

December 21, 1977

TO: John Stewart
Provost
Muir College

RE: Reviews - CME Computer Conference

I have enclosed a program and several reviews from the 1977 International Computer Music Conference that I thought would be of interest to you. It was an exhausting, but extremely rewarding experience for all of us at the Center. It provided an opportunity for many distinguished visitors from the US and abroad to visit the University and to promote exchange and goodwill.

Pauline Oliveros

Pauline Oliveros
Director



**1977 INTERNATIONAL
COMPUTER MUSIC
CONFERENCE**

OCTOBER 26-30

UNIVERSITY OF CALIFORNIA, SAN DIEGO

1977 INTERNATIONAL COMPUTER MUSIC CONFERENCE

Center for Music Experiment and Related Research
Department of Music
University of California at San Diego

October 26-30, 1977

Conference Committee: Robert Gross
Jean-Charles Francois
Bruce Rittenbach
Bruce Leibig
Wilbur Ogdon
Pauline Oliveros
Bernard Rands

Previous Conferences:

1974	Music Computation Conference	Michigan State University David Wessel, Chairman
1975	Music Computation Conference II	University of Illinois James Beauchamp John Melby Herbert Brün, Chairmen
1976	First International Conference on Computer Music	Massachusetts Institute of Technology Barry Vercoe, Chairman

Events will be held at the Center for Music Experiment 408 Warren Campus (CME), Mandeville Center Auditorium and Recital Hall, and Room 2722 in the Undergraduate Science Building (USB). The PCS 500 Music CRT will be on display Saturday from 10:00 a.m. to 4:00 p.m. in Room 125 Mandeville Center.

All papers submitted to the conference will be available at the Reserve Section of the Circulation Desk in the Central University Library at the following times: Wednesday, Thursday, 8 a.m. - 10 p.m.; Friday, 8 a.m. - 6 p.m.; Saturday, 9 a.m. - 5 p.m.; Sunday, 2 - 10 p.m.



Marcia Rubish

Computer music takes spotlight ⁰⁹⁷

Oct. 26-30, the UCSD Center for Music Experiment will host the 1977 Computer Music Conference—a weeklong event featuring a wide range of performances as well as lectures by some of the most eminent researchers in the field.

One of the foremost talks will be a Studio Report, Thursday, Oct. 27, at 2:30 p.m. by Barry Lloyd Vercoe, assistant professor and director for experimental music at the Massachusetts Institute of Technology.

Also Thursday noon in Mandeville Auditorium, UCSD faculty member Bert Turetzky of Del Mar will perform David Behrman's "Sola for Bass and Melody Driven Electronics."

research in Toronto resulting in new methods of relating brain activity to investigation of aesthetics.

As director of the program, Pauine Oliveros said, "the meeting under one roof of such noted authorities will insure a meaningful give-and-take for all involved."

The composer, who will himself coordinate the electronics, has studied with some of the most important contemporary composers including Piston, Stockhausen and Pousseur. He is also co-founder of the Sonic Arts Union—a group that has appeared widely in the U.S. and Europe presenting individual and collaborative music using simple or sophisticated electronics, photography, film and theater.

Jon Howard Appleton, winner of Guggenheim and Fulbright fellowships, will also appear at 2 p.m. Friday, Oct. 28.

Appleton has been faculty member and director of the Bergman Electronic Music Studio at Dartmouth since 1968 and in 1973 won second prize in the Concours International de Musique Electro-acoustique. His composition, "In Deserto", is on the schedule.

Another guest, David Rosenbloom, has done

CME fellow, Rob Gross, coordinator of the event, stressed that non-musicians and initiates of this new field are especially welcome.

Each day of the five-day conference features an ongoing Computer Arts Exhibition in the Man-

deville Recital Hall.

Saturday's events (Oct. 30) will culminate in a full concert of performances with tape, at 8 p.m. in Mandeville Auditorium.

All events are free. For further details, call UCSD Center for Music Experiment, 452-4383.

Avante-garde ⁹⁷ music, dance set next week

On Friday, Oct. 21 at 8 p.m. the UCSD Music Department will present an evening of music, light painting, and dance in the recital hall of the Mandeville Center.

The works to be presented are "Chant," a new piece by Martin Grusin in which dance and light become extensions of musical timbre; "Midnight Rainbow," also by Grusin for Moog synthesizer and light painting; and excerpts from "Requiem" by Deborah Kavasch for four channel tape and voices featuring the Extended Vocal Techniques Ensemble of the Center for Music Experiment.

"Chant," made possible by a grant from the National Endowment for the Arts, will feature Kim Pauley dancer, and John Forkner creator of the Tympanum Luminorum, a performer controlled light instrument which creates kinetic abstract light paintings.

Kim Pauley was a fellow in dance at the Center for Music Experiment in 1973-74. She has appeared at the Monday Evening Concert Series in Los Angeles.

The concert is free to the public. For information call 452-3229.

OCT 15 1977

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NEVA PILGRIM:

Soprano will perform with non-harmonic frequencies of "Inharmonique" by Jean-Claude Risset at Computer Music Conference at UCSD.

Computer music on tap at UCSD

In addition to many technical-oriented lectures, the 1977 Computer Music Conference, Oct. 26-30 on the UCSD campus, will also include exhibits and concerts of interest to all music-lovers — especially those who would like to expand their knowledge and appreciation of avant-garde works.

The program on Saturday night, Oct. 29, at 8 p.m. in the Mandeville Auditorium is the culminating event of the conference.

One of the works will be "Traveling Music," performed by pianist Dwight Peltzer and composed by Loren Rush. Rush of the Stanford Computer Center has been awarded a number of fellowships and prizes including the University of California's Prix de Paris, the Rome Prize of the American Academy in Rome, a Guggenheim Fellowship, and grants from the National Endowment for the Arts.

Jean-Claude Risset will come from the Institute for Research in Acoustics in Paris to present his work "Inharmonique," a piece composed almost entirely of non-harmonic frequencies giving it a very different effect than the sounds produced from traditional instruments.

The work's original interpreter, soprano Neva Pilgrim will perform. Pilgrim has served as artist-in-residence at Hollins College, the Cleveland Institute, and Oberlin. The New York Times has praised her performances of difficult new scores as remarkable for their "musical security and sensitivity, vivid textual projection, and glowing tonal beauty."

Admission to all events is free. For further information, call 452-4383.

SAN DIEGO
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SAN DIEGUITO
CITIZEN
OCT 19 1977

Side effects and all...

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Computer music planned

The fact that two West German psychiatrists have reported that constant exposure to contemporary music produces strange side effects on its performers has not dampened the spirits of the UCSD Center for Music Experiment.

On Oct. 26-30, the center will boldly proceed in hosting the 1977 Computer Music Conference -- a week-long event featuring a wide-range of performances as well as lectures by some of the most eminent researchers in the field.

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Appleton has been faculty member and director of the Bergman Electronic Music Studio at Dartmouth since 1968 and in 1973 won second prize in the Concours International de

Musique Electroacoustique. His composition, "In Deserto," is one of the highlights of the schedule.

All events are free. For more details call UCSD Center for Music Experiment 452-4383.

SAN DIEGO
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LA JOLLA LIGHT

NOV 17 1977

Experimental music reruns⁹⁷

A concert at the UCSD Center for Music Experiment (CME), 408 Matthews Campus, will provide a second opportunity to hear some of the most successful pieces of last year, together with a group of English Musical Theater pieces never before seen in San Diego.

"Obdobra", for three percussionists, was written by UCSD faculty composer Jean-Charles Francois for performance in Paris. Last summer he presented it here. On November 21 at 8. p.m., audiences will have another opportunity to hear the work.

One of the theater pieces on the program is "Merci" by Steve Scanton, "a witty portrait of a street musician past his prime." "Dum's Dream," by Roger Marsh, is described as a "hilarious verbal nightmare."

"Ambience" for trombone and tape, by Richard Orton, will be given its first U. S. performance as well as "Voicetest," a composition for three speakers by Glyn Perrin.

David Jones, assistant director at CME, will be

represented by his recent work "Pastoral" for singer and tape.

The concert is free and open to the public. For information, phone 452-4383.

Computer music scores

Theater and Arts



Robert Gross, coordinator for the Computer Music Conference at UCSD, is shown debugging electronic hardware.

The fact that two West German psychiatrists have reported constant exposure to contemporary music produces strange side effects on its performers has not dampened the spirits of the UCSD Center for Music Experiment.

Wednesday through Sunday the center will host the 1977 Computer Music Conference - a week-long event featuring a wide range of performances as well as lectures by some of the most eminent researchers in the field.

One of the foremost talks will be a studio report next Thursday, at 2:30 p.m., by Barry Lloyd Vercoe, assistant professor and director for experimental music at the Massachusetts Institute of Technology.

Also, on Thursday

noon in Mandeville Auditorium, UCSD faculty member Bert Turetzky will perform David Behrman's "Solo for Bass and Melody Driven Electronics." The composer, who will himself coordinate the electronics, has studied with some of the most important contemporary composers including Piston, Stockhausen and Pousseur. He is also cofounder of the Sonic Arts Union - a group that has appeared widely in the U.S. and Europe presenting individual and collaborative music using simple or sophisticated electronics, photography, film and theater.

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Another guest, David Rosenboom, has done research in Toronto resulting in new methods of relating brain activity to investigation of aesthetics.

As director of the program, Pauline Oliveros says, "The meeting under one roof of such noted authorities

will insure a meaningful give-and-take for all involved."

CME fellow, Rob Gross, coordinator of the event, also stressed the fact that nonmusicians and initiates of this new field are especially welcome. "These concerts and sessions will prove an ideal introduction to the most recent developments in contemporary music," he said.

Each day of the five-day conference features the computer arts exhibition in the Mandeville Recital Hall. Saturday's events, Oct. 30 will culminate in a full concert of performances with tape; at 8 p.m. in the Mandeville Auditorium.

All events are free. For further details call UCSD Center for Music Experiment 452-4383.

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Computer music discussed

LA JOLLA — The Center for Music Experiment at UCSD will hold a computer music conference from Wednesday, to Sunday, Oct. 30.

In addition to lectures and technical discussions, there will be exhibits and performances for music lovers who want to expand their knowledge of avant-garde music.

Some of the speakers will be Barry Lloyd Vercoe of Massachusetts Institute of Technology at 2:30 p.m. Thursday, Oct. 27, and Jon Howard Appleton, Guggenheim and Fulbright award winner and director of an electronic music studio at Dartmouth University, at 2 p.m. Friday, Oct. 28. All sessions are in Mandeville Center.

Performances will include a work by David Behrman for bass and melody-driven electronics at noon Thursday in Mandeville auditorium with the composer coordinating the electronics.

A final concert at 8 p.m. Saturday, Oct. 28, will feature "Traveling Music" by Dwight Peltzer, pianist, and Loren Rush, composer, and "Inharmonique" by Jean-Claude Risset of Paris.

All lectures and concerts are free to the public. There also are informal, continuous presentations of recently composed tapes each day of the conference. Further information may be obtained by calling the UCSD music department.

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Louise Spizizen



Brutal baton

expressive and sturdy, is so familiar that it can no longer invite our full attention.

We looked forward to hearing Van Cliburn, the piano soloist, in the Concerto No. 2 by Liszt, less often played than No. 1. Alas, it was not to be. A program change was announced: It was No. 1, after all.

Cliburn gave a workmanlike performance; the orchestra, after a lot of unsteadiness in the opening movement, pulled together a workmanlike accompaniment.

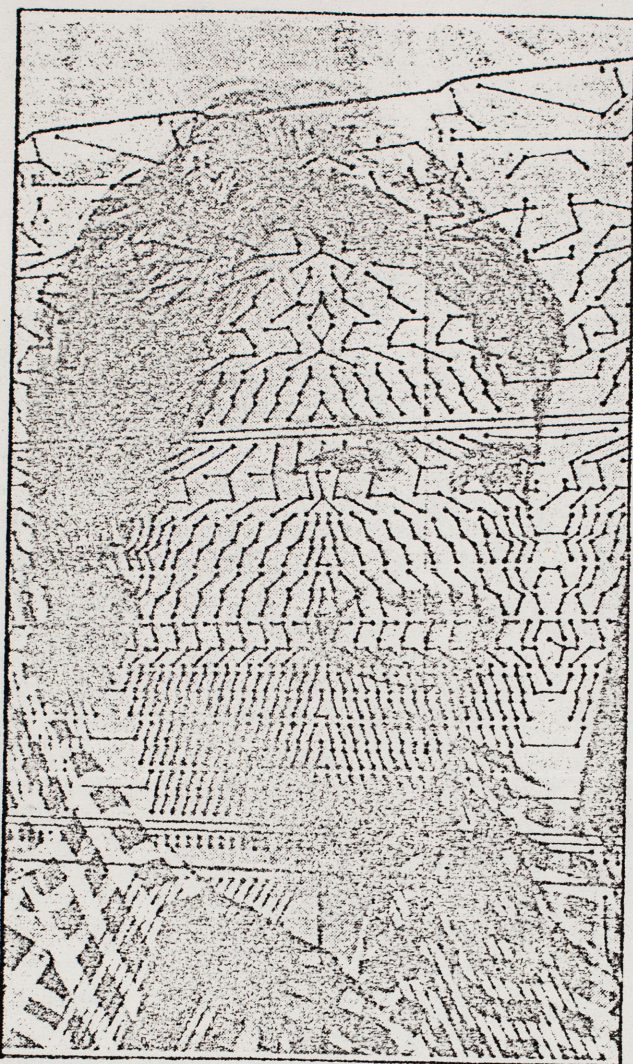
The happy audience applauded enthusiastically after every movement of each selection.

On Saturday we went up to Mandeville Center to hear the concert of the International Computer Music Conference, being hosted this year by UCSD. When we arrived, everyone was milling about outside the hall, in pitch blackness.

After a few speculations that this circumstance might be the first piece on the program, it was announced that a campus fire had knocked out the electric power, postponing the concert until next day.

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PAULINE OLIVEROS, UCSD

THE FACT THAT two West German psychiatrists have reported that constant exposure to contemporary music produces strange side effects on its performers has not dampened the spirits of the UCSD Center for Music Experiment. On the contrary, the center is hosting the 1977 Computer Music Conference—a five-day event featuring a wide range of performances, exhibitions, and lectures by some of the most respected researchers in the field of experimental music. The conference is intended to introduce veterans and initiates alike to the most recent developments in contemporary music, and will include during its duration:

Thursday, October 27: faculty member Bert Turetzky will perform David Behrman's "Solo for Bass and Melody Driven Electronics," with the composer himself—who has studied with such contemporary composers as Piston, Stockhausen, and Pousseur—coordinating the electronics, noon, Mandeville Auditorium.

Saturday, October 29: a full concert of performances with tape, including soloists on clarinet, voice, piano, and percussion, 8 p.m., Mandeville Auditorium.

Throughout the conference, a Computer Arts Exhibition will be on display, with the playing of audio and video tapes scheduled for Thursday, October 27, 4 to 7 p.m.; Friday, October 28, noon to 3 p.m., and 4:30 to 7:30 p.m.; Saturday, October 29, 9:30 a.m. to 12:30 p.m., and 4 to 7 p.m.; and Sunday, October 30, 9 a.m. to noon, and 2 to 5 p.m. Highlighting the exhibition will be talks by Gary Schwede entitled, "A Model for Real Time Visual Interpretation in Musical Experiences," on Friday, at 1 p.m.; and by William Fetter on "Three Computer Graphics Research Activities Applicable to the Arts," on Saturday, at 5 p.m., all of which will take place in the Mandeville Center Recital Hall. For further details, call the UCSD Center for Music Experiment at 452-4383.

SAN DIEGO
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LA JOLLA LIGHT

OCT 27 1977

'Soul' versus machine 97

The last week in October is a particularly active and diversified week for the UCSD music department.

The UCSD Gospel Choir, directed by Cecil Lytle, will present its first concert of the season Oct. 31 at 8 p.m. in Mandeville Auditorium.

Compositions by Lytle as well as Edwin Hawkins and Andre Crouch will highlight the evening, and as a special attraction, The Young Messengers will appear. The Los Angeles-based gospel ensemble directed by UCSD student Pamela Edwards will perform selections from their new album, "His Light."

The UCSD Gospel Choir is composed of 32

singers and instrumentalists who perform indigenous Afro-American sacred music, spirituals and gospel songs.

Since joining the UCSD Music Faculty two years ago, Lytle founded the Gospel Choir and several jazz ensembles as part of the Afro-American Music Program at UCSD.

* The 1977 Computer

Music Conference, sponsored by the UCSD Center for Music Experiment, continues through Sunday.

Today at noon, the Conference will offer a major work for live electronics and contrabass, performed by composer David Behrman and bassist Bertram Turetzky of Del Mar.

On Saturday at 8 p.m.

in the Mandeville Auditorium a concert of performances with tape will be the culminating event of the conference.

Concerts are free.

SPLENDID CABARET, POOR THEATER

"The Act' Mainly A Show

By RICHARD EDER

New York Times News Service

NEW YORK — "The Act" is precisely what its name implies: It is an act, and a splendid one. On the other hand, it is a little less than its pretensions imply. Theatrical though it is as a performance, it is indifferent musical theater.

It displays the breathtaking presence of Liza Minnelli, and her command of force that is the emotional equivalent of what a good coloratura achieves in top form — although in her case it is a mixture of singing and other things. It has a small but brilliant chorus line; and its costuming, lighting and all-over cutting edge are a kind of vaunting of the talent available to American show business.

In its bumpy trip across country "The Act" is said to have had serious directorial problems. By the time it opened Saturday night at the Majestic Theater, and whatever the relative contribution of Martin Scorsese, the original director and Gower Champion, who was called in to help out, its pace and staging were polished and imaginative.

What is mainly lacking in "The Act" is a book. George Furth's story about the professional and personal troubles and triumphs of an insecure movie star who comes to a nightclub performer, is not just thin; it hardly pretends to be there at all. It has little development or characterization of its own; and except for a stray line or two, only the

most trite and synthetic dialogue.

It is not really trying, in fact, to be much besides a device to show off Miss Minnelli and her supporting performers. It is a kind of continuity between numbers — when it attempts to be anything more it tends to be embarrassing — and as a result "The Act" is a first-rate cabaret show expanded for theater, rather than theater itself.

There is no mutual development between Miss Minnelli and the character she plays — Michelle Craig — as there was between Ethel Merman and Annie in "Annie Get Your Gun," or between Carol Channing and Lorelei Lee in "Gentlemen Prefer Blondes." The role is not a vehicle for Miss Min-

Electronic Music A Reality, UCSD Conference Shows

By KENNETH HERMAN

The coming of age of electronic music is a present reality, judging from the breadth and richness of musical offerings heard at the 1977 International Computer Music Conference.

The event was hosted last week by the Music Department of UCSD and the university's Center for Music Experiment. Like other types of music, electronic music may be stimulating or soporific. Works such as Irmfried Radauer's "Ockeghem 1977" fit the former category with rich organ-like sonorities and complex, engaging texture.

At the other end of the spectrum, William Matthews' "Field Guide" displayed a variety of effects, but insufficient coherence to sustain interest.

One of the most impressive works heard was Claude Risset's "Inharmon-

ique." Soprano Neva Pilgrim realized the vocal part of sustained vowels (there was no text) surrounded by equally sustained electronic clusters. Pilgrim's clear and appealing voice matched well the bell-like electronic sonorities.

The composer, Risset, was part of the international community of electronic composers present at the conference and appeared on a panel yesterday. With other colleagues from the United States and Sweden he discussed the relationship of the composer to the design of computer programs which translate the composer's ideas into sound. This function may be compared to a traditional composer's task with the sophisticated nature of the computer, some contemporary composers feel they are entitled to the mediation of computer engineers. While electronic music is

rightly hailed as a new language of music, that does not mean that all traditional elements must be forsaken. "Organum—From Canto LXXXI," composition by Carlton Gamer, uses a text from the poetry of Ezra Pound.

Gamer has sheathed the spoken text in reverberant sonic columns, in which each word is unmistakable, yet given new depth by electronic manipulation.

"Contrapunctus 1977" by Dean Wallraff was even more traditional with its simple fugal lines not unlike the Moog synthesizer's rendition of Bach inventions.

Of longer works, Marc Battier's "Objets empruntés" (borrowed objects) sustained intense interest with very sparse textures splashed from time to time with almost recognizable allusions to the rush of water, the high chirp of a bird, or crashing glass. Another faintly naturalistic "program" could be assigned to the Australian Barry Conyngham's "Through Clouds." His more compact work enveloped the audience in opaque sound densities.

This computer music conference was the fourth annual of its kind and the first to be held on the West Coast. The participants completed their five days of listening, reading papers, and cordial debate with but one ironic wrinkle. The Saturday evening program, a highlight of the conference, was nearly canceled because of a massive blackout on the Muir College campus, where the music buildings are located. Surely the only calamity more disastrous than a prima donna with laryngitis is a program of electronic music with no current.

Notables

Joan Mondale, wife of Vice President Walter Mondale, played in a sculptured playground yesterday and told an international group of city managers the arts are vital to boosting tourism and convention business for cities. As the Carter administration's arts advocate, Mrs. Mondale told 3,000 members of the International City Management Association in Atlanta "the arts are a key ingredient in the attraction of tourist dollars." She then visited an Atlanta playground designed by Japanese sculptor Isamu Noguchi, swinging on a modern-art swing next to Atlanta Mayor Maynard Jackson, but declining to slide down a sliding board.

will recuperate at home.

Billy Carter has lent his name to a new brand of beer and his pickup truck will be immortalized in a toy model too. President Carter's brother will officially introduce "Billy" beer Monday in Plains, Ga. Meanwhile, toy-maker Revell Inc. is displaying "Pedneck Power Pickup" kits, slated for sale next spring. The kit will come complete with a CB radio and a tiny six-pack of beer in the back.

Tom Fletcher of St. Paul, Minn. builds dollhouses for a living — and his work could be hard on his waistline. With the help of his dog, Poikin, Fletcher has de-

— COURTESY —

MUSIC REVIEWS

Two Concerts at Computer Music Conference at UC San Diego

The union of science and art became exhilarating reality last week as composers and engineers from around the world converged on UC San Diego to participate in the 1977 International Computer Music Conference. The wooded campus provided an idyllic background for day-to-night sessions of paper readings, equipment exhibitions, visual displays, lectures and concerts.

Two computer music programs held Friday and Saturday evenings climaxed the five-day proceedings. Friday, chief interest centered around "Pastoral" by David Jones, whose computer-processed solo vocal part achieved a heightened form of poetic declamation, and "KIVA" by John Silber and Jean-Charles Francois, a dramatic hour-long improvisation of electronics, computer-generated sounds and unconventionally played acoustic instruments.

On Saturday, two significant works, "Effetti Collaterali" by James Dashow and "Inharmonique" by Jean-Claude Risset, proved the viability of combining real-time performance with computer-generated sounds.

Compositional parallels existed between the two large works ("Effeti" lasting about 12 minutes and "Inharmonique," 15). Each pitted a single live protagonist (in the first, a clarinet, in the second, a soprano) against the supersounds of digitally generated FM timbres. In both pieces the solo part suggested serial pitch organization, while the taped chime- and gonglike events resonated with indeterminate frequencies. Logical sectionalization and coherent panning patterns strengthened the two structures. Each explored timbral and antiphonal relationships of live and electronic sounds.

However, the clarinet sounds, superbly executed by Philip Rehfeldt, resulted in a more successful timbral blend with the electronic ones than did the human "ahs," "oos," gasps, moans, sighs, hums and sibillants efficiently projected by Neva Pilgrim. Her unmiked voice failed to couple acoustically with the speakers' output, the two sound streams remaining in separate planes.

"Traveling Music" by Loren Rush sparkled, its extended E dominant powerfully resolving to a symphonic A-major tonic chord. Pianist Dwight Peltzer's inexhaustible left hand pounded out repeated tones ornamented heterophonically by his right hand, while the speakers provided a background of computer generated sitar- and banjolike sounds along with percussive bass events.

Herbert Bruin's "Plot," played with tongue-in cheek frenzy by Jean-Charles Francois, satirized contemporary percussion gestures.

Jon Appleton's lyric "In Deserto" and Wesley Fuller's piano-tape "Time Into Pieces" rounded out the program.

—PHILIP SPRINGER

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adv for week beginning Dec 4<

- HORIZONS WST --
By RON HUTCHINSON, UPI

SAN DIEGO (UPI) - Imagine a musician playing a computer, or even farther out, a computer playing a musician.<

They're doing it at the more progressive colleges of music, and it may well become commonplace in the future.<

The results can be mellow and smooth like the enhanced richer-than-life voices of a cello. Or, as with other forms of dehumanization, mindless clanging and jarring occurs. It depends on what the composer wants.<

There are three basic approaches:<

-Using a computer to control settings on synthesizer modules.<

-Having a computer produce a composition.<

-And using a computer in the performance of already conceived musical ideas.<

Combinations go both to mixing the approaches and combining live play by a musician with computer assistance to develop a man-machine interplay.<

That interaction was demonstrated at this fall's International Computer Music Conference at the University of California at San Diego.<

David Behrman, director of the Center for contemporary music at Mills College at Oakland, and Bertram Turetzky, associate professor of music at the UCSB, played in concert - Behrman on a computer and Turetzky on a custom-made electric contrabass.<

Behrman operated a conference table full of electronic devices including a minicomputer, oscillators and synthesizer modules. Turetzky improvised around notes and chords cued to him by Behrman.<

The resulting music coming from four large speakers was a blend of computer synthesized sounds Behrman commanded the computer to level, man-made sound and new sound patterned by the computer in reacting to the man-made sound.<

Bass definition was heightened and given new colors, and Turetzky produced effects ranging from warbles to percussive taps and plucks. There were no eerie, futuristic sounds.<

"Artists need access to the most current tools in modern technology in pursuit the most effective means of carrying out their works," Pauline Oliveros said in introducing the two men at the concert. She is an associate professor of music at the UCSB, a recorded composer of electronic music and director of the school's Center for Music Experiment.<

She also made an observation indicative of the future of her genre: students aren't attracted to colleges of music that do not offer vigorous computer music programs.<

The history of computer music goes back to the synthesizer, Elliott Schwartz, author, composer and associate professor at Bowdoin College, wrote in his book, "Electronic Music."<

"The modular synthesizer enables a composer to alter pitch, timbre, duration and other factors ... by applying control voltages to various electrical signals," he said.<

He said a synthesizer is made up of various modules, each about the size of a small transistor radio, that can be activated in a wide variety of combinations for different sonic functions - sound generation, sound modification, voltage control generation and voltage control processing.<

The activation, or playing, of the synthesizer can be by hand, as with a keyboard, or by computer.<

Music is not the only goal. As indicated by technically back, rounded speakers at the conference, companies like Bell Telephone are researching the practical aspects of computer-generated signals for transmitting voices and information around the world.<

It is a field that has not hit the street yet. Names of the topics at the conference point to the sophistication required. Among them: hybrid systems of microprocessors, behavior of users of interactive computer music systems and composing grammars and envelope control with an optical keyboard.<

hold on to your headsets.<

adv for week beginning Dec 4<