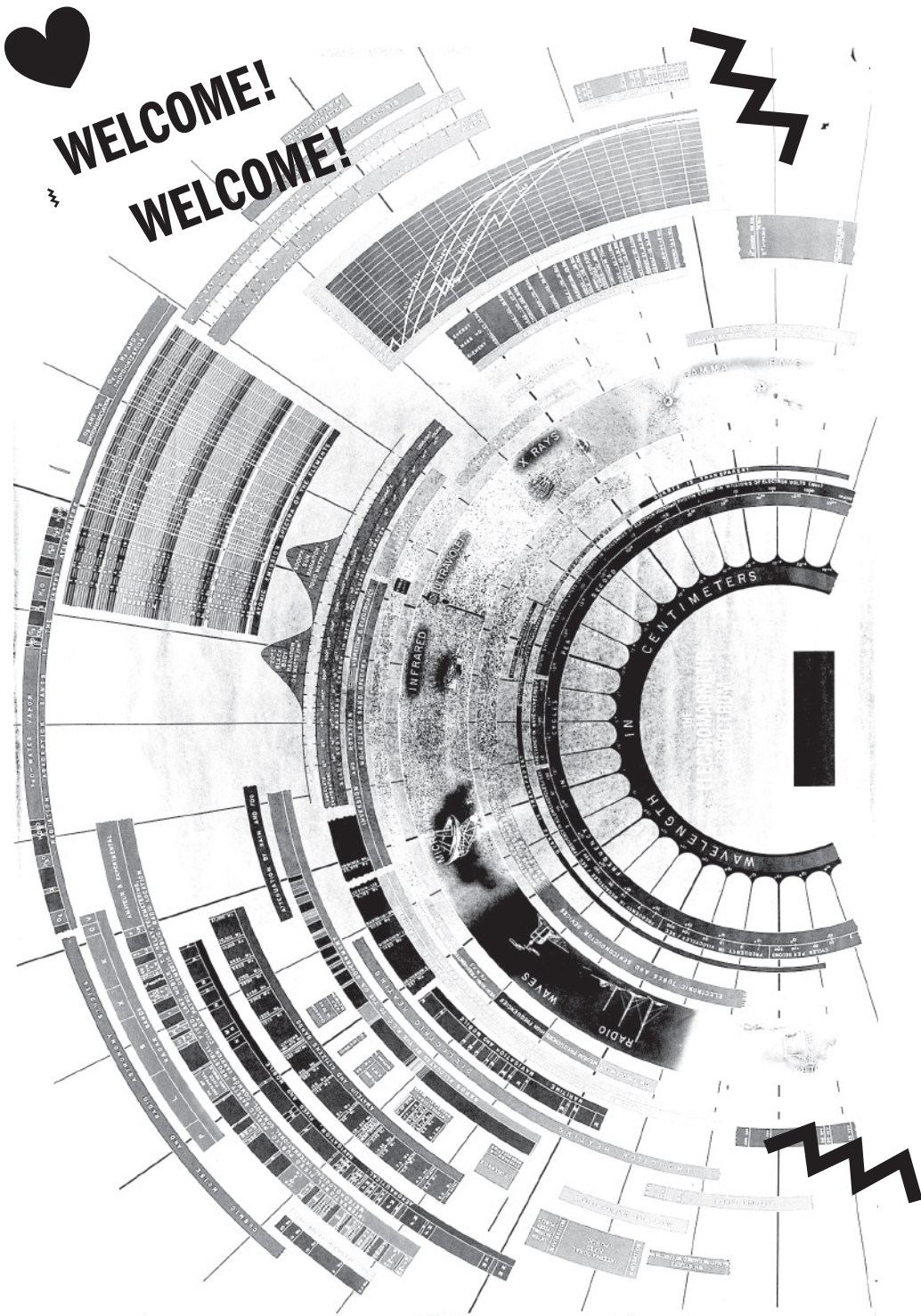**ISSUE #2**

COMMUNICATION IS A FUNDAMENTAL HUMAN RIGHT

BASICS IN THIS ISSUE:

Digital Justice Coalition Principles
Electromatic Spectrum
Internet Privacy
Computer Safety
Detroit Digital Resources
Detroit's Media Economy

WELCOME! WELCOME!

WELCOME! WELCOME!

DETROIT DIGITAL JUSTICE COALITION

VISION AND PRINCIPLES

The Detroit Digital Justice Coalition is comprised of community organizations, artists, educators, technologists and entrepreneurs in Detroit who believe that communication is a fundamental human right. We are securing that right for the digital age by promoting access, participation, common ownership, and healthy communities.

ACCESS

Digital justice ensures that all members of our community have equal access to media and technology, as producers as well as consumers.

Digital justice provides multiple layers of communications infrastructure in order to ensure that every member of the community has access to life-saving emergency information.

Digital justice values all different languages, dialects and forms of communication.

PARTICIPATION

Digital justice prioritizes the participation of people who have been traditionally excluded from and attacked by media and technology.

Digital justice advances our ability to tell our own stories, as individuals and as communities.

Digital justice values non-digital forms of communication and fosters knowledge-sharing

3

across generations.

Digital justice demystifies technology to the point where we can not only use it, but create our own technologies and participate in the decisions that will shape communications infrastructure.

COMMON OWNERSHIP

Digital justice fuels the creation of knowledge, tools and technologies that are free and shared openly with the public

Digital justice promotes diverse business models for the control and distribution of information, including: cooperative business models and municipal ownership.

HEALTHY COMMUNITIES

Digital justice provides spaces through which people can investigate community problems, generate solutions, create media and organize together.

Digital justice promotes alternative energy, recycling and salvaging technology, and using technology to promote environmental solutions.

Digital justice advances community-based economic development by expanding technology access for small businesses, independent artists and other entrepreneurs.

Digital justice integrates media and technology into education in order to transform teaching and learning, to value multiple learning styles and to expand the process of learning beyond the classroom and across the lifespan.

4

5

DETROIT:
ARSENAL OF CREATIVITY

WITH DETROIT'S AUTO INDUSTRY IN DECLINE, ACTIVISTS ARGUE FOR A MEDIA-BASED ECONOMY TO CHANGE THE CITY'S FORTUNES.

BY JENNY LEE

"Michigan will be the next film capitol of the world," Clint Eastwood said in a recent interview following the release of his new film Gran Torino, shot in Detroit. The state's generous tax incentives for film production have spurred a boost in jobs in a year that's seen declines in nearly every other industry. While it's exciting to see the rise of film-based enterprise in Michigan, we can't rely on it, or any single industry to fill the enormous hole left by the decline of the auto industry. Amid the current crisis we have an opportunity to fill the gap in our region's economy with diverse local initiatives, including community-based media, which thrives off the city's creative past and present.

Allied Media Projects (AMP) is the local host of the annual Allied Media Conference in Detroit, which attracts North America's most creative and skilled media makers and social justice organizers. Launched in 2002, AMP relocated to Detroit in 2007 because of the vibrant media-based activism here. Though we're a small nonprofit, we bring jobs

and visitors' dollars to the city.

Through the conference, AMP has fostered conversations about community media potentially transforming Detroit and other "dying cities" throughout the world. Folks in Detroit — or anywhere that requires a hustle to survive — know that creativity is an abundant and renewable resource. We can build on that. Here are some key steps we can take to use community media to rebuild Detroit's economy for the 21st century.

BUILD COMMUNITY-OWNED BROADBAND AND WIRELESS INFRASTRUCTURE

Ensuring that every household in Detroit has access to affordable, high-speed Internet has the potential to transform everything from education to public safety. Every year, the Allied Media Conference showcases new forms of collaborative learning through the Internet — from environmental justice Google maps to digital storytelling exchanges between youth of color in the U.S. and youth in Palestine. These kinds of projects utilize the Internet to expand students' belief in what's possible.

Community-wide access to the Internet also expands our ability to distribute life-saving information during an emergency. Having access to local news and information online is now critical in Detroit as our local newspaper conglomerate, the Detroit News/Free Press will be cutting their home delivery service to three days a week. We need broadband and wireless infrastructure to

6

❤

7

ensure the most vulnerable populations in the city are not further marginalized. We also need creative minds dedicated to inventing the technologies that will utilize the Internet and the wireless spectrum to advance public safety and our human right to communication.

President Obama has promised to build broadband infrastructure and increase the speeds of existing cables. Detroit needs to maximize the benefits of federal grants and subsidies. Policy changes at the Federal Communications Commission (FCC) could make it easier for neighbors to share Internet connections wirelessly the way Wireless Ypsi, a community collective dedicated to bridging the digital divide, has done in other parts of Michigan. The collective has built a free wireless network for much of the city of Ypsilanti, by partnering businesses with community organizations and individuals. We should support FCC changes that would make it easier to apply the Wireless Ypsi model in Detroit.

Community broadband and wireless infrastructure will benefit small, independent businesses. More people in Detroit are starting their own small companies — from web design tohandmade beauty products to urban agriculture. Through the Internet, these businesses gain access to free and open source software, e-commerce platforms, web 2.0 communication tools and a global market, making it easier for businesses to be

USE COMMUNITY MEDIA TO REBUILD DETROIT'S ECONOMY FOR THE 21ST CENTURY!

BUILD COMMUNITY-OWNED BROADBAND AND WIRELESS INFRASTRUCTURE

↑ ↓

CULTIVATE THE LOCAL MUSIC ECONOMY

↑ ↓

TEACH MEDIA-ARTS AND COMMUNITY ECONOMICS

↑ ↓

SUPPORT ALLIED MEDIA PROJECTS

↑ ↓

ENSURING THAT EVERY HOUSEHOLD IN DETROIT HAS ACCESS TO AFFORDABLE, HIGH-SPEED INTERNET HAS THE POTENTIAL TO TRANSFORM EVERYTHING FROM EDUCATION TO PUBLIC SAFETY.

successful with relatively low overhead.

The actual construction of the Internet — laying fiber optic cables and building wireless mesh networks — will also create jobs. To maximize the long-term benefit of broadband infrastructure on our local economy, we have to prioritize community ownership of that infrastructure so the knowledge and jobs stay local. Relying on Comcast or Verizon to build our communication networks means profits and decision-making power will stay concentrated in those companies' hands. Community and municipal ownership is the way to go.

CULTIVATE THE LOCAL MUSIC ECONOMY

Hundreds of independent recording studios exist in basements across the city. Young people are recording their own music, pressing their own mixtapes and selling songs online. With increased access to high-speed Internet and the proliferation of free and open source software, young artists are breaking down barriers to the music industry.

Detroit produces some of the best music in the world, with groups likeSlum Village, Invincible, Underground Resistance, and many others, receiving global recognition. Historically, the city has also spawned legends, such as J Dilla and Aretha Franklin, who have changed the shape of hip-hop and soul music. The challenge facing Detroit is to not just be a launching pad, but to become a place where artists can stay and thrive.

Seattle is confronting that challenge with

its "Seattle City of Music" campaign, which puts municipal funds into the local music economy. The money supports everything from music venue construction to free outdoor festivals, music education and record labels. It's important that music-based development models be rooted in, and accountable to, the existing music community.

Local musician unions such as San Antonio's Local 782 help ensure that local media economics are accountable to local artists. According to their mission statement, Local 782, exists to "bring awareness, support, and innovation to San Antonio's music community." They do this by strategically "uniting musicians to create opportunity by organizing, educating, and performing." As Detroit celebrates the Motown Records 50th anniversary this year, we should be honoring its legacy by exploring models like these at the grassroots and governmental level.

TEACH MEDIA-ARTS AND COMMUNITY ECONOMICS

Barry Gordy started Motown Records with an $800 loan from his family. It went on to become the largest independent record label in the world before it was sold to MCA in 1988. But today in Detroit, the city with the highest high school drop-out rate in the country, the easiest way for a young person to develop their entrepreneurial skills is by selling drugs. That's the conclusion reached by the Detroit Summer Live Arts Media Project, a youth media organization that has been conducting research

into the city's drop-out crisis and proposing solutions. The study also found that schools don't teach students realistic, independent strategies for turning their dreams into realities. Instead, young, talented artists hold onto the unrealistic dream of getting signed to a major record label.

Detroit should look at models such as the High School for Recording Arts for lessons on how to integrate media arts and independent economics into the standard curriculum. With schools in Los Angeles, Minneapolis and New York, HSRA is designed to retain youth who might otherwise drop out of school. Classes include graphic design, social justice, and music theory. The HSRA offers workshops in conflict resolution through hip-hop writing. They use popular media such as film and music to teach English, algebra, and world history. A one-to-one student-computer ratio allows for more individualized learning, while classes in how to run a record label foster collaborative learning and cooperative economics.

We should also be providing advanced training for adults through community media centers. These community media centers could be located within public libraries, schools and recreation centers, bringing new vitality to institutions that are struggling to keep their doors open.
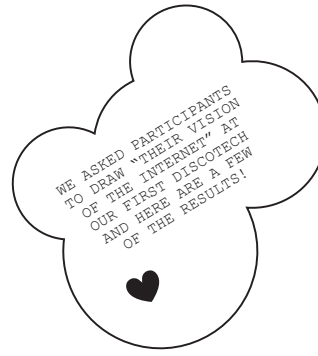
We need local residents with skills in video and audio production in order to fully leverage the state's film industry tax credits. It's cheaper for

film productions to hire local residents — if they have the required skills – and that keeps more of the money in the local economy. With these skills and access to equipment, people can do more than work on Hollywood productions.

For example, with help from the tax incentive program, local filmmaker Rola Nashef is expanding her award-winning short film about Detroit's Arab American community, Detroit Unleaded, into a feature-length film. Local residents can make their own movies, telling local stories and sparking new images of Detroit.

SUPPORT ALLIED MEDIA PROJECTS

A media-based economy is the right solution for Detroit because we need more than jobs and a tax-base to revive our city. We also need the imagination, communication, and collaboration that come from people creating and sharing their own media. We need the innovative solutions that organizations like the Detroit Coalition Against Police Brutality, Detroit Summer, Centro Obrero and the City of Hope Network, among many others, are developing.
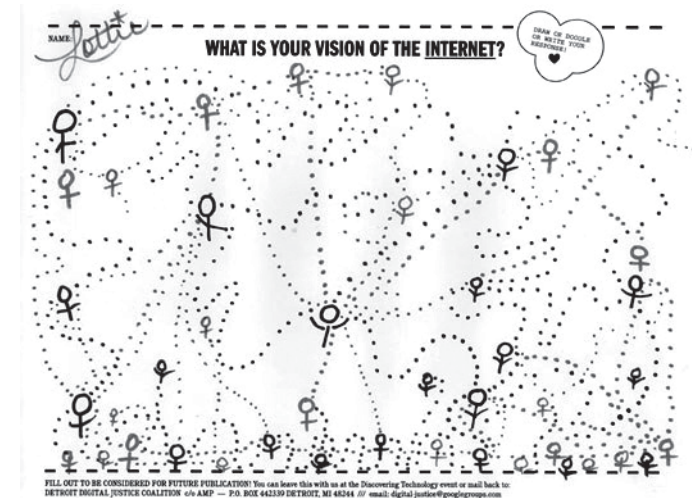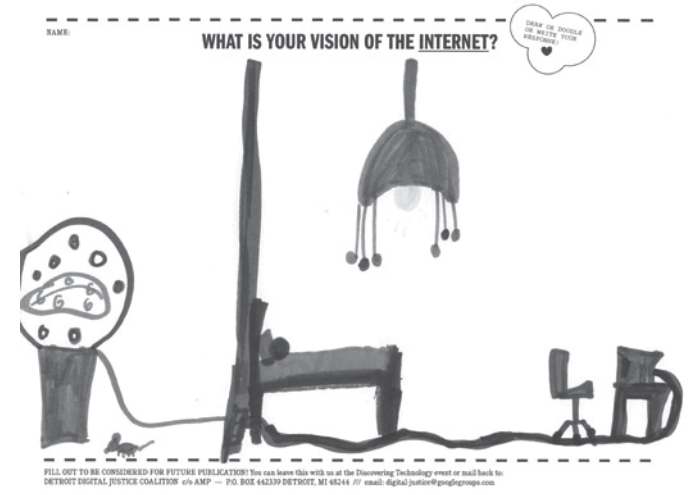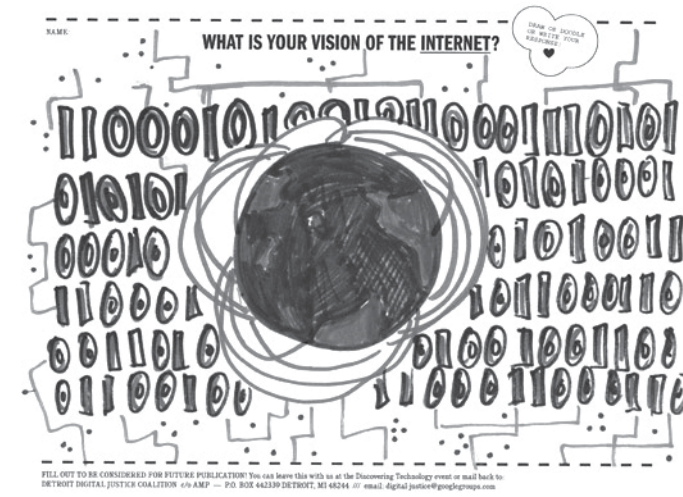
12

13

WE ASKED PARTICIPANTS TO DRAW "THEIR VISION OF THE INTERNET" AT OUR FIRST DISCOTECH AND HERE ARE A FEW OF THE RESULTS!

WHAT'S YOUR VISION OF THE INTERNET?
SPONSORED BY THE OPEN TECHNOLOGY INITIATIVE

NAME:

WHAT IS YOUR VISION OF THE INTERNET?

DRAW OR DOODLE OR WRITE YOUR RESPONSE!

FILL OUT TO BE CONSIDERED FOR FUTURE PUBLICATION! You can leave this with us at the Discovering Technology event or mail back to:
DETROIT DIGITAL JUSTICE COALITION c/o AMP — P.O. BOX 442339 DETROIT, MI 48244 /// email: digital.justice@googlegroups.com

NAME:

WHAT IS YOUR VISION OF THE INTERNET?

DRAW OR DOODLE OR WRITE YOUR RESPONSE!

FILL OUT TO BE CONSIDERED FOR FUTURE PUBLICATION! You can leave this with us at the Discovering Technology event or mail back to:
DETROIT DIGITAL JUSTICE COALITION c/o AMP — P.O. BOX 442339 DETROIT, MI 48244 /// email: digital.justice@googlegroups.com

NAME: Lottie

WHAT IS YOUR VISION OF THE INTERNET?

DRAW OR DOODLE OR WRITE YOUR RESPONSE!

FILL OUT TO BE CONSIDERED FOR FUTURE PUBLICATION! You can leave this with us at the Discovering Technology event or mail back to:
DETROIT DIGITAL JUSTICE COALITION c/o AMP — P.O. BOX 442339 DETROIT, MI 48244 /// email: digital.justice@googlegroups.com

SMART SURFING: PROTECTING PERSONAL PRIVACY ONLINE

BY: JAMES LOSEY

OPEN TECHNOLOGY INITIATIVE OF NEW AMERICA FOUNDATION

As an April Fools gag this past year, U.K. based Gamestation added an "Immortal Soul Clause" to their Terms and Conditions, transferring ownership of online shoppers souls to the company. Conscientious shoppers simply had to check a box to opt out, and received a gift voucher for their efforts. Few would relinquish rights to their soul, even as a joke, yet only 12% of Gamestation's customers on April 1st opted out of the clause.

Computers and the Internet are creating a shift in personal privacy, both in how someone might give away their personal information and the potential dangers it can bring. While most people would not leave their front door unlocked and or leave the blinds open in the bedroom, a computer is often an unguarded portal to the outside world. When using a public computer, users must be careful not to save personal passwords or credit card information on the machine.

Internet connectivity means access to job searches, news, shopping, and social networks, but steps must be taken to protect personal information from unscrupulous individuals as well as be aware about limiting information shared with companies and government. While privacy concerns are real, Internet users can take easy steps to protect oneself online.

Personal information has become a commodity online. Social networks like Facebook and Myspace or search engines like Google or Yahoo offer free services by being able to display targeted advertisements based on user information. Applications one might install on Facebook sometimes use information on your profile, or those of your friends. Personal information can be traded, sold, and compiled to create a more complete profile that given to any one application or service. One important step to take is becoming familiar with the Terms and Conditions to find out what data is stored or shared. Additionally, privacy settings should be reviewed to ensure information is not available beyond friends on the network.

For example, the website Pleaserobme.com demonstrated the potential dangers of keeping status updates open to the general public. While one would never put a sign on the front door saying they are not home, users broadcast the information online, often in close association to profiles that contain home addresses. Using privacy control settings can help prevent a random individual or company, such as an employer, gleaning personal information from a profile.

Users should guard personal and bank informa-

tion online. Consumer Reports estimates that these types of crimes cost Americans $4.5 billion from 2008 to 2009. Users should never respond to emails requesting bank account data and be aware that phishing sites, illegitimate websites that mimic the login page of a bank or email account and record passwords, or using weak passwords. Users should always check if the domain name in the address bar is accurate before giving away personal information.

To help keep email and bank accounts secure, users need strong passwords that are difficult to guess. Ideally, passwords are at least 8 characters long and include upper and lower case letters as well as numbers and symbols. Passwords can still be easy to remember by replacing letters with numbers, or using a punctuated phrase as a password.

When using a public computer users should be conscious that other individuals may have access to website history or installed software that can track log-in information. While not all threats are unavoidable, users can make sure not to save passwords when prompted by the browser, and if possible, delete browsing history, cache, and any saved information when exiting the browser.
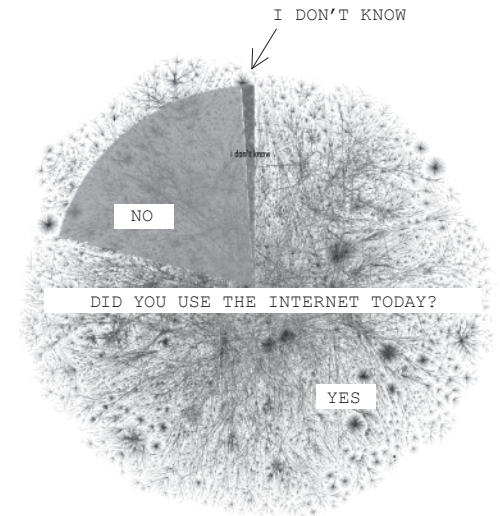
Privacy concerns on the Internet should not mean that the World Wide Web is a scary place, and steps don't make it completely safe. Similarly, homes, cars, and neighborhoods are never 100% safe. By taking smart steps, users can be taken to minimize risks and protect themselves online.

16

17

INFOGRAPHICS: SURVEY RESULTS

DATA FROM DDJC'S FIRST DISCOTECH (2009) —
SURVEY RESULTS

BY NICOLE JOHNSON

Gathered from our preliminary round of surveys is a handful of information about our community and its relationship with digital media. Here are some of the findings that I thought were most pertinent to share. Enjoy the insight!

I DON'T KNOW

NO

DID YOU USE THE INTERNET TODAY?

YES

the internet was made for me.

STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE	I DON'T KNOW
30.3%	47.5%	6.1%	6.1%	10.1%

CYBER COMMUNICATION

AN AWARD WINNING SPEECH!

BY: AHOAD ALJALLAL, GRADE 3, HOLBROOK ELEMENTARY

To me, cyber communication is progress. Cyber communication is modern technology that helps people in their daily life. It is useful and can make people feel happy.

Cyber communication includes e-mail, text messaging, blogging, podcasting, blogging and many other modern forms of interaction. This is useful because people can communicate with other people who live far away. Anywhere around the world, a person can have an e-mail address or cellular phone to keep in touch with their friends, family members, coworkers and other people. We can feel happy to hear from someone we can't see. We don't have to stop being friends because we're far apart. Businesses can keep in touch with employees and customers who are far away, also. Therefore, cyber communication is useful and enjoyable.

The internet is handy when looking for basic life needs. People can find jobs that are available in the place they live. It is also much easier to find job opportunities in other states or countries by looking on the Internet, rather than traveling to those places. Looking for homes is made easy online for people when their cars aren't working or when they can't walk far distances.

The internet also makes shopping very convenient. There are numerous places to shop online. For example, if someone needs a new computer or extra computer parts, they can find options at a number of computer stores without spending hours searching for stores and traveling to get to them. Stores online also never close, which makes it possible to shop anytime of the day or night! It is also beneficial to shop online because at times, stores run out of supplies. Shopping at malls is fun to do with friends, so the internet allows people to quickly find directions and store hours. It is important to be careful when shopping online because sometimes credit card numbers get out to the public and are used by others.

Technology is always changing. We have to keep up with the new improvements. People can communicate on forums to plan new ways to fight cyber terrorism, viruses, spyware, and other security risks. Knowledgeable specialists can create software and programs that can prevent malicious people from doing harm on the Internet. Sometimes innocent people receive bad e-mails or viruses that scare or cause harm. We need more heroes who can fight those malicious people.

Lastly, cyber communication is good because students can become much smarter. They can read a lot of information, practice academic skills and prepare for exams. I like to use Study Island be-

cause I can practice what I need to know to pass to the next grade and to do well on the MEAP test. I can also type messages to my teacher and receive a report to know how I am doing. When I search the Internet for information, I can learn a lot to do a report for school. It is important that students do not copy from the websites.

According to the Cyber Citizenship Website, (http://www.jmu.edu/iiia/cybercitz/email.html) "The Internet opens global access to a world of knowledge and information, providing a vast library of previously unavailable resources. It lets you communicate with people around the world from the comforts of your home or school. It provides numerous ways for self expression—writing, art, music, science, mathematics. Always be aware and stay safe."

In conclusion, I use the computer for many beneficial reasons. Cyber communication is useful and enjoyable. People like to send e-mails, surf the 'Net and work on programs to protect technology users. Cyber communication has many uses and is mostly progress.
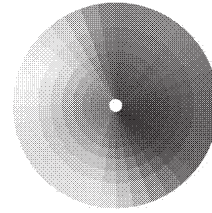
THE ELECTROMAGNETIC SPECTRUM
IS F'N AMAZING
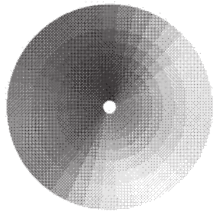
BY: DIANA NUCERA AND NASA

You actually know more about it than you may think! The Electromagnetic (EM) Spectrum is the name of types of radiation in a group. Radiation is energy that travels and spreads out as it goes— visible light that comes from a lamp in your house and radio waves that come from a radio station are two types of electromagnetic radiation. There is whole process these waves go through as they travel from our radiant sun transforming from BIG radio waves, then microwaves (yes these waves will cook your food), to infrared and ultraviolet light that feed our plants, to visible light which allows us to navigate and see each other to Xrays that we use to see our bones and and gamma rays that are a super duper form of toxic power. Hotter, more energetic objects and events create higher energy radiation than cool objects. Only extremely hot objects or particles moving at very high velocities can create high-energy radiation like X-rays and gamma-rays. So these super hot waves are HOT HOT HOT because they are the super concentrated energy straight from the sun. As the waves travel closer to the earth and through the atmosphere they slooooooow dooooown and cool off. As they

cool off they loose speed which changes their wavelength. The bigger the wavelength the more information it can carry which allows radio, cell phones, and the internet information to rides these waves and deliver information to you! AMAZING huh!

Here are the different types of radiation in the Electro Magnetic spectrum, in order from lowest energy to highest:

RADIO WAVES – Yes, this is the same kind of energy that radio stations emit into the air for your boom box to capture and turn into your favorite Mozart, Madonna, or Justin Timberlake tunes. But radio waves are also emitted by other things ... such as stars and gases in space. You may not be able to dance to what these objects emit, but you can use it to learn what they are made of.

MICROWAVES – They will cook your popcorn in just a few minutes! Microwaves in space are used by astronomers to learn about the structure of nearby galaxies, and our own Milky Way!

INFRARED – Our skin emits infrared light, which is why we can be seen in the dark by someone using night vision goggles. In space, IR light maps the dust between stars.

VISIBLE LIGHT – yes, this is the part that our eyes see. Visible radiation is emitted by everything from fireflies to light bulbs to stars ... also by fast-moving particles hitting other particles.
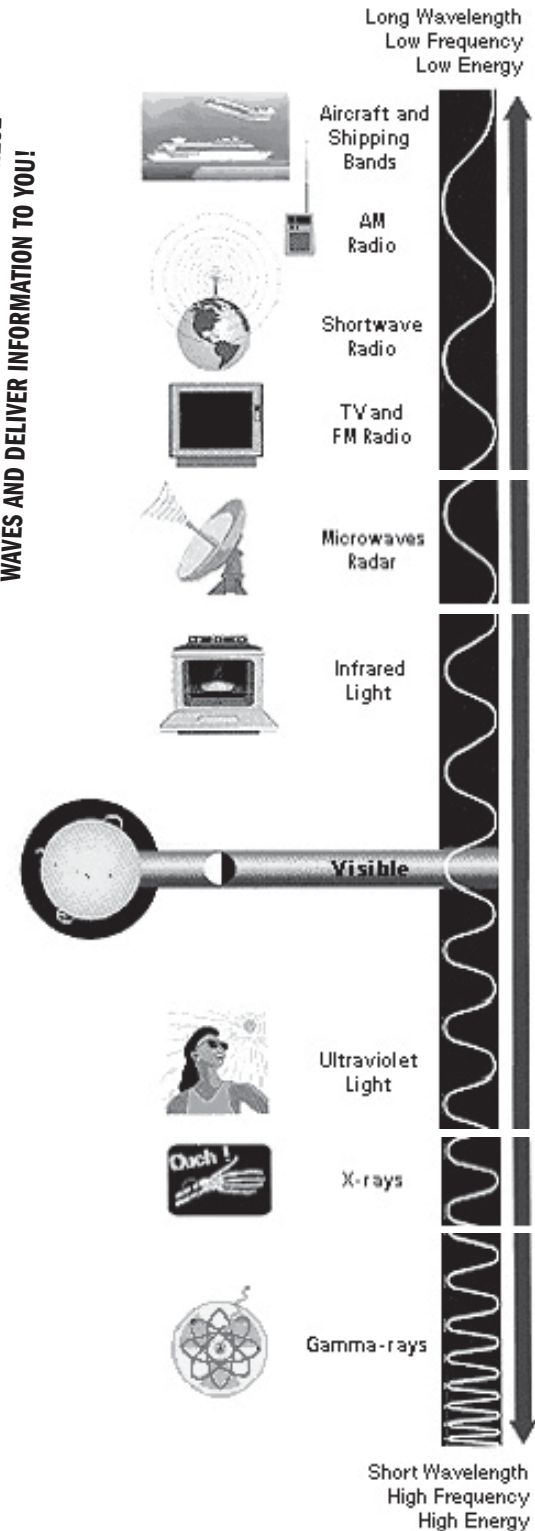
ULTRAVIOLET LIGHT – We know that the Sun is a source of ultraviolet (or UV) radiation, because it is the UV rays that cause our skin to burn! Stars and other "hot" objects in space emit UV radiation.

X-RAYS – The Medial field uses them to look at your bones and teeth. Hot gases in the Universe also emit X-rays.

GAMMA RAYS – radioactive materials (some natural and others made like nuclear power plants) can emit gamma-rays. Big particle accelerators that scientists use to help them understand what matter and life is made of, which can sometimes generate gamma-rays. But the biggest gamma-ray generator of all is the Universe! It makes gamma radiation in all kinds of ways. THE SUN!!!

22   **23**

THE BIGGER THE WAVELENGTH THE MORE INFORMATION IT CAN CARRY WHICH ALLOWS RADIO, CELL PHONES, AND THE INTERNET INFORMATION TO RIDES THESE WAVES AND DELIVER INFORMATION TO YOU!

Long Wavelength
Low Frequency
Low Energy

Aircraft and Shipping Bands

AM Radio

Shortwave Radio

TV and FM Radio

Microwaves Radar

Infrared Light

Visible

Ultraviolet Light

X-rays

Ouch!

Gamma-rays

Short Wavelength
High Frequency
High Energy

MESH COMMUNITY INTERNET
BY: BEN CHODOROFF

FUN INTERNET (SYMBOLIC) CLOUD

HOW IT WORKS

Detroiters lack options for high-speed internet, and the existing commercial service providers don't do much to solve this problem. Traditional internet access is provided in a top-down, hierarchical model in which big companies sell web access to smaller companies, who in turn sell access to consumers, with the product getting slower and more expensive every step of the way. As an alternative, communities can use something called MESH NETWORKING to subvert this model, share internet access with each other, and also prioritize local services and communication.

Mesh networking technology works like this: Each house in a neighborhood gets one or two little wireless routers. These routers amplify, repeat, and share internet connections located in at least one resident's (or business's) house. The signal can go from house to house and be reliably and efficiently shared by everyone.

Sharing internet connections like this is only the first part of a new internet. Once more neighborhoods have their own networks, we can create new types of internet services that use the local network in innovative ways: one example could be a local media-sharing website in which artists in your neighborhood can offer up new songs/videos/art that would be way higher-quality and faster than a regular website. Or, maybe we could come up with a super-local Craigslist or discussion board! Or a neighborhood map that anyone can edit!
We can only begin to imagine the possibilities of owning our own Internet, and that's what this zine, and the digital justice movement, is all about!

DIY—TECHY DETAILS

Like most consumer products, you can find very inexpensive mesh-able routers, but the more you spend, the better and more powerful they will be. A company by the name of OPEN-MESH provides affordable and relatively powerful router for around $40. You can also use some specific routers, like the Linksys WRT-54G, if you install special software on them.

At this year's Allied Media Conference, participants will work in a Media Lab to set up mesh network routers, build antennas, and install networks in the city.

Come to the AMC to participate:
alliedmediaconference.org/register

OPEN-MESH homepage:
http://www.open-mesh.com/

Freifunk is a very large community mesh network project in Germany: www.freifunk.net

Ben Chodoroff is a DDJC member who has posted on his blog about mesh networking in Detroit: detriot.org/tag/mesh

LOOK AT THAT HOT MESH!

AS AN ALTERNATIVE TO TRADITIONAL MODELS, COMMUNITIES CAN USE MESH NETWORKING TO STRENGTHEN OUR NEIGHBORHOODS BY SHARING RESOURCES AND ENHANCING COMMUNICATION.
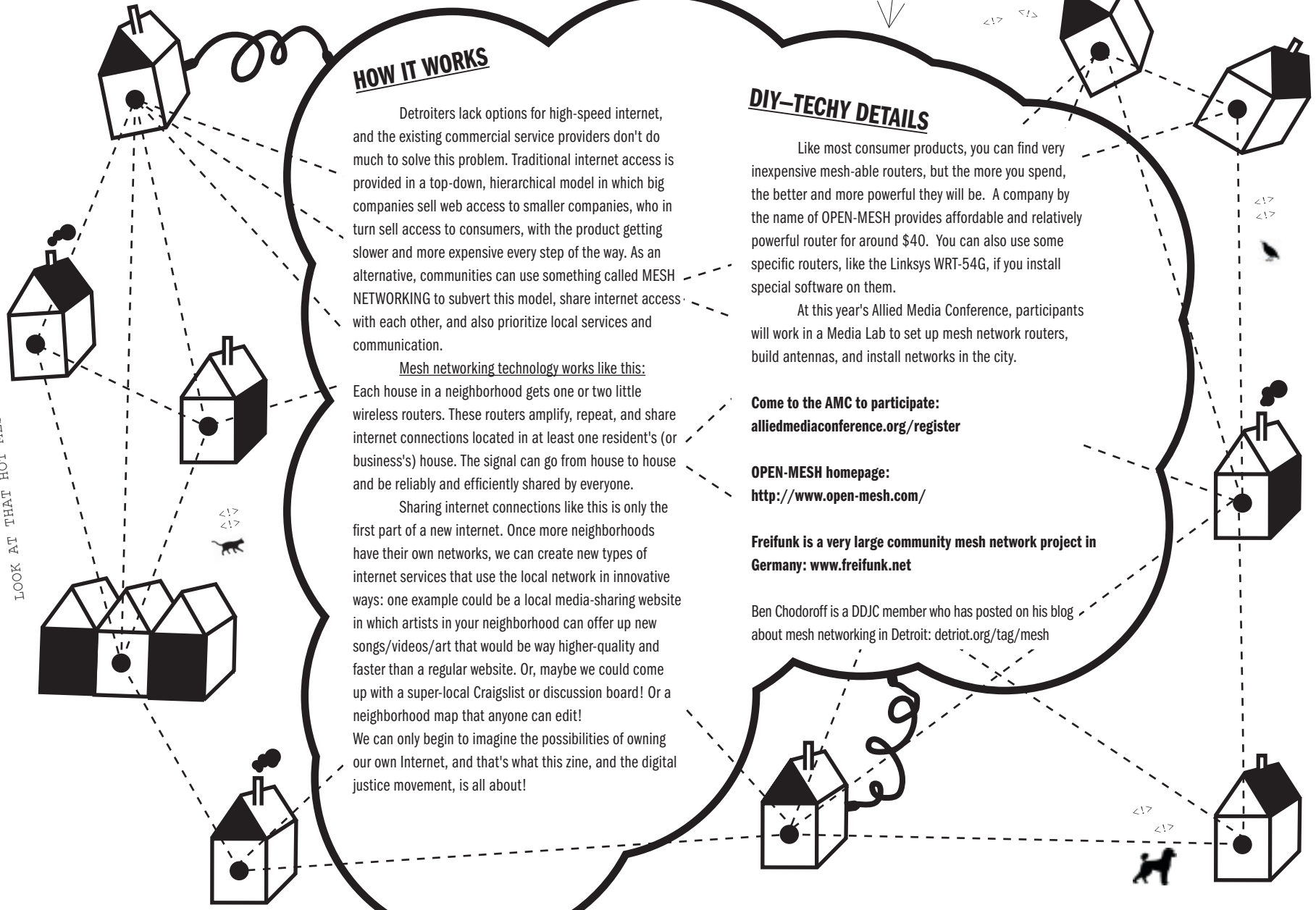
WHAT IS A SYNTHESIZER?

BY JEFF STURGES

Synthesizers as we generally understand them are electronic keyboards that make cool sounds

However, by definition a synthesizer is a simply a device that generates electrical impulses to make sound. These impulses, when sent to a speaker, cause the speaker to vibrate at certain speeds (a.k.a. frequencies) to make sound.

For example, when a synth generates a single electrical impulse to a speaker cone, this will push the speaker cone back-and-forth once.

When a synth isn't generating any signal, the speaker cone sits at rest.

When the synth generates a series of back-and-forth electrical impulses at a certain frequency, say 40 cycles per second (40Hz) this will push the speaker back-and-forth at the same frequency (40Hz) which produces sound.

WHAT IS SOUND?

Sound is a series of compressed waves that travel through air, water, or other types of matter. These sound waves are generally produced by the back-and-forth vibration of an object, such as the cone of a speaker, the head of a drum, or the strings of a guitar.

Our ears translate sound waves into messages for our brain. Our brain interprets these messages as sound.

WHAT IS FREQUENCY?

Frequency is the back-and-forth vibration speed of an object. Frequency is typically measured in back-and-forth "cycles" that fit in one second, also called "Hertz (Hz)". For instance, if I wave my hand back-and-forth 5 times in one second, I would be waving my hand at "5 cycles per second" or "5 Hertz". This is often written in short form as "5Hz"

When speaker cones move back-and-forth at certain frequencies, they make sound.

$y(t) = x_1(t)$: angular position [rad]
$x_2(t)$: angular velocity [rad/s]

m

b

g
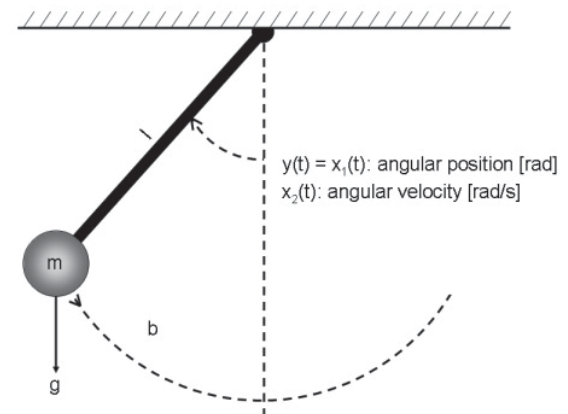
If a speaker cone moves back-and-forth at 40 cycles per second (40Hz) it would produce a low rumbling sound like a bass drum.
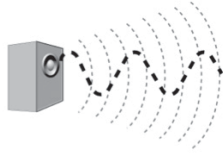
If a speaker cone moves back-and-forth at 10,000 cycles per second (10,000Hz) it would produce a high-pitched sound like a whistle.

The human ear can hear sounds as low as 20 cycles per second (20Hz) and as high as 20,000 cycles per second (20,000Hz aka 20kHz)

✸

REVIEW
Back-and-forths per second = cycles per second = Hertz = Hz
20 back-and-forths per second = 20 cycles per second = 20 Hertz = 20 Hz

THE PARTS

COMPONENTS (THE PARTS)
To generate these electrical impulses, a synthesizer uses different electronic components to control the flow of electricity. To provide electricity to the synthesizer, we will need to connect a power supply such as battery. To produce sound, we will need to connect speaker.

BATTERIES
Batteries convert chemical energy to electrical energy. They are like pumps for electrical energy.
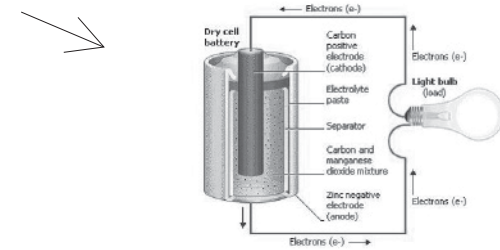
RESISTORS
Resistors limit and control an electrical charge. They are similar to small diameter water pipes that slow down the flow of water.
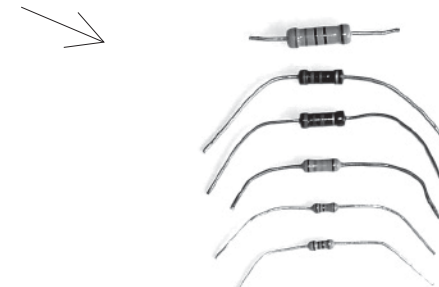

CAPACITORS
Capacitors store and instantaneously release large amounts of electrical charge. They are similar to a large water tank with a trap door that releases when filled to its limit. Capacitors are used for various purposes, the most known being the flash on your camera where an instantaneous release of large amounts of electrical charge is necessary to create a large flash of light.

Sometimes we can actually hear the capacitor recharging immediately after we've taken a flash photo.
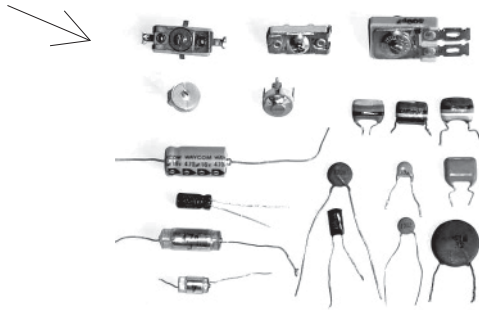
TRANSISTORS

Transistors control the flow of large amounts of electrical charge by using only a small amount of electrical charge. They are similar to water valves on large water pipes - It takes only a small amount of effort to control the flow of a large amount of water. Transistors are often used in audio amplifiers where a small electrical signal, such as that from your ipod, is used to control the flow of a large amount of electrical charge from a battery or household outlet to drive a large speaker.
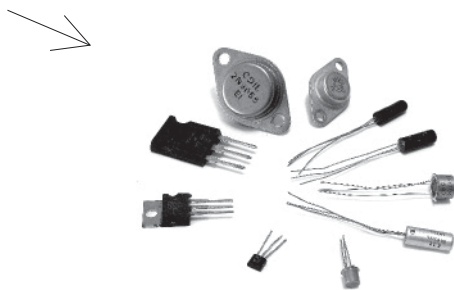
30

SPEAKERS
Speakers convert electrical energy into sound

HOW DOES THIS SYNTHESIZER WORK?
1. When power is applied to the synthesizer, the electrical charge begins to flow into the capacitor.

2. As soon as the capacitor fills to its limit , it releases its electrical charge which then activates the two transistors.

3. Once the transistors are activated, they allow electrical charge to pass directly from the battery to the speaker, pushing the speaker out, and creating a single sound wave.

4. As soon as the electrical charge is released, the transistors deactivate, the speaker relaxes, and the capacitor begins to fill up again to repeat the process.

The speed at which the capacitor fills and releases its electrical charge is dependent on the resistors. The resistors restrict the flow of electrical charge coming from the battery. The synth has two resistors: one of a fixed resistance (the single resistor), and one whose resistance changes. The wires touching the pencil line at various points acts as this variable resistor.

The farther away that you place the wires on the pencil line, the more the resistance in the flow of electricity. The capacitor will fill and release more slowly, triggering the transistors more slowly as well. This means the speaker will move back-and-forth with less "frequency." As we now know, the lower the frequency of a speaker, the more it sounds like a low rumbling bass drum sound.
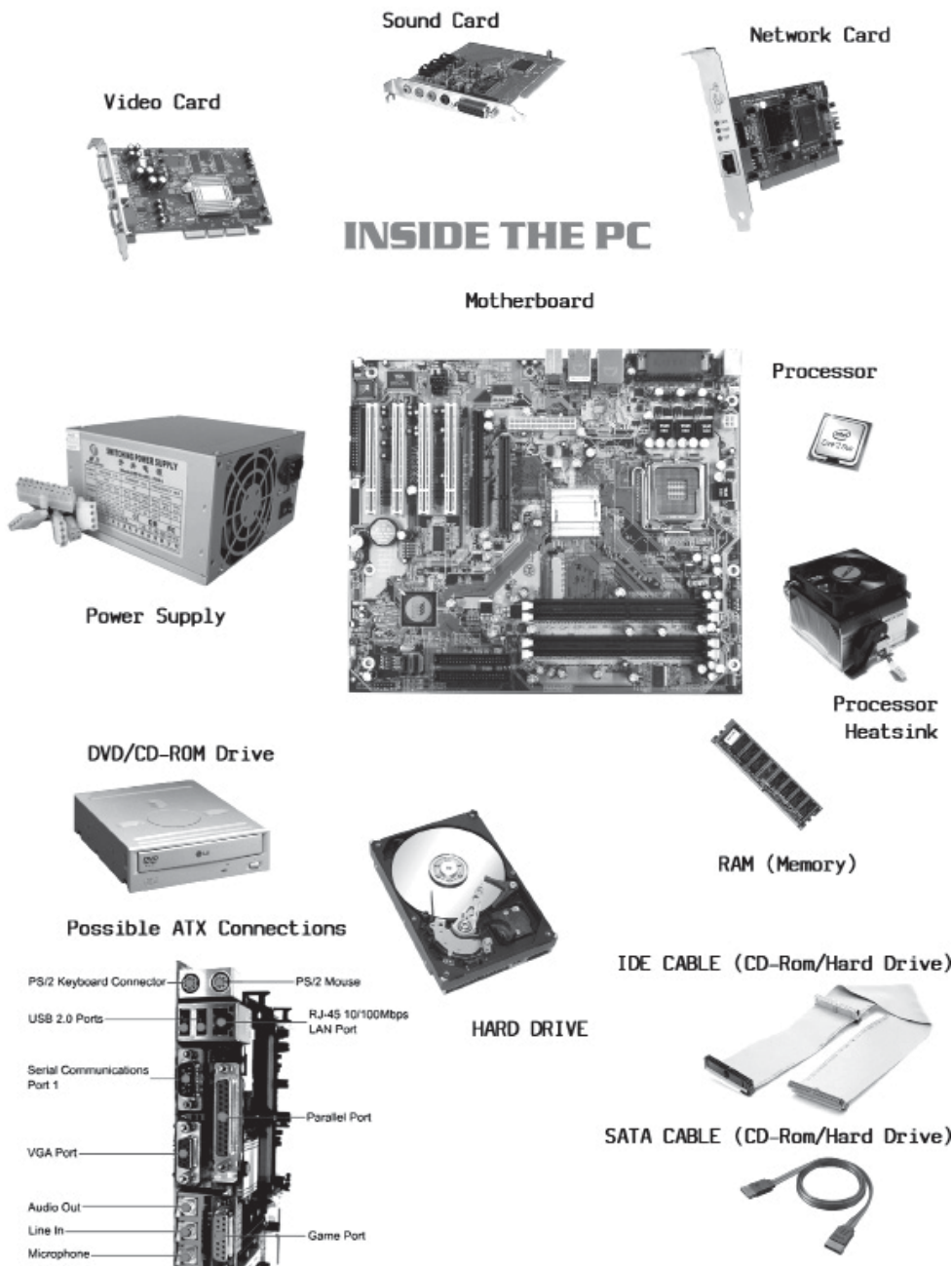
Conversely, the closer that you place the wires to each other on the pencil line, the less the resistance in the flow of electricity. The capacitor will fill and release more quickly, triggering the transistors more quickly as well. This means the speaker will move back-and-forth with less "frequency" As we now know, the lower the frequency of a speaker, the more it sounds like a low rumbling bass drum sound.

Experiment!!! Instead of using the lead paint line, try other metals, water, salt water, soda, pizza, your skin, etc. to see how other materials act as resistors and change the sound

31

INSIDE THE PC
COMPONENT DESCRIPTIONS

Video Card

Sound Card

Network Card

INSIDE THE PC

Motherboard

Processor

Power Supply

Processor Heatsink

DVD/CD–ROM Drive

RAM (Memory)

Possible ATX Connections

PS/2 Keyboard Connector — PS/2 Mouse
USB 2.0 Ports — RJ-45 10/100Mbps LAN Port
Serial Communications Port 1
— Parallel Port
VGA Port
Audio Out
Line In — Game Port
Microphone

HARD DRIVE

IDE CABLE (CD–Rom/Hard Drive)

SATA CABLE (CD–Rom/Hard Drive)

33

PROCESSOR – Also known as "CPU" is the brain of your computer. All of the work done on the computer is done directly or indirectly by the processor

PROCESSOR HEAT-SINK – Think of the processor as a car engine and the heat-sink as a radiator. It dissipates heat away from the processor usually with the aid of a fan. If the processor gets too hot it can become unstable and even cook itself to the point not working anymore

MOTHERBOARD – This is the sometimes called the "mainboard"or "logic board." All of the components in the computer connect to the motherboard. The motherboard is full of slots and inputs that all of your different components plug into with minimal chance of putting the wrong part in the wrong place.

POWER SUPPLY – Supplies the power to your computer and to most of the components attached to it.

RAM – or "random access memory" The programs that run on your computer are loaded from the slower hard drive into the lightning fast ram and then run by the processor. When your computer is shut off the programs stored in the ram are wiped clean.

HARD DRIVE – Your hard drive is where your operating system (Windows, Linux), all of your programs and other precious data is stored on the computer. When your computer is shut down your data is safely stored on it's special magnetic disks or platters (so keep powerful magnets away!) The most popular hard drives are ATA-100 (IDE) and the newer ones are called SATA drives

DVD/CD-ROM – also called an "optical drive". This component uses a laser to read Cd's and DVD's making it possible to load programs, listen to Audio Cd's as well as play movies off of DVD's.

VIDEO CARD – or graphics processing unit "GPU" The video card is dedicated to handling visual information from your ram and processor for display on a video monitor. Some motherboards have built in video but in general an actual video card is more powerful.

SOUND CARD – controls the input and output of audio signals to and from a computer.

IS THAT COMPUTER WORTH SALVAGING?

BY ANDERSON WALWORTH

It depends what you need to do with it. For most, you will want a computer that is good enough to surf the Internet, check email, word processing and watching videos on youtube.

I would recommend the following if you want to have any kind of multimedia experience.

1000MHZ OR 1GHZ PROCESSOR OR HIGHER

512MB RAM

20GB HARD DRIVE SPACE

SOUND CARD

NETWORK CARD

For word processing, Internet and email (much older computers):

500MHZ PROCESSOR

128MB OF RAM

AT LEAST 5GB HARD DRIVE SPACE

NETWORK CARD

Keep in mind you can usually upgrade the RAM and hard drives on older computers but the processor in most cases cannot be upgraded.

COMPUTER SAFETY

BY ANDERSON WALWORTH

People do some bad things sitting in front of the computer. I'm not talking about hacking government mainframes or stealing identities. I'm talking about something that you are probably doing right now…. hunching over, slouching, eye straining (or my personal favorite) sitting on one leg . If you spend enough time crinkled up in front of a computer you can actually injure yourself! Some symptoms may be back and neck pain, headaches, and shoulder and arm pain. Here are some pointers that will keep you feeling good behind your computer screen.

Keep your back straight, both feet flat on the floor and if you can, use a computer chair that supports your lower back with arm rests that are about waist high.

Your arms should hang relaxed next to your body and your wrists should stay straight when typing or using the mouse.

Rest your eyes when you can by looking out a window or focusing on something far away.

If your eyes get fatigued very quickly you can try changing the resolution on your monitor to something bigger. If you're tech savvy, try to increase the refresh rate of your monitor to anything above 60khz. (This isn't applicable to laptops or LCD monitors.)

Take frequent breaks. When you're feeling a little fried, stand up and stretch or go outside and get some fresh air. You'll notice the graphics outside are much more realistic than any computer graphics!

ONGOING LIST OF RESOURCES

COMPUTER MENTORING FOR ADULTS 60 AND OLDER AT HANNAN CYBER CAFE

The Hannan Cyber Cafe, 4750 Woodward Ave., is located inside Ms. Crawford's long-time Hannan Cafe. Adults 60 years and above can receive mentoring from Vera, Connie and Brenda on Wednesday and Thursday 10:30-12:30 and Friday 10:00-12-noon. Stationary computers with internet access are available for older adults (60+) to use Monday-Friday from 9:00am – 3:00pm during non-mentor times. Wireless access throughout the cafe. Call Pat Baldwin at 833-1300, ext 15, to register for computer use and/or mentoring.

OPERATION ABLE COMPUTER SKILLS AND JOB TRAINING FOR LAID-OFF AND DISPLACED OLDER WORKERS

Operation Able, 4750 Woodward Ave., Suite 201. Call 313-832-0922 for information.

HANNAN CENTER

The Luella Hannan Memorial Foundation believes that caring for our elders is a central value of our community.

Hannan Center, located at 4750 Woodward Avenue, Detroit, is a multi-tenant non-profit center with 14 partner agencies. It is the home for the

Berry Media Center, Hannan Center for Senior Learning, the Ellen Kayrod Gallery for older artists, and the Zena Baum Service Center for case management services for adults 60 and older.

For more information call 313-833-1300.

COMPUTER AND ELECTRONICS RECYLING AT RECYCLE HERE!

Recycle Here Main Location Only
Wednesday: 10AM-6PM
Saturday: 9AM-3PM
1331 Holden Ave, Detroit, MI 48202
(313) 876-0449

We accept old computers, CD players, VCRs, and televisions. Computers and electronics in working condition can be donated to Salvation Army. We also accept cell phones and old printer cartridges, but they must be collected separate from computers and electronics.

RUTH ELLIS CENTER

The David Bohnett Cyber Center
Open to young people ages 13 - 24 yrs old. Must be LGBT-friendly (lesbian, gay, bisexual, transgendered)

Drop-in Hours: 3:00pm - 9:00pm M-F
75 Victor, Highland Park, 48203

DJC BIOS

5 E GALLERY

"The Launchpad!!!" We are here for artists and musicians to utilize as an outlet for their respective talents. This is where we come together to build. Started by me, DJ Sicari, because we as Detroit artists need a space that is owned and operated by us. Please check our events page and feel free to come out and enjoy the 5E experience. Art Exhibits, Live Music Performances, Independent Film Critiques, Panel discussions, Open Mics, Artist Meet and Greets and an array of various other creative events are what you have to look forward too. A creative movement is building. Get involved!!!

1440 COLLECTIVE

The 1440 Collective Studio is a full service media and arts center whose multi-purpose space is utilized as a creative incubator, recording facility, photo/video studio, rehearsal space, and event/private performance venue.

ALLIED MEDIA PROJECTS

Allied Media Projects (AMP) advances strategies for using media and technology to investigate, illuminate, and develop visionary solutions to the crises faced by our communities. We do this annually at the Allied Media Conference in Detroit, and year-round through the Allied365 Training and Exchange Bureau.

NINA BIANCHI

Nina Bianchi is a interdisciplinary designer, practicing in Detroit since 2000. She has worked with numerous sociopolitical, cultural, municipal and art-related organizations, nationally and internationally. Her work experience ranges from publication design to corporate communications to political ephemera. She has also taught in the Detroit Public Schools and currently teaches graphic design at the College for Creative Studies. Her independent work explores the relationships in between technology and communication. She enjoys developing installation-based design/production processes. She thrives on the possibility of creating a sustainable change in Detroit. Her professional and volunteer work in the community pushes this goal towards realization. For more info email hello@ninabianchi.com.

EAST MICHIGAN ENVIRONMENTAL ACTION COUNCIL

For over thirty years, EMEAC has been working in the legislature, in the courts, in township halls and in schools. We played a role in the enactment of most of Michigan's environmental laws. We have used those laws in court to protect air and water quality, wetlands, natural areas, farmlands and wildlife. We have drafted regulations for local governments and have provided public information and environmental education opportunities throughout southeast Michigan.

HANNAN HOUSE

The Foundation's mission is to enhance the quality of life for senior citizens in Metropolitan Detroit – with a focus on the City of Detroit – by identifying their unmet physical, social and financial needs and maintaining facilities and creating programs that both address these needs and preserve the dignity of seniors.

THE HUSH HOUSE

The Hush House Community Museum and Leadership Training Institute for Human Rights: Welcome to the LAND of Wilderness Hope. Address: 6179 Wabash Detroit, MI 48208, Phone: 313.896.2521 Dr. Charles Simmons and Mama Sandra Simmons, CEO's Ms Oya Amakisi, Director

ANDRE MARTIN

Community born, community concerned and uncompromising freedom fighter. Armed with a bicycle two functional legs, a digital camcorder, still shot photo a camera and a seditious mentality this rebel is ready to sink the mainstream media outlets a build anew.

MICHIGAN WELFARE RIGHTS ORGANIZATION

"We, the poor and working people living in America refuse to accept responsibility or blame directed toward us and imposed on our children for the poverty we are forced to live in. As members of the National Welfare Rights Union and the Michigan Welfare Rights Organization, we recognize high-tech manufacturing as the dawn of a complete new era which can guarantee forever and for all a life free from material wants. Therefore, in order to cleanse this imperfect nation, re-establish justice, ensure economic stability, provide for the common security, promote the national welfare, and enhance the blessings of financial freedom once enjoyed by the collective posterity, we do re-dedicate and re-establish our singular commitment to take control of our nation as patriots as we fight for the American Dream."

THE OPEN TECHNOLOGY INITIATIVE (OTI)

The Open Technology Initiative formulates policy and regulatory reforms to support open architectures and open source innovations and facilitates the development and implementation of open technologies and communications networks.OTI promotes affordable, universal, and ubiquitous communications networks through partnerships with communities, researchers, industry, and public interest groups. OTI is committed to maximizing the potentials of innovative open technologies by studying their social and economic impacts –

particularly for poor, rural, and other underserved constituencies. As an independent non-profit initiative, OTI provides in-depth, objective research, analysis, and findings for policy decision-makers and the general public.

REAL MEDIA + URBAN NEIGHBORHOOD INITIATIVES

Real Media is a youth development program focused on technology, multi-media literacy, research, and college access. Real Media students learn a broad range of media literacies, including film-making, photography, web design, print media and audio. Using these mediums, young people become Youth Researchers. As Youth Researchers, young people are responsible for completing a creative project each year focusing on a socially relevant topic. They also visit local organizations that serve youth and disseminate found information through their website, www.youthfriendlysw.org.

For more information about Real Media, please contact Nicole Johnson Wilamowski at nwilamowski@unidetroit.org or call 313.841.4447.

Urban Neighborhood Initiatives (UNI) "Building Vital Neighborhoods" is a 501c3 nonprofit corporation created to serve urban communities through neighborhood-based coordinated human and community development. UNI's goal is to demonstrate that urban neighborhoods can be healthy neighborhood environments fostering successful families and supporting positive development of young people. This is done through community organizing, planning, and development as well as youth programming and adult education. Real Media is youth development program of UNI.

For more information on UNI, please contact Dennis Nordmoe at dnordmoe@unidetroit.org or call 313.841.4447.

JEFF STURGES

Jeff Sturges enjoys connecting people and making things. Inspired by his experience at the MIT Fab Lab program at Sustainable South Bronx, he moved to Detroit in hopes of developing Fab Lab–esque shared community workspaces. As venues for collaborative problem solving and creation, the hope is to transform local challenges into learning experiences for participatory design, hands-on fabrication, and social entrepreneurship.

Jeff's pro background includes IT consulting, affordable real estate development, community economic development, architecture, product design, carpentry, and teaching. Unfortunately, none of this work has ever involved sticking one's hands into dirt to grow food. Jeff likes dirt, and loves food, so he hopes to tap the brains of Detroit farmers to somehow marry making things with urban agriculture.

DIGITAL JUSTICE DEMYSTIFIES TECHNOLOGY TO THE POINT WHERE WE CAN NOT ONLY USE IT, BUT CREATE OUR OWN TECHNOLOGIES AND PARTICIPATE IN THE DECISIONS THAT WILL SHAPE COMMUNICATIONS INFRASTRUCTURE.

Great Lakes
BIONEERS
DETROIT
Conference 20...
October 15 - 17

Great Lakes Bioneers Detroit
(GLBD)
Invites you to their
6th Annual Conference
October 15 to 17, 2010
Marygrove College, Detroit

Join us as we promote and
celebrate solutions for
restoring and healing
Earth's communities

BIONEERS
Revolution from the Heart of Nature

Contact us:
mail to: info@glbd.org
(313) 717 6151

Join the East Michigan Environmental Action Council and the Indigenous Environmental Network for one of the best FUN-draiser parties of the US Social Forum. The E-Blast Party will be at the Magic Stick on 4120 Woodward Avenue Detroit, MI 48201. Doors open at 9, featuring live performances by John Trudell, Detroit's own, Blair, Cold Men Young, jessica Care moore, Joe Reilly, DJ's Pirana Head from Whasdat Music and Mr. Fuss from Sacred Earth Recordings, and MORE!!

live!

featuring live performances:

e-blast!

Thursday, June 24th,2010
@ The Magic Stick
4120 Woodward Ave
Detroit, MI 48201
Doors : 9p

Blair

Cold Men Young

jessica Care moore

Joe Reilly

John Trudell

and more!

Get Your Move On!
DJ's: Pirahnahead from Whasdat Music
Mr. Fuss from Sacred Earth Recordings

Bringing it:

EAST MICHIGAN
ENVIRONMENTAL ACTION
COUNCIL

For more info: 248.258.5188

SEAC, the Student Environmental Action Coalition, is a pro-active, youth and student led, grassroots organization. Our definition of the environment includes not only the natural environment, but also the social, cultural, political and economic environment we all live in. We act as allies, working in solidarity to empower local struggles while building bridges between student activism and community movements. We believe that all struggles are connected and we seek to alter the relations of power while fighting for both environmental and social justice. We invite you to join SEAC today!

www.seac.org

OMNI CORP DETROIT

OCD — DETROIT HACKERSPACE
CHECK **OMNICORPDETROIT.COM** FOR INFO ON OPEN
WORKSHOPS, BUILD KITS, HACK EVENTS AND MORE!

When was the last time you smiled at your radio!

We bet you would if it was reading your local newspaper!

If you or a loved one can't read due to vision loss, illness, disability or injury, we can help.

**(313) 577-4207
www.dris.org**

dris

Detroit Radio Information Service for the blind and print-disabled
WDET-FM/Wayne State University

Providing equal access to information since 1978

CAPUCHIN FRANCISCAN VOLUNTEER CORPS

CAP CORPS MIDWEST:
TRANSFORMING THE WORLD
THROUGH REVERENCE

CAPCORPS.ORG

SAVE THE DATE!
Allied Media Conference 2011
June 23-26
Detroit

alliedmedia.org

WE DESERVE GOOD PAYING JOBS
AND A CLEAN ENVIRONMENT.

WE WILL NOT BE FORCED
TO MAKE A CHOICE BETWEEN THEM.

COMMUNICATION IS THE KEY TO ENVIRONMENTAL JUSTICE; WE MUST MAKE OUR VOICES HEARD.

Share our stories with our neighbors next door and the other side of
the city the other side of the world! Express our voices in a new and
creative way through media print, video, web, radio!

**CONGRATULATIONS TO THE 48217
COMMUNITY FOR ALL THE HARD WORK YOU'VE DONE OVER
THE PAST YEARS!**

TIFFANY HARTUNG
SIERRA CLUB BEYOND COAL CAMPAIGN

MICHELLE MARTINEZ
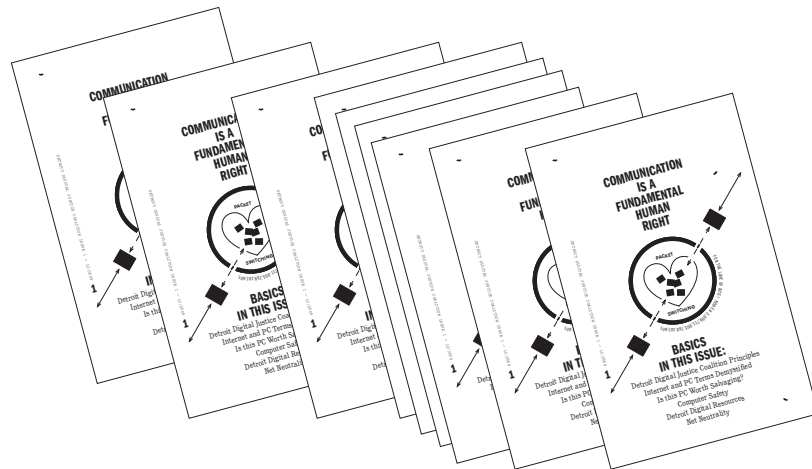*SIERRA CLUB CLEAN ENERGY SOLUTION*

RHONDA ANDERSON
*SIERRA CLUB ENVIRONMENTAL JUSTICE AND
PARTNERSHIP PROGRAM*

MELISSA DAMASCHKE
SIERRA CLUB GREAT LAKES PROGRAM

SIERRA CLUB
FOUNDED 1892

www.michigan.sierraclub.org

PREVIOUS ISSUE:

TO GET A COPY OF DDJC'S FIRST DISCOTECH ZINE, WHICH
COVERED LOTS OF INTERNET BASICS —
EMAIL OR CALL US!
EMAIL: DIGITAL-JUSTICE@GOOGLEGROUPS.COM
CALL: 313 595 4375

NEXT ISSUE:
Beyond Digital Intimidation
DIY Troubleshooting
More Detroit Digital Resources
More Community Stories
Digital Justice + ~~"right"~~ sizing Detroit?

← —ᴡ— →

A HUGE THANK YOU TO THE
<u>MICHIGAN CITIZEN NEWSPAPER</u>
AND STAFF FOR SUPPORTING
THE DETROIT DIGITAL JUSTICE
COALITION! CHECK IT OUT AT:
michigancitizen.com

CONTACT US!
DETROIT DIGITAL JUSTICE COALITION
C/O AMP
P.O. BOX 442339
DETROIT, MI 48244
E: digital.justice@googlegroups.com