency and Exchange Program in New Music Technology partners.

## Awards

Several of the compositions produced during the exchange have received prizes in competitions, including:

- Juan Carlos Pampin: "Apocalypse was postponed due to lack of interest". Grand Prix Internatinaux Bourges, 1994.
- Pablo Cetta: "...que me hiciste mal...", First Prize in Electroacoustic Programme Music, Bourges, 1994. This piece is the first on the " Intercambio " cd.

## Archive

Documents from the exchange, including scores, tapes, papers, and concert programs are stored in the archive at CRCA and in the University of California,

San Diego Central Library. A listing of items relating to the exchange program is attached.

#### Participating Institutions

Center for Research in Computing and the Arts (CRCA)  
University of California San Diego  
9500 Gilman Drive, 0037  
La Jolla, California 92093-0037

Laboratorio de Investigación y Producción Musical (LIPM)  
Música Sonido E Imagen  
Centro Cultural Ciudad de Buenos Aires  
Secretaría de Cultura  
Junín 1930 (1113) Buenos Aires  
Argentina

Center for Computer Research in Music and Acoustics (CCRMA)  
Stanford University  
Stanford, CA 94305-8180

Escola de Música  
Universidade Federal de Minas Gerais (UFMG)  
Av. Afonso Pena 1534  
30310-005 Belo Horizonte - MG  
Brazil

Centro de Documentación e Investigaciones Acústico-Musicales (CEDIAM)  
Universidad Central de Venezuela  
Caracas, Venezuela

The Rockefeller Foundation  
420 Fifth Avenue  
New York, NY 10018-2702

#### Appendices

- Archive listing
- Biographical sketches of participants
- List of CRCA concerts in San Diego and Buenos Aires
- Program from the First Symposium on Computer Music in Brazil
- Program from the International New Music Festival
- Bibliography

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The Center for Research in Computing and the Arts is an organized research unit of the University of California, San Diego.

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<http://crca-www.ucsd.edu/bobw/intercambio.html>

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