

New Media Fellowships
2004 Project Cover Form

Gregory Niemeyer

Title: Organum

Genre: Interactive Media

Applicant's Role in Production: Director, Producer

Production Format: PC Multi-Player Role Playing Game (MRPG)

Brief Project Description (do not exceed space given below)

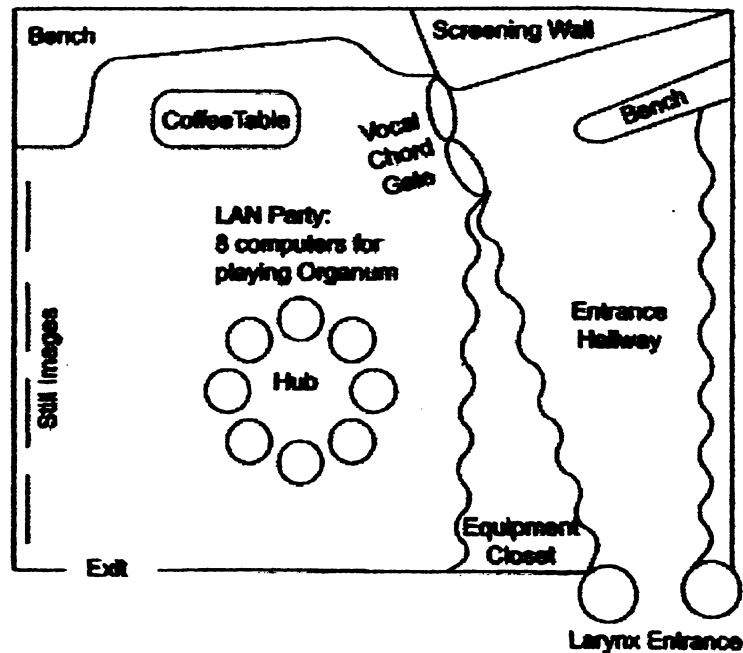
Since 2002, I collaborate with composer Chris Chafe, computer graphic (CG) artists Lorenzo Wang and Christine Liu, and with game theorist Jane McGonigal to create a simulation of human organs which unfolds in three media: print, recombinant cinema, and online gaming. The print version and recombinant cinema version premiere Oct 30, 2003 at the Berkeley Art Museum. I am seeking the support of the Program for Media Artists to complete the online Organum game.

Organum plays in an online multi-player simulation of a surreal ecosystem inhabited by a cast of organs, including a brain, a lung, and a stomach, and a set of AI (artificial intelligence) cyborgs. The game involves up to 32 people playing together in one session of Organum. The goal of the game is for players to stay alive in the fragile ecosystem as long as possible by ensuring the well-being of both themselves *and* their ecosystem. If successful, the community of players advances to a higher level of cultural achievement. Unsuccessful players drop out and have to join another game session.

Players join a game session as a "stem cell". Gradually "stem cells" develop into "organs" and contribute their specific abilities and needs to the ecosystem. Together, these organs strive for a balance that ensures their survival: Brains distribute cognitive data and ideas to other organs. Immobile, these brains are powered by the harmony of singing "lungs" and by glucose deliveries from "stomachs". The lungs also sing to "plants" to encourage their growth. Frequent singing requires visits to the brains and to stomachs. Stomachs forage on plants to satisfy the collective appetite. If the brains do not get enough visits from lungs, the brains swell up, consume more food, and eventually explode. Likewise, each organ has to meet its own conditions for survival, and provide for the well-being of the ecosystem.

Organum unfolds at the complex boundaries between nature and technology, and between individual and collective. For a wide audience, we believe *play* is the most generative mode of interaction with the charged themes located at those boundaries: post-human biology, identity, and environmentalism. The support of the Program for Media Artists, allows us to develop the game to unite the gameplay standards of online gaming communities with the cultural and aesthetic standards of traditional art audiences.

The following floor plan describes the ideal installation of Organum including a hallway with a video screening wall, a lounge with benches, the computer cluster (LAN party) where the Organum game can be played, the still images exhibition wall and the exit. The course through the installation is counterclockwise. Materials include Silicone Rubber sheets for the wavy walls and standard drywall and framing materials for the other elements. The LAN party furniture is standard museum furniture. All hardware (server, network, video source and projector) is stored in the equipment closet.



Greg Niemeyer

If you are sending more than one sample, please copy this page. Sample(s) must be cued: indicate how long each sample should be viewed for a COMBINED viewing time of no more than 15 minutes. If slides are included in this application, please list the title and year of the work on this form.

Title: Organum Full Motion Video (FMV) Clips

Year: 2003

Technical Information

Original Format	Format Submitted for Viewing	Preferred OS
☐ Software	☐ Software	☒ Windows: Use Quicktime
☐ Web	☐ Web	☒ Mac: Use Quicktime
☐ Installation	☐ VHS	☐ Unix
☒ Other: Game FMV	☒ Other: CD_ROM	☐ Other _____

Web Information (answer only if sample work is in Web format)

☐ URL _____ (if more than one please list them below)
☐ Browser requirement(s) _____
☐ Plug-in requirement(s) _____
☐ This sample requires broadband connection (fast Internet connection)
☐ A local copy of the sample work has been included with the application

Special Information for Screening:

Description of Work (use an additional sheet if necessary)

Viewing time for both sequences: Loop each clip for 2 minutes. These two Full Motion Video clips, **01_Reverse Kiss** and **02_Departure**, are a part of both the Organum Game and the Organum Movie. In the movie, they are two of about 50 animation scenes playing in a non-linear order which is recombined at each presentation. In the game, these scenes, commonly referred to as FMV (full motion video) are non-interactive components of the game meant to set up a following game level.

In the game level following the **01_Reverse Kiss**, the player controls one of the two larynx-creatures to respond to the kisses of another creature. The other creature is controlled by another online player. A player can control the position of the character, the position of the larynx, the position of the tongue, the initiation of a kiss, and the singing. Successful kisses allow other online players to enter the game as "stem cells". The stem cells evolve into organ characters who help formulate a sustainable ecosystem in the game environment. (see next page for more information)

In the game level following 02_**Departure**, the player controls one of the Pipecopter Characters, the characters which follow Hypersampo, the hybrid lung-mechanical creature with the big yellow ring-lips. The player's character has to sing the right song to convince Hypersampo that it is a worthy companion. If it qualifies, the player's character follows Hypersampo through a complicated maze of caves with falling rocks and attempts to reach a new valley, where the game continues.

With these two scenes, I intend to demonstrate the visual and animation quality of "Organum". Both clips are full motion video, and they use the Cinepak and the DV compressors. They should play flawlessly on a PC with recent versions of Quicktime or Windows Media Player. Both clips have sound, which is an important component of the clips' aesthetic.

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Title: Organum Full Motion Video (FMV) Clips

Year: 2003

Technical Information

Original Format	Format Submitted for Viewing	Preferred OS
☐ Software	☐ Software	☐ Windows
☐ Web	☐ Web	☐ Mac
☐ Installation	☐ VHS	☐ Unix
☒ Other: Text	☒ Other: Print	☐ Other _____

Web Information (answer only if sample work is in Web format)

- ☐ URL _____ (if more than one please list them below)
- ☐ Browser requirement(s) _____
- ☐ Plug-in requirement(s) _____
- ☐ This sample requires broadband connection (fast Internet connection)
- ☐ A local copy of the sample work has been included with the application

Special Information for Screening:

Description of Work (use an additional sheet if necessary)

The following text is a linear narrative taking place in the Organum environment featuring many of the Organum game characters. It a companion piece to the recombinant video and the game, and will be exhibited alongside the large still prints and the LAN rig (computers networked for a LAN party).

Greg Niemeyer

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Title: Extrasensory Perceptions

Year: 2002

Technical Information

Original Format	Format Submitted for Viewing	Preferred OS
☐ Software	☐ Software	☒ Windows
☐ Web	☐ Web	☐ Mac
☐ Installation	☐ VHS	☐ Unix
☒ Other: SOUND recording	☒ Other: Music CD	☐ Other _____

Web Information (answer only if sample work is in Web format)

☐ URL _____ (if more than one please list them below)

☐ Browser requirement(s) _____

☐ Plug-in requirement(s) _____

☐ This sample requires broadband connection (fast Internet connection)

☐ A local copy of the sample work has been included with the application

Special Information for Screening:

Description of Work (use an additional sheet if necessary)

Viewing time for Music CD: Play first 2 minutes of Track 1 and first 2 minutes of Track 2. This supplement shows previous collaborative work by Chris Chafe and Greg Niemeyer. All recordings are representations of live interactive music generated by the Oxygen Flute and the PING installation. The Organum Game uses similar sound engines to generate all sounds in real time.

Greg Niemeyer

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Title: Organum Narrative

Year: 2003

Technical Information

Original Format	Format Submitted for Viewing	Preferred OS
☐ Software	☐ Software	☒ Windows
☐ Web	☐ Web	☐ Mac
☐ Installation	☐ VHS	☐ Unix
☒ Other: Text	☒ Other: Hard Copy	☐ Other _____

Organum Artists Statement:

What is new media? There is a market-oriented definition of new media which is associated with the historically conditioned novelty of specific tools of reproduction, such as the camera, or the mp3 player. However, that novelty has a very limited meaning if these new tools accomplish the same things previous tools have accomplished, or short, if these new tools don't do new things. New media then are tools which produce new forms of reproduction, or new languages. Historically, each new media is caught up in the languages of old media until the new language emerges which suits the new media. Photography was first caught up in the language of drawing or painting, and eventually developed its own photographic language of time, perspective and situation.

Through my artwork, I participate in the formulation of a new language for the new medium of networked computing. In my early projects, I installed site-specific photographs in buildings at an architectural scale (*Gravity*, 1992). These photographs made their information a part of the spatial experience, and information could become a dimension of space. In this project, I covered the floor of elevators with full-scale images of excavations of graves. The image revealed a level of complexity in the architecture: the excavations required for building elevator shafts often reveal remains of previous human activity, which often includes graves.

This process of revealing the complexity of a situation continues through many projects. *PING*, 2000, (with Chris Chafe) shows the complex patterns of network transfer speeds between one server and 8 remote hosts. Ping produces music and lights which translate these complex patterns into a "digital mood" akin to looking at a beautiful landscape from a vista point. This sudden overview allows for a poetic appreciation of the flow of data in a data network.

In *Oxygen Flute*, 2002/2003, Chris Chafe and I tried to show the subtlety and complexity of an instance of the carbon cycle: In a greenhouse-like chamber, visitors can hear their exchange of carbon dioxide with the surrounding bamboo. Visitors can also hear the exchanges of past visitors with the plants. *Organum*, our current project, provides an interactive model of such interactions, where individual players play post-human organs trying to survive in a given ecosystem. Here, understanding the complexity of the model is a path to finding harmony in it.

With these projects, I explore the potential of new media to allow us to embrace complexity. Being a member of a global economy requires that embrace of complexity. The reaction to global economy, separatism, illustrates the challenge of that embrace: Our perceptions are not sufficiently abstract or sufficiently precise to understand the effect of our decisions on a global scale. I, too, am intellectually barely capable of understanding our global situation. New abstractions, new insight, new values are required to enable that understanding.

I also am emotionally challenged to feel the impact of our decisions on a global scale, or even to deal with the flow of information reaching me from around the globe. As a member of the information class, I feel a responsibility to narrow the gap between information and action: That embrace of complexity is an experience in search for a language, and that language I believe, is new media.

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Organum Project Narrative:

Please note: The following text is written as a fictitious account of how the Organum installation is to be experienced.

On November 4, 2004 the "Fictitious Museum of Art" opens the doors to a new type of museum experience: The LAN party. Organum is an Installation which allows visitors to collectively play a computer game by a collaborative group of artists including Greg Niemeyer, Chris Chafe, Lorenzo Wang, Christine Liu, and Jane McGonigal. Visitors enter the installation through a giant model of a human larynx (the voice-producing organ). The larynx model offers a tactile way to explore the forms visitors see in the Organum game, prints and movie. The larynx leads visitors into a hallway shaped like a trachea, with undulating, white, silicone-rubber sheeted walls. The narrow hallway widens towards the end. At the end, a 10 by 10 foot wall projection shows scenes from the Organum movie recombined and looping. These scenes show visitors animations of a group of autonomous organs struggling to find balance in a small valley. The setting is post-human, but not post-nature. These scenes set the stage for the strange world of Organum. Simple benches (wood frame and silicon rubber coverings) let us visitors sit and watch the complete sequence of scenes, which lasts about 9 minutes. The movie also introduces us to the unusual sounds of Organum. The sounds are generated by mathematical sound synthesis models. The inputs to these models are actual animation data from the CG animation, so there is a tight and uncanny coupling between the movement of the animated organ characters and the sounds they make.

To the left of the projection wall, a passage similar to the human vocal chords leads to the game room, where we see carefully framed high-resolution still image prints from the Organum animation hanging on the walls. The mood in this room is lounge-like, there are a few coffee tables, benches and Organum storybooks standing in the front of the room. The storybooks contain a linear Organum story and instructions for how to play Organum.

Towards the back, we see and hear up to eight people playing the Organum game: Each player is sitting at one of the eight computer terminals, which are arranged in a circle so players can see each other if they look up from their monitors. The computers are all connected with a LAN (local area network) and host one session of the game Organum. While we wait for our turn to play at a terminal, we observe the flow of the game: People use both a joystick game controller and their voice (via microphone) to control "organs" in the game. They also can talk to each other across the computer displays to organize collaborative play maneuvers.

A seat frees up, and we can join the current Organum session. We log in with our name, and enter the Valley of Distributed Organs as a stem cell. Depending on the types of organs currently in the game, our stem cell evolves into the organ which is the least represented among those already in the session. Currently, there are three brains, two stomachs, and two singing lungs (with voice boxes). Since two stomachs are enough to feed six other organs, and since three brains are plenty for five other organs, our stem cell develops into a lung. Throughout the development, our lung becomes more articulate: at first we can only control its breathing, but later, we can make it walk, sing and move its trachea. As soon as our organ is fully formed, we can walk about and see what types of work need to be carried out to ensure both our own survival and the well-being of the ecosystem. We copy at first what other lungs do. The other lungs go to one of the brains to get ideas for new songs, and they then sing those songs to the grass. Singing to the grass is fun because the grass sways in the rhythm of our song, and because we can see the grass grow faster now. We also have to go to the stomachs and catch some glucose to keep singing.

We control the singing by singing into our microphone. If we were playing a brain organ, we would use the microphone input to control the interest level of the brain's Infrared (IR) eye, which provides information about food sources and about the well-being of the ecosystem. In the case of the stomach, microphone input controls appetite, which makes the stomach eat plants. Each player needs to sing to get its character to be active in Organum. The game analyzes the pitch of all microphone inputs and computes a harmony index to help determine the well-being of the eco-system. Not all players have to sing the same tune to satisfy that harmony index. Rather, the harmony index rises the more complete the range of pitches is: harmony is a result of each player singing his or her own contribution towards a complex whole.

One of the brains seems to get ignored by both the stomachs and the lungs. That brain starts swelling up more and more, until suddenly it explodes. The stomachs rush over to the brain remains and feed on it. Apparently, the lungs felt there were too many brains in the game, so they decided to collectively ignore one until it met its end due to over-swelling with song ideas. The player of that brain exits the game with some protest, but earns nothing but laughter from the other players. As that player leaves, he picks up a brochure which describes how the Organum game can be played online. Another visitor takes his seat and enters the world as a stem cell. Her stem cell will probably develop into another brain. Meanwhile, we notice some flying robots who seem to be ready to copy our actions. We show them how to sing to the grass, and through many more interactions, all players bring the Valley into an ideal balance. Among the grass, a tree shoots up. Each of its branches has a wind-powered pipe. With those pipes, the tree plays a short musical sequence, and the session ends. While the computers load up a new session, we leave, other visitors sit down to play together, and we collect an Organum brochure. The brochure describes Organum online, the online version of the same game, which attracts almost 10,000 players in its first week of operation.

At home, we play the game on our PC and show it to some friends. The gameplay online is exactly the same as in the museum version, but the community of players in one session is distributed all over the world. We cannot see them, like in the museum, but we can play together and find new strategies to embrace complexity and *play* with the Other, the New and the Unknown.

Production Note: The Organum project phase one and two will be completed on October 30, 2003. Phase three, which I am seeking the support of the Media Artists Program for, will be completed in November 2004. Previous projects of similar scale the same team completed are PING, 2001, San Francisco Museum of Modern Art, and Oxygen Flute, 2002/3, San Jose Museum of Art.

Organum Production Budget (Media Artists)

Resource Summary:

Program for Media Artists (Nomination)	\$35,000
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Expense Detail:

Game Programming Staff Total	\$25,000
Lead Programmer Salary	\$15,000
Quality Control Salary	\$10,000

Game Outreach (Conference, Print, TV) Total	\$10,000
Launch Conference	\$2,500
Game CD Packaging/Mailing	\$5,000
Outreach Travel	\$2,500

Total Expenses:	\$35,000
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Balance: Resources minus Total Expenses	\$0.00
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Greg Niemeyer > Curriculum Vitae

Greg Niemeyer studied Classics and Photography in Switzerland before he came to the US in 1992. As an MFA grad student at Stanford University, he founded SUDAC, the Stanford University Digital Art Center, in anticipation of the need for an academic space dedicated to the practical and critical exploration of digital media and art. SUDAC opened its first exhibit, Refresh: The Art of the Screensaver, at the Cantor Art Center and at www.artmuseum.net in 2000. After directing SUDAC for 3 years, Greg became an assistant professor for Digital Media at UC Berkeley. Here, he continues to teach and to pursue his creative research in the area of digital media installations and collaborations. Supported by the prestigious Intel Art and Technology Research Grant, he completed several digital media installations, which explore novel experiences with computing. His latest installation, in collaboration with Chris Chafe, is the Oxygen Flute, which translates the human-plant carbon cycle into four-channel music in real time. In collaboration with Chris Chafe and two animators, Niemeyer is currently directing Organum, a short feature animation, storybook and online game. For this project, Niemeyer was recently awarded a F. Warren Hellman Fellowship. Niemeyer also recently organized two media conferences, 020202: Social Technologies and 030303: Collective Play, and is a member of the Executive Committee of UC Berkeley's emerging Center for New Media.

Education

- 1997 MFA, Stanford University, specialized in New Genres
- 1990 BFA in Photography, Ecole d'Arts Appliqués, Vevey, Switzerland
- 1986 Matura in Classics, Kantonsschule Rämibühl, Zürich, Switzerland

Experience

- 2001 Assistant Professor for Digital Media, University of California, Berkeley
- 2000 Advisory Board Member, Ground Zero, Palo Alto
- 2000 Academic Research Program Officer, Stanford University
- 1999 Consultant, Digital Art Gallery, Frankfurt, Germany
- 1999 Director of SUDAC and Lecturer, Stanford University
- 1998 Teaching assignments at San Jose State University and at Stanford University
- 1997 Consultant, Developed fluid interface graphics for Xerox PARC
- 1997 Managed Stanford University Digital Art Center (SUDAC), raised funding and materials grants, and created two new courses
- 1997 Planned and co-founded Stanford University Digital Art Center (SUDAC)

Recent Exhibits

- 2003 Ubicomp, Seattle (IEEE): Responsive Doors
- 2003 Berkeley Art Museum: Gene(sis): Organum
- 2003 Mills College Art Museum, Oakland, CA;
California Landscapes 1910-1940; Intervention Installation
- 2002 New Langton Arts, Annual Benefit Group Show
- 2002 Phoebe Hearst Museum of Anthropology: Oxygen Flute
- 2001 San Jose Museum of Art: Oxygen Flute, with Chris Chafe
- 2001 San Francisco Museum of Modern Art, 010101: PING, with Chris Chafe
- 2000 Cantor Art Center and artmuseum.net: Refresh: The Art of the Screensaver
- 1999 Xerox PARC Gallery, Palo Alto, Commissioned Installation
- 1999 Cantor Art Center: Fly Through the Human Body
- 1998 New Langton Arts, SPEED, Group Show
- 1997 LACE, Los Angeles Annual Benefit Group Show

- 1997 ArtExpo, Los Angeles: Landscape with Campsite, Commissioned Installation
- 1997 Triton Museum, Santa Clara: California Photography, Group Show
- 1997 Stanford University, Art Gallery: MFA Exhibit, Group Show
- 1997 Cooper Union, New York: TECHNOSEDUCTION, Group Show
- 1997 Arizona State University, Memorial Union: Credit History, Solo Show
- 1996 Institute for Contemporary Art, San Jose: Location, Location
- 1996 Palo Alto Cultural Center, Radius Award Group Show

Bibliography

Publications

- 2002 Documenta Ophthalmologica: The Function of Stereotypes in Visual Perception
- 2001 IEEE-VSMM: Design Considerations for an Oxygen Flute
- 2000 Leonardo Online: Simulation, the Cultural Anticipation of Our Own Demise
- 1997 CAA Art Journal, TECHNOSEDUCTION, statements, biography and color reproductions, <http://www.cooper.edu/art/techno/artists/artists.html>
- 1997 Cooper Union, TECHNOSEDUCTION Exhibition Catalogue, statements, biography and color reproductions, <http://www.cooper.edu/art/techno/artists/artists.html>
- 1996 Encyclopedia of Latin American Film on CD-ROM, design and user interface, Author: Jorge Ruffinelli, publication pending at University of Texas Press
- 1996 Science Magazine, September issue front cover, in collaboration with Dr. David Kehoe, Carnegie Institute of Biology: <http://www.sciencemag.org/content/vol273/issue5280/>

Conference Papers

- 2001 Eyebeam Atelier, New York: Open Source Architecture: Oxygen Flute
- 2001 VSMM: UC Berkeley: Design Considerations for an Oxygen Flute
- 2001 Emotional Architectures, Banff Center for New Media: The Thing Itself
- 2001 Information Art, at Berkeley Museum of Art
- 2000 Attraction/Distracton: Closing Remarks
- 2000 Living Architectures, Banff: Simulation, a Cultural Anticipation of our Demise
- 2000 SIGGRAPH, New Orleans: Is there any there there?
- 1997 University of Arizona, Tempe: Stereotypes: Credit History

Recent News Articles

- 2003 Framing the Questions: Breathing Room
<http://ls.berkeley.edu/divisions/art-hum/framing/vol4/niemeyer.html>
- 2002 UC Berkeley Campus News:
http://www.berkeley.edu/news/media/releases/2002/10/21_artwork.html
- 2002 Berkeleyan: http://www.berkeley.edu/news/berkeleyan/2002/10/30_oxyg.html
- 2002 Artweek Magazine October 2002: The Studio as Laboratory

Organum Production Budget

Expense Summary:

CG Modeling/Animation Staff	\$25,000
Game Programming Staff	\$25,000
Game Outreach (Conference, Print, TV)	\$10,000
Hardware (Game Server, Licenses)	\$11,000
Online Installation (UC Berkeley)	\$ 3,000
Museum Installation Hardware (PC's)	\$11,000
Music Licensing	\$ 5,000
Total:	\$80,000

Resource Summary:

F. Warren Hellmann Fellowship (received)	\$30,000
UC Berkeley COR Stipend (received)	\$10,000
Program for Media Artists (Nomination)	\$35,000
Private Donations/Proceeds	\$ 5,000
Total:	\$80,000

Expense Detail:

CG Modeling/Animation Staff Total	\$25,000
Modeler/Animator	\$10,000
Technical Director	\$10,000
Rendering Assistant	\$ 5,000
Game Programming Staff Total	\$25,000
Lead Programmer	\$15,000
Quality Control	\$10,000
Game Outreach (Conference, Print, TV) Total	\$10,000
Launch Conference	\$2,500
Game CD Packaging/Mailing	\$5,000
Outreach Travel	\$2,500
Hardware (Game Server, Licenses) Total	\$11,000
PC Server	\$8,000
OS and Network applications	\$3,000
Online Installation (UC Berkeley) Total	\$ 3,000
TCP/IP Fee	\$500
Fiber Connection	\$2,500
Museum Installation Hardware (PC's) Total	\$11,000
8 PC's	\$7,000
8 Flat Panel Screens	\$4,000
Music Licensing Total	\$ 5,000
Chirs Chafe/CCRMA	\$3,000
Nor-Tec Collective	\$2,000

Total Expenses: **\$80,000**