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Best Animated Feature

NOMINATED FOR
THE CINEMA AUDIO SOCIETY AWARD
FOR OUTSTANDING ACHIEVEMENT IN SOUND MIXING IN A MOTION PICTURE
(ANIMATED)
Carlos Sotolongo, Tom Myers, Ren Klyce, Nathan Nance, Nick Wollage, Mary Jo Lang, CAS

For more on this extraordinary film, go to www.FocusGuilds2014.com
FEATURES

51st CAS Award Noms ........................................ 16
Technical Achievement Awards .......................... 20
Production & post-production nominees
CAS Student Recognition Award Finalists ............. 21
CAS Career Achievement ................................ 22
An interview with recipient David Macmillan
Building “Soundtopia” ....................................... 34
Sound for a reality show on steroids
Auro-3D .......................................................... 38
All about this immersive sound format
The Value of Mentorship: Part One ....................... 44
How to write about sound .................................. 48

DEPARTMENTS

President’s Letter .................................................. 4
Welcome to Awards Season
From the Editors .................................................... 6
Here we are in 2015
Announcements .................................................... 10
Important deadlines & MemberClicks
Technically Speaking .......................................... 12
iZotope RX4 Advanced
Been There Done That ........................................ 51
CAS members check in
The Lighter Side ................................................... 54

Cover: David Macmillan, CAS
Welcome to our winter edition, as we are in the thick of our Awards Season! These are exciting times! I wish each and every one of our nominees good luck, and I will see you all at the CAS Awards on February 14, 2015.

I have had the privilege to serve on the CAS Board of Directors since 1986, and as your president since 2011. The past four years have flown by. It’s hard to believe my term is over, and now I get to join a prestigious list of former presidents. The common thread here really does invoke the theme of my presidency, which I talked about four years ago: ‘giving back’ to the sound community. It has been my honor and pleasure to serve, to help bring changes, and to guide the CAS toward further growth and prosperity. I have been so very fortunate to have served with so many incredible people on your CAS Board of Directors. This team of talented and knowledgeable mixers volunteer their time all year long with the same goal: to uphold the mission statement of the Cinema Audio Society.

During these last four years, your CAS Board has set in motion several ideas and concepts which have expanded the reach and the membership of the CAS, and have advanced the art and craft of sound mixing. We enhanced our CAS website, making it the HUB of our organization. We have added award categories and revised three of those to now include SCORING MIXERS and ADR MIXERS as nominees. One very personal and important goal to me is the realization of the inaugural CAS Student Recognition Award. The award comes with a $2,500 grant and is intended to encourage students’ interest in production or post-production sound mixing, and to recognize individual students with exceptional demonstrated passion for the field. One of our founding principles is to foster the next generation of sound mixers, and this award fulfills that.

This magazine has grown in stature, and I congratulate and thank the entire staff for their hard work. We have increased our seminars and conferences over these last few years, and coordinated with other guilds. Our business partners at IngleDodd have helped us to grow and stay a very healthy organization. The Annual CAS Picnic is a huge success, and we are planning more events for our members to enjoy in the coming months. These are the backbone of CAS membership value, and I know your Board will continue to expand these programs.

In February, as I hand the gavel to your new president, and a new Board of Directors takes shape, I am confident that the organization will be in good hands and will thrive. Everyone who participates has the same goals. We have not accomplished everything we had hoped to, and there is still much work to be done. I hope to still contribute and will forever be a part of the CAS. I’d like to say “THANK YOU” to your Board of Directors, Past Presidents, our office staff, and each and every member for supporting the CAS and for keeping us moving forward.

I wish everyone a safe, happy, healthy, and prosperous 2015.

With much gratitude,
David E. Fluhr, CAS
President of the Cinema Audio Society
UNIVERSAL PICTURES
PROUDLY CONGRATULATES OUR NOMINEES FOR
OUTSTANDING ACHIEVEMENT
IN SOUND MIXING
MOTION PICTURE - LIVE ACTION

UNBROKEN
THE UNBELIEVABLE TRUE STORY

DAVID LEE
PRODUCTION MIXER
JON TAYLOR CAS
RE-RECORDING MIXER

FRANK A. MONTAÑO
RE-RECORDING MIXER
JONATHAN ALLEN
SCORING MIXER

PAUL DRENNING CAS
ADR MIXER
JOHN GUENTNER
FOLEY MIXER

THE UNBELIEVABLE TRUE STORY
Here we are in 2015, CAS members, and with our 51st Annual CAS Awards ceremony right around the corner, we bring you Vice President Mark Ulano’s interview with your 2015 CAS Career Achievement Award honoree, production mixer David Macmillan, CAS. During the interview, David discusses his love of mentoring—which is a perfect segue to Devendra Cleary’s article on “The Value of Mentorship.” Providing some insight into newer technologies, Shaun Cunningham writes about the immersive sound of Auro-3D®, while G. John Garrett’s “Technically Speaking” column discusses some of the improvements found in iZotope’s RX4 Advanced software. For those of you who have had a rough week working on the set of a reality show, check out Michael Alexander’s “Soundtopia” article to read about one of the crazier setups we’ve come across. Thinking about putting pen to paper? Jay Rose provides some suggestions in his “How to Write About Sound … or Almost Anything Else” piece. As always, you can see what your fellow members are up to in the “Been There Done That” section and bust their chops at the CAS Awards ceremony (on February 14) about their “The Lighter Side” submissions.

The CAS Quarterly is produced as a service to our members on a voluntary basis. We greatly appreciate and want your feedback and suggestions—so send them in! Email us at CASQuarterly@CinemaAudioSociety.org. Know that we truly value the support of our sponsors and encourage your commitment to them, realizing that they are professionals just like you. Here’s wishing you and yours a happy, healthy, and busy 2015!

Matt Foglia, CAS

Karol Urban, CAS

Corrections Fall 2014 CAS Quarterly

In the article “The Evolution of the Sound Cart,” Crew Chamberlain was incorrectly labeled as a member of the CAS. We thank Crew for providing valuable contributions of photos and knowledge to the benefit of this publication and apologize for this mistaken accolade.

In his “Technically Speaking” column, G. John Garrett, CAS repeatedly refers to people and companies winning “Oscars” for their developments and innovations. This statement is incorrect and should have been clarified by the editors. The term “Oscar” technically refers to the gold statuette that is awarded during the Academy Awards ceremony. Scientific and Technical Achievement Award winners, which these all were, are awarded a plaque at a separate ceremony that is also produced by the AMPAS.

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Warner Bros. Pictures would like to thank the Cinema Audio Society and congratulate our nominees for

Outstanding Sound Mixing in Motion Pictures – Live Action

**AMERICAN SNIPER**

Production Mixer – Walt Martin, CAS
Re-recording Mixer – Gregg Rudloff
Re-recording Mixer – John Reitz
Scoring Mixer – Robert Fernandez
ADR Mixer – Thomas J. O’Connell
Foley Mixer – James Ashwell

Outstanding Sound Mixing in Motion Pictures – Animated

**THE LEGO MOVIE**

Original Dialogue Mixer – Thomas J. O’Connell
Re-recording Mixer – Michael Semanick, CAS
Re-recording Mixer – Gregg Rudloff
Re-recording Mixer – Wayne Pashley
Scoring Mixer – Brad Haehnel
Foley Mixer – John Simpson
“HOW TO TRAIN YOUR DRAGON 2’ IS A MOVIE THE WORLD NEEDS.”

JOE MORGENSTERN
THE WALL STREET JOURNAL

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OUTSTANDING ACHIEVEMENT IN SOUND
MOTION PICTURE – ANIMATED

MOTION PICTURE SOUND EDITORS NOMINEE
GOLDEN REEL AWARD
FEATURE ANIMATION

WINNER
NATIONAL BOARD OF REVIEW
BEST ANIMATED FEATURE

WINNER
PRODUCERS GUILD OF AMERICA
BEST ANIMATED FEATURE

WINNER
VISUAL EFFECTS SOCIETY
NOMINATIONS INCLUDING
OUTSTANDING ANIMATION
IN AN ANIMATED FEATURE MOTION PICTURE

WINNER
ANNE AWARD
BEST ANIMATED FEATURE

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“'HOW TO TRAIN YOUR DRAGON 2' IS A MOVIE THE WORLD NEEDS.”

JOE MORGENSTERN
**Important voting deadlines for the 51st Annual CAS Awards**

Voting timeline for 2015 is as follows:

- Final voting begins online – Wed., Jan. 21
- Final voting ends online – 5 p.m. on Fri., Feb. 6

The 51st Annual CAS Awards are scheduled for Sat., Feb. 14, in the Crystal Ballroom of the Millennium Biltmore Hotel, Los Angeles, California

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**In memory of our friends**

As we put more years into our craft, we interact with many inspirational individuals on set and on the stage who impact our careers and lives. If you would like to notify fellow members of the passing of a collaborator they may have worked with, you can submit information and if possible, a photo to CASQuarterly@CinemaAudioSociety.org

---

**Do you own or work for a company whose facilities would enjoy copies of the CAS Quarterly?**

If so, submit the company name, contact name, requested number of copies, and mailing address to CASQuarterly@CinemaAudioSociety.org to apply for additional mailed copies of our publication.

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**Have you discovered YOU on MemberClicks?**

This great new resource will offer a current online directory to our members, as well as provide privacy settings. Plus, it helps to keep our organization green! Also, it opens a world of possibilities for additional valuable member services such as online dues pay, forums, and exclusive members-only content (coming soon). If you haven’t already, please go to CinemaAudioSociety.org and log in at the top right corner with the MemberClicks information you have received from your email.

If you are missing your MemberClicks email invitation with login and password, please contact CASOffice@CinemaAudioSociety.org so you can begin using this new feature today!
PARAMOUNT PICTURES CONGRATULATES THE SOUND TEAM AND CELEBRATES THEIR EXTRAORDINARY ACHIEVEMENT

CAS AWARDS NOMINEES
MOTION PICTURE – LIVE ACTION

MARK WEINGARTEN, CAS PRODUCTION SOUND MIXER
GARY A. RIZZO, CAS RE-RECORING MIXER
GREGG LANDAKER RE-RECORDING MIXER
ALAN MEYERSON, CAS SCORING MIXER
THOMAS J. O'CONNELL ADR MIXER
MARY JO LANG, CAS FOLEY MIXER

ACADEMY AWARD® NOMINEE
BEST SOUND MIXING
MARK WEINGARTEN
GARY A. RIZZO
GREGG LANDAKER

ACADEMY AWARD® NOMINEE
BEST SOUND EDITING
RICHARD KING

“VIEWERS CAN HEAR THEIR HEARTS BEATING TO THE SOUND OF AWE.”
— RICHARD CORLISS, TIME

INTERSTELLAR
iZotope RX4 Advanced: Revamping a Hit Product
by G. John Garrett, CAS

I recently picked up the new iZotope RX4 Advanced. Boy, the folks in Kendall Square keep improving the tools of audio repair. I wrote about my experience with RX3 Advanced in the Fall 2013 issue and now will give a quick overview of some of the most noticeable changes to the newest, coolest sonic repair toolkit that I know of.

Please note: I use RX3 and RX4 Advanced as a stand-alone application, but one of the major game-changers in RX4’s plug-in toolkit is called RX Connect. RX Connect eliminates the need for a Spectral Repair by basically acting as a conduit, shooting audio from your DAW (Pro Tools, Nuendo, Audition, etc.) to the standalone app and back again. You now can import and export track segments seamlessly. You select a region, open RX Connect, and do a Send To operation. The RX standalone app will launch—and you are working with your file in iZotope, just like that. To get the affected audio back into you DAW, simply reverse the procedure, choosing “Render” from the RX Connect plug-in window. The new process allows for better visibility, a longer length of audio to be processed, more sophisticated undo options, and a variety of RX operations to be applied at once.

The RX standalone application’s user interface is familiar to anyone who has used RX3—but they have made a few changes, mostly to reduce eye fatigue. The look is crisper, with better contrast and readability. The menu bar has some changes, which you’ll see in a moment. There are great new features, and some improvements to existing tools.

In the FILE menu, there are new default saving formats for saving as an RX document, overwriting the original file (non-destructive, with undo history), or exporting to different file types such as Ogg Vorbis and FLAC—which are now supported.

The EDIT menu is missing the Silence command, but don’t worry, it’s under the PROCESS menu now and has a keyboard shortcut. The Snap and Snap To commands are now in the VIEW menu.

Also in the VIEW menu are Clip Gain and Spectrogram settings.

The PROCESS menu has controls for some new features, too. First is the ability to launch the Learn function of every module that has learning associated with it. Silence and Reverse the waveform are here—and there are sev-
CONGRATULATIONS

Cinema Audio Society Awards Nominees

ONE-HOUR TELEVISION SERIES
THE WALKING DEAD, “NO SANCTUARY”

Michael P. Clark, CAS
PRODUCTION MIXER

Gary D. Rogers, CAS
RE-RECORDING MIXER

Daniel J. Hiland, CAS
RE-RECORDING MIXER
eral changes in available processes. The keyboard shortcuts have all changed too, but it appears to have been done for streamlining the shortcuts. Leveler, EQ Match, Ambience Match, and Loudness modules can also be launched from here.

The **TRANSPORT menu** has been streamlined a bit, with Follow Playhead and Follow Playhead Mode gone.

The **WINDOWS menu** has been expanded for access to every module, as well as waveform statistics, markers, and the spectrum analyzer, which were in the **VIEW menu** in RX3.

The **HELP menu** is unchanged from RX3.

RX4 does all the things that RX3 does so well, and then some:

There’s an automatic Leveler module ... think of a Summit Audio Tube Leveling Amplifier without the tubes. It’s an RMS Leveler that you can tell NOT to amplify noise, while it levels program material.

The Loudness module shows a lot of promise and thought. You can make sure your mixes fit into one of seven international broadcast loudness standards, or you can adjust parameters to best fit your delivery. I like it!

The Ambience Match module lets you copy the ambience of any clip and apply it to another clip. This could be handy for smoothing out room tone when intermittent noises (i.e., fans) come and go, or for extending the sonic space of an interview into the VO. Pretty slick.

The Ambience Match module lets you copy the ambience of any clip and apply it to another clip. This could be handy for smoothing out room tone when intermittent noises (i.e., fans) come and go, or for extending the sonic space of an interview into the VO. Pretty slick.

There’s also the EQ Match module, which lets you copy the EQ settings from a clip or a selection of a clip and apply them to any other. There’s a LEARN function where the module makes a running average of the spectral information from the source clip or selection. It can then use this profile for the target clip. Ozone users can also do this, but RX4 pretty much automates the process.

If you need time-stretching and pitch processing, the new Radius RT option in the Time-Pitch submenu lets you stretch, shrink, and re-pitch selections faster than Radius without being as hard on your CPU. However, the trade-off is slightly lower quality.

Clip Gain is a new feature in RX4, too. You can turn it on in the **VIEW menu** (or right-click for PC users) and a rubber-band gain line appears on the clip—which you can drag up or down from any points.

Some of the other features include a new full-screen support for Mac computers; the aforementioned export for FLAC and Ogg Vorbis formats; the ability to export marker regions as files; moveable tabs; support for 24 fps timecode; metadata display like ID3 and Broadcast WAV metadata (timecode, for instance); a new timeline ruler that will display the original source timecode of the file; updated default SAVE options; and the ability to time-reverse your audio.

The folks at iZotope continue to ask professionals how they can improve their products and what features would be good to have. Then they set out to make tools that can do just that. What will they come up with next—and what will YOU do with it? Great things, I’ll bet. •
Our focus is on U

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The Cinema Audio Society will host the 51st Annual Awards on Saturday, February 14, 2015, in the Crystal Ballroom of the Millennium Biltmore Hotel.

The evening will bring the sound community together to celebrate this year’s excellence in sound. The highest award of Career Achievement will be awarded to David Macmillan. The CAS Filmmaker Award will be presented. The Annual Technical Achievement Awards will be issued. Our very first Student Recognition Award will be presented honoring a promising individual who shows exceptional demonstrated passion for our craft. Finally, the awards for Outstanding Mixing in the following six categories will announced: Motion Pictures—Live Action, Motion Pictures—Animated, Television Movies and Mini-Series, Television Series—One Hour, Television Series—Half-Hour, and Television Non-Fiction, Variety, Music Series or Specials.

To order tickets, contact office manager Patti Fluhr at (818) 752-8624 or email: CASOffice@CinemaAudioSociety.org. Event address: The Biltmore Hotel, 506 South Grand Street, Los Angeles, CA 90071.
outstanding achievement in sound mixing for 2014

motion pictures—animated

Big Hero 6
Original Dialogue Mixer: Gabriel Guy, CAS
Re-recording Mixer: David E. Fluhr, CAS
Re-recording Mixer: Gabriel Guy, CAS
Scoring Mixer: Alan Meyerson, CAS
Foley Mixer: Mary Jo Lang, CAS

The Boxtrolls
Original Dialogue Mixer: Carlos Sotolongo
Re-recording Mixer: Tom Myers
Re-recording Mixer: Ren Klyce
Re-recording Mixer: Nathan Nance
Scoring Mixer: Nick Wollage
Foley Mixer: Mary Jo Lang, CAS

How to Train Your Dragon 2
Original Dialogue Mixer: Tighe Sheldon
Re-recording Mixer: Randy Thom, CAS
Re-recording Mixer: Shawn Murphy
Re-recording Mixer: Brandon Proctor
Scoring Mixer: Shawn Murphy
Foley Mixer: Corey Tyler

The Lego Movie
Original Dialogue Mixer: Thomas J. O’Connell
Re-recording Mixer: Michael Semanick, CAS
Re-recording Mixer: Gregg Rudloff
Re-recording Mixer: Wayne Pashley
Scoring Mixer: Brad Haehnel
Foley Mixer: Ryan Squires

Penguins of Madagascar
Original Dialogue Mixer: Tighe Sheldon
Re-recording Mixer: Paul N.J. Ottosson, CAS
Scoring Mixer: Dennis Sands, CAS
Foley Mixer: Randy K. Singer, CAS

outstanding achievement in sound mixing for 2014
television movies and mini-series

American Horror Story: Freak Show
“Monsters Among Us”
Production Mixer: Bruce Litecky, CAS
Re-recording Mixer: Joe Earle, CAS
Re-recording Mixer: Doug Andham, CAS
ADR Mixer: Evan Daum
Foley Mixer: Kyle Billingsley

Fargo (Part 2)
“The Rooster Prince”
Production Mixer: Michael Playfair, CAS
Re-recording Mixer: David Raines, CAS
Re-recording Mixer: Mark Server
ADR Mixer: Andrew Morgado

Houdini (Part 1)
Production Mixer: Tamas Csaba, CAS
Re-recording Mixer: Onnalee Blank, CAS
Re-recording Mixer: Ken Burton, CAS
ADR Mixer: Chris Navarro, CAS

The Normal Heart
Production Mixer: Drew Kunin
Re-recording Mixer: Joe Earle, CAS
Re-recording Mixer: Doug Andham, CAS
ADR Mixer: Beauregard Neylon
Foley Mixer: Scott Curtis

Sherlock
“His Last Vow”
Production Mixer: John Mooney
Re-recording Mixer: Howard Bargroff
Scoring Mixer: Nick Wollage
ADR Mixer: Peter Gleaves
Foley Mixer: William Everett
outstanding achievement in sound mixing for 2014 television series—one hour

Boardwalk Empire
“Friendless Child”
Production Mixer: Franklin D. Stettner, CAS
Re-recording Mixer: Tom Fleischman, CAS
ADR Mixer: Mark DeSimone, CAS
Foley Mixer: George Lara, CAS

Game of Thrones
“The Children”
Production Mixer: Ronan Hill, CAS
Production Mixer: Richard Dyer, CAS
Re-recording Mixer: Onnalee Blank, CAS
Re-recording Mixer: Mathew Waters, CAS
Foley Mixer: Brett Voss, CAS

Homeland
“Redux”
Production Mixer: Diethard Keck
Re-recording Mixer: Nello Torri, CAS
Re-recording Mixer: Alan M. Decker, CAS
ADR Mixer: Stephen Webster
Foley Mixer: Shawn Kennelly

True Detective
“Who Goes There”
Production Mixer: Geoffrey Patterson, CAS
Re-recording Mixer: Martin Czembor
ADR Mixer: Bobby Johanson, CAS
Foley Mixer: Matt Haasch

The Walking Dead
“No Sanctuary”
Production Mixer: Michael P. Clark, CAS
Re-recording Mixer: Gary D. Rogers, CAS
Re-recording Mixer: Daniel J. Hiland, CAS

*Please note that every effort is being made to determine the correct names of all our nominees.

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Transform noisy, distorted, or flawed audio into pristine material. With intelligent new modules, time-saving new features, and deeper levels of integration with your editing software, RX 4 is the next generation of an industry standard.

Learn more about RX 4 at www.izotope.com/rx

Winner of the 2013 Emmy Award for Outstanding Achievement in Engineering Development
outstanding achievement in sound mixing for 2014

**television series—half-hour**

**Family Guy**
“The Simpsons Guy”
Production Mixer: Patrick Clark
Re-recording Mixer: James Fitzpatrick, CAS
Re-recording Mixer: Armin Steiner

**Modern Family**
“Australia”
Production Mixer: Stephen A. Tibbo, CAS
Re-recording Mixer: Dean Okrand, CAS
Re-recording Mixer: Brian Harman, CAS

**Nurse Jackie**
“The Lady with the Lamp”
Production Mixer: Jan McLaughlin, CAS
Re-recording Mixer: Peter Waggoner

**Parks and Recreation**
“Moving Up”
Production Mixer: Steven Michael Morantz, CAS
Re-recording Mixer: John W. Cook II, CAS
Re-recording Mixer: Robert Carr, CAS

**Veep**
“Detroit”
Production Mixer: William Macpherson
Re-recording Mixer: Richard Davey

**2014 Rock and Roll Hall of Fame Induction Ceremony**
Re-recording Mixer: Brian Riordan, CAS
Re-recording Mixer: Jamie Ledner
Music Mixer: Jay Vicari
Music Mixer: Bob Clearmountain

**Cosmos: A SpaceTime Odyssey**
“Standing Up in the Milky Way”
Production Mixer: Darryl L. Frank, CAS
Re-recording Mixer: Mark Hensley
Re-recording Mixer: Joel D. Catalan
ADR Mixer: Paul Aronoff
Foley Mixer: David Torres

**Deadliest Catch**
“Lost at Sea”
Re-recording Mixer: Bob Bronow, CAS

**Foo Fighters**
*Sonic Highways* “Los Angeles”
Re-recording Mixer: Eddie Kim
Sound Mixer: Jeff Fuller

**The Roosevelts: An Intimate History (Part 3)**
“The Fire of Life”
Re-recording Mixer: Dominick Tavella, CAS
Pre-production Mixer: Lou Verrico

Additional nominees may be added and will be announced via daily updates as they are confirmed on the CAS website at: www.cinemaaudiosociety.org
The Cinema Audio Society is pleased to announce the nominees for the Annual CAS Technical Achievement Awards for Production and Post Production. Winners will be announced at the 51st Annual CAS Awards Dinner on February 14 at the Millennium Biltmore Hotel in the Crystal Ballroom. During this awards dinner, the highest honor of the CAS—the CAS Career Achievement Award—will be presented to production mixer David Macmillan.

**Production Nominees**

- **Cinela**
  - Pianissimo Microphone Suspension and Windscreern

- **K-Tek**
  - Stingray bag

- **RF Venue**
  - RF Optix Fiber Optic Remote Antenna System

- **Sound Devices, LLC**
  - Dante and MADI Audio Recorder model 970

- **Zaxcom**
  - Wide Band Digital Recording Wireless System QRX200, TRXLA2.5, and RX-12

**Post-Production Nominees**

- **Avid**
  - Pro Tools® S6

- **Exponential Audio**
  - PhoenixVerb Surround

- **iZotope**
  - RX4 Advanced

- **The Cargo Cult** (formerly Maggot Software)
  - Spanner v2.1

- **Source Elements**
  - Source-Connect Pro v3.8

nominees web links

www.cinela.fr
www.ktekbooms.com
www.rfvenue.com
www.sounddevices.com
www.zaxcom.com

www.avid.com
www.exponentialaudio.com
www.izotope.com
www.thecargocult.nz
www.source-elements.com
Five finalists from schools across the country have been invited to attend the 51st Annual CAS Awards, on February 14, where the recipient of the CAS Student Recognition Award will be revealed and presented with a $2,500 check.

“I am thrilled to announce the finalists for the first CAS Student Recognition Award. They represent the future of sound mixing,” said CAS President David Fluhr, “and after getting to know them via their applications and faculty recommendations, I can confidently say, that future is in good hands.”

The CAS Student Recognition Award Finalists are:

- Michael Cullen
  Chapman University,
  Dodge College of Film and Media Arts, Orange, CA
- Heather Fink
  New York University, Graduate Program
- John Harton
  Savannah College of Art & Design, Savannah, GA
- Danny Maurer
  University of Colorado Denver
- Alyssa Schwartzberg
  Brooklyn College

Eligibility for the CAS Student Recognition Award was open to any student enrolled and in good standing in a bachelor’s or master’s degree program at an accredited college or university. Students may be pursuing any major (indeed, many current CAS members majored in music, psychology, English, engineering, and other fields), but should have a demonstrated interest and some experience in production and/or post-production sound for film and television.

The Award will be presented at a sealed envelope dinner on February 14 in the Crystal Ballroom of the Millennium Biltmore Hotel.
An Interview with David Macmillan

Production mixer David Macmillan, CAS will soon become the 33rd recipient of the Cinema Audio Society’s highest accolade, the CAS Career Achievement Award, to be presented at the 51st Annual CAS Awards on February 14, 2015, in the Crystal Ballroom of the historic Millennium Biltmore Hotel in Los Angeles.

David Macmillan’s career spans over 50 years. With over 80 film credits to his name and three Oscars, David has collaborated with many of the greats such as Oliver Stone, Ron Howard, Alan Parker, Lawrence Kasdan, Sydney Pollack, Philip Kaufman, Tony Scott, Joel Shumacher, Nora Ephron, Mike Nichols, Kathryn Bigelow, Jan de Bont, Jay Roach, Judd Apatow, and many others.

He also generously offers his knowledge and experience to budding film professionals through his work teaching at UCLA, USC, Chapman University, and Loyola Marymount University.

On December 1, he sat down with fellow production mixer and current Cinema Audio Society Vice President, Mark Ulano, to discuss his many adventures.
What type of events or sequence of events brought you to a career in sound mixing?

[In September 1962—about three months before my 21st birthday], I had been working for the National Cash Register, studying computer electronics with them. I hated the 9–5. I thought, well, computers are cool but I just can’t work with these people. They weren’t cool enough for me—pencils in their pockets, ya know.

So, I went in and took the CBC [Canadian Broadcasting Corporation] test; it was to get into the technical department—and I passed it.

The CBC had an apprenticeship program: You had classes, then you worked setting up—pulling up cables, setting up microphones, putting on lenses, lining up the camera, working with the video guy, the audio guy. We got to push the Mole Richardson mic booms around.

The perambulators. We were allowed to take the test after a year. Well, my dad was in the business, he had been a stage manager at the CBC. I was around the studios all the time as a kid and I passed it the first year. We had to light a set, line up a camera, set up microphones, run through the whole broadcast system up until you send it up to the transmitter, up to the people.

So, I started off doing sound reinforcement. I thought I wanted to get into photography to be a cameraman—that seemed very sexy. But I was Canadian NABET in Toronto while the camera department was IATSE. I was a journeyman and was making a bit more money. But I saw that film workers were going all over the world.

They needed somebody to go to Calgary to do this documentary. The guy who was the director was the son of Fleming who discovered penicillin in Canada.

The next thing I knew, I had a Nagra. I had used one once at the Stockyards in Toronto. I had a Sennheiser ... those big square lavalieres and an Electro-Voice 642.

The shotgun, those are good-sounding mics. They used those on Ringo’s snare drum on the early Beatles recordings.

Yes, exactly, because they are very directional. The next thing I knew I was flying first class to Calgary with free drinks and great food. In those days, they had proper silverware and china. It was really very nice. I thought, “I can do this,” and I just stayed with it. I was only 24 at the time and I was off mixing.

So, you get to Calgary. You are 24. When from that point forward do you migrate from “this is cool” to “I really love this”?

It took a while. One of the places I went to in 1968 was San Francisco. I was doing a documentary on Don Hayakawa, Senator Sam, and then we went up to Arthur Hailey in Napa and then down into Los Angeles to do Ray Bradbury.

I had a National Film Board/CBC combined documentary
hadn’t. And I took my pension, which was around 2K, and I had about 1K saved and I bought a return ticket to San Francisco, with no intention of coming back.

I went through the phonebook to see who was in film in San Francisco. There were only about 14 people in the phonebook who were doing film in 1968. I came across one guy, John Korty, of Korty Films. He had just done a film called _Riverrun_. I think it was with Rene Auberjonois from ACT TV. He wanted somebody to just finish it up. I had learned post-production mixing as well from (CBC) Television.

That makes sense because you went to Zoetrope.
That’s how I got into Zoetrope (through John Korty). After we finished off his film he said, “I want you to meet somebody. He is coming up here to start a film business and he might have work for you.” It was Francis Coppola. So, I met Francis and he asked me if I could come in and pre-wire this equipment that he bought. It was this seven-plate 35/16mm. They were mixing dubbers. It had a video tap with a helical head on it.

I started with him in March/April of 1969, Billy Neil, and myself. (Billy Neil was his brother-in-law.) We were wiring up all these cables that were going to be for the dubbing room that he was building. Francis wanted to mix _The Rain People_, but the dubbing room wasn’t finished being built, so we had to move everything downstairs. We put the mixing console in what would become the echo chambers for Coast Recorders. We put the dubbers out in the hallway. We mixed _The Rain People_ on a little 17-inch black-and-white screen with two A700 speakers in the center of this echo chamber. Walter Murch was the editor and the primary mixer. Francis, Ron Stein, who was the composer, Billy Neil, and myself—we all pretty much worked ‘round the clock and the film was mixed in 2½ weeks and Francis ran off just in time to go to Cannes. He won a Golden Seashell at the San Sebastian International Film Festival—1969. So then, I stayed on. I was the in-house mixer at Zoetrope for about 2½ years.

Two and a half years—so that would take you to _The Godfather_?
_The Godfather_ was actually being shot at the time. It was all an LA
crew. I had just gotten my union card at Local 16 in San Francisco, which was pretty tough to do. I think they wanted an in at Zoetrope. Francis was going to do *The Conversation*; I wanted to do the production sound. But Art Rochester and Michael Evje got the job. I had more experience than both of them; I knew Francis just didn’t want to lose his in-house mixer. I was making very little money and I didn’t like [post] mixing. I didn’t like that “fix-in-the-mix” attitude. I was doing headstands in the mixing room at 3 a.m. just trying to stay awake. And so, I bought a Nagra and some microphones. I started doing commercials. I think the first Hollywood feature I did was *More American Graffiti*. But, I had done a lot of TV movies and movies of the week. I think *Die Laughing* was the second feature I did. Eventually, I ended up doing *The Right Stuff* and the rest is history.

You have named a few people who have been significant in their impact to your journey, but who would you see as your icons or mentors in the mixing side of things ... in the actual work?

Other than my training [at CBC], I basically taught myself. I learned from mistakes. I made a lot of them. I tried to hide them; I did a pretty good job of it.

What would you consider your biggest career break?

I met so many people when I was mixing in San Francisco at Zoetrope. One thing led to another and it just sort of grew. It was kind of organic; you know—you plant a seed and you water it. You get your name out there.

Directors ... You have worked with a lot of different people. I made a short list and this is the edited-down version. It goes: Coppola, Parker, Kaufman, Spielberg, Rafelson, Friedkin, Kasdan, Tony Scott, Schumacher, Pollack, Bigelow, De Bont, Stone, Howard, Nichols, Myers, Marshal, Ephron, Apatow, Martha Coolidge. Of all those, who would you say is your most appreciated collaboration?

Alan Parker. He gave me my first good movie [*Shoot the Moon*]. He was the first really good director I had worked with. He tried to use me on *Angel Hart*, but they decided to shoot it NABET in NY, so I couldn’t do it. But, Alan had always come back to me. I was at his wedding ... his last wedding. I think I had my 60th birthday on *The Life of David Gale*, which was the last film he made. And then, Phil Kaufman too, I really like Phil.

Is there something that you feel particularly good about, that you bring to the work that is “David Macmillan’s” contribution?
I don’t know really. The one thing that I will say is … I am really proud that I have five guys I have helped become mixers.

**That’s a big thing.**
And from what I can tell, and from the people who have worked with these guys that I mentored, they are terrific. Their approach is the same as mine. Not to sweat it … to be as invisible as you possibly can and to do your work quietly and quickly. You don’t chat with the actors. You don’t break their preparation. Those mixers have been very successful and I’m really very happy about that.

Also, on the technical side, I have always been very open to the new technologies that came along. I had the Stella DAT on *The Firm*.

**You are a brave man.**
Yeah, the damn thing melted on me. I had two of them. I had a Stella DAT, a PD2, and then PD4. And, actually before the Fostex, I got this hard disk recorder that would record eight tracks.

**Was it originally made for music?**
No, for radio and television. They made this hard disk recorder. And I had to buy like 10 hard disks on *What Women Want*. We were revolving these hard disks around. They swapped it for a DVD recorder. It was actually a DVD recorder by the time we did *What Women Want*. It was a proprietary file system. It was digital, but they had to transfer the DVDs to BWAV at Paramount. They weren’t really happy about it at first but it worked out just fine. I kept on pushing that digital thing. However, the digital revolution has, in some ways, been a great harm to the film business because of archiving problems.

**You are on my soapbox right now. I concur that there is a huge issue there. I was going to ask you to talk about your crews. Can you talk a little more about them individually?**
Sure. Well, you know, David Kirschner was a San Francisco State film student and he was doing transfers for Dick Birnbaum in San Francisco. I got a Mercury commercial and chose him as my boom operator. He worked for me for quite a while. We called him “Harpo” because he had a huge Afro. So, I had Harpo and he had a friend, Steve Bowerman.

There was a film called *The Island*, a horrible movie, the producers wanted to completely redo the soundtrack. They wanted a lot of ambiances and FX tracks. So they hired me and Steve and a couple of other guys to go out and record all these different things. There was a big wooden ship in San Francisco. We had about three hours to record people running on the decks, the sound below running through the decks, the sound of the raising of the sails, and all kinds of sounds.

I came down to Los Angeles on a film with Mandy Patinkin and I hired Steve to do my boom operating. He actually has a role in the film, too. Steve worked with me up until I wanted to take a break; this was after *Nixon*. I had done a whole bunch in a row. So, he left to work with another mixer and then started doing his own stuff [mixing]. I kept telling him, “You have to go out and mix because you get frustrated.”

And then there was Geoff Patterson. He was so ready.

**He is doing so well, too.**
And my brother-in-law Dan Kent, I brought him in as a cable guy. I used him on a couple of commercials when I came to Los Angeles and now he is one of the top commercial guys in town.
He has totally devoted his life to commercials. That is what he likes; he likes to play golf and has time to do both.

And then there is Duke [Marsh]. Here’s the funny story: So I told Duke that he was ready. We had just done the first Judd Apatow movie together, *The 40-Year-Old Virgin*. Shauna Robertson was a producer on it and she had a little movie called *Superbad*. I suggested that Duke do that film. He was buying gear and getting ready to do it and move up. She asked me if Duke could handle it and I said, “Absolutely.” I used to have a thing called “midnight mixer.” If we were working on a shot at about 7 or 8 p.m. and maybe had a couple shots left, I would always put Duke in the mixer’s seat. I have done this with all the guys. I would let them mix a little bit and I would stand behind them and let the cable guy boom the shot. And I would take off after a while when I felt they could handle it. I would leave maybe a half-hour early. Duke had been my midnight mixer for a couple of years.

So, when Shauna suggested he do this small low-budget film, this was before Seth Rogen became a big star. I got a call from Disney to ask me if I thought Duke could do it. I said, “Look, you hire directors before who have never directed a film because they have written a screenplay. [It is their] first time and you pay them a lot of money. This guy has been in the business for 25–30 years and has been mixing for me. He has been a second mixer all along. Duke is not only capable, but you are very lucky to have him.” So that was good enough for them. So, Duke got his go-ahead.

**This is very Old World. It is apprenticeship. It is generosity. But it is also a sense of continuity—it is a lovely thing. It is important on an ethical level to try and create that and I would suspect that your group of people will continue to do the same.**
They are all my friends. I always say you gotta work with your friends. They were all at my daughter’s wedding and I see them socially. I saw Geoff Patterson for his birthday last week.

**There are some new tools emerging. I don’t know if you have had the opportunity to use them yet or not. For instance, when microphone placement is in the frame to be removed later by CGI. Up until now, it has been an occasional solution in a particular shot. But recently, there was a film, *Les Miserables*, where the method was used throughout the film to avoid pre-record and post dubbing. What do you think about that?**
It is great to have proper mic placement and not have to worry...
about clothing rustle when you are dealing with RF microphones and to be able to put a microphone, boom, right there, especially when someone is singing …

Could it be a primal game-changer? So much of our creative energy is focused on microphone placement that works but is not seen. I am just kind of curious about your perspective—that we might be in a time where, because CGI is becoming less expensive, we may use the technique much more frequently. I see a little hesitancy. Yeah … it takes the fun away. There is a kind of … satisfaction when you have a difficult situation and you find a solution, whether it is a well-placed radio microphone or hiding a microphone or even going back to The Right Stuff. There is a scene where the John Glenn character, Ed Harris, is giving the rest of the astronauts crap because they are fooling around with the ladies and he is yelling and screaming at them. There was no way we could wire everybody. The room was like a cement echo chamber, it was an old can factory in San Francisco. So I used that same Sennheiser, that rock and roll mic. It was a big shot [that] they started off with and I figured, let them feel the echo. I got the microphone as close as I could right over Ed Harris as he’s screaming and yelling. Of course, it makes it even more echoey than if they were just speaking in a normal voice. You know, it worked—a dynamic microphone there versus a directional condenser microphone. It takes a lot of energy to drive a dynamic microphone and that is a very directional microphone. The secondary sounds that are bouncing off the walls are not affecting the microphone as much. It doesn’t have the level, but you don’t need the level when someone is yelling … and so, on this big wide shot, the sound is a little thin but it worked with the scene. And, of course, when we went into the close-ups, I still used that microphone because it was still very echoey in there and it sounds just fine. Yeah, It’s perfect. It’s fun.

[Fun] That’s a big deal, right? Oh God, yeah. You wouldn’t do it if you weren’t having fun. As soon as you stop having fun, it is time to do something different.

If you could wave a magic wand, what change would you bring to the world of sound for picture these days? My gosh, I don’t know … I really don’t know. The microphone technology has gotten so good. I used the DPA microphones, the boom microphones, on the last two features I did. I love them. I didn’t own the DPA lavaliere, but I have heard them,
thought they’re phenomenal and, if I would have stayed on, I probably would have bought them.

Regarding the recording: The cameramen were basically forced to use digital cameras by the studios because it is a hell of a lot cheaper (and before they realized how tenuous the archiving process is of those films). Those hard disks have to be exercised, otherwise they are just going to freeze and crash. There is a lot of information … a lot of history. I think it is more of a problem for documentaries because documentaries record our history, and in a way that no other form does. There is really no other capture method, really, that records history that we can see and feel by watching these projects. For the Library of Congress, this is a major issue.

It is a major issue everywhere—government, corporate, military. All information has migrated to this area of non-stable archiving. There is massive pressure to generate stable technologies that haven’t emerged yet. Even with time and all these resources and money, it has not emerged. We do not have a stable method to make these things retrievable in 10, 15, 100 years, indefinitely. For instance, the minimum archiving requirement for acid-free paper and ink is 500 years.

The Norwegians have proven, and they are really on the leading edge of this, that a film, if stored properly, will last 500 years.

What calls you to teaching at this point in your life?

Well, Eric Moran was a sound editing teacher at UCLA and we were on a tour boat out in Santa Monica Bay for somebody’s birthday. He knew about me and he said, “Would you be interested in coming to UCLA?”

Well, the UCLA gig got me in touch with a couple other people. USC asked me if I wanted to do one class. Then one of the guys at UCLA went over to LMU (Loyola Marymount University), so I started doing workshops there. Then I got a gig at Chapman through my friend Johnny Jensen, who teaches camera.

It is easy to say you want to pass it on. But, my daughter went to film school at USC. So, I talked to Doug Vaughan, who was teaching there. I said, “I would love to come in and do a class for you.” I wanted to do it. I wanted to just sit and talk with the kids.

Then two years ago, UCLA asked me if I would come and teach a full quarter on production sound. And this past year, Doug asked me if I would come and do a full year at USC with grad students.

Basically, we created a pilot at USC with the grad students. It has been written with a show runner and six writers. Once the show was conceptualized, they had to do a pitch. They chose one pitch and then a show runner and they break everything down into seven different disciplines: director, producer, camera, production designer, writer, sound, and editing. The first semester, they are in one of the different disciplines. On the second act, which will be the first part of the spring semester, we change them around. I’ll get four more different students. Then they move around to a different discipline to whatever
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their preferences are. And on the third act, we’ll do it again. So they get to work in three different areas within the school year and it’s kind of great. There are some really good people that are involved and I am really enjoying it.

What we do is all meet together for an hour in the morning, all the students and all the teachers’ disciplines. Of course, I make a pitch at the beginning of the year for why students should be doing what I do. Sound was nobody’s first choice; it was always third or fourth. But, they were interested in sound. How I sold sound myself was that I said, “Look, I know you guys probably don’t want to be sound mixers. You are not spending the money you are spending at this school in a graduate class to be a sound mixer. You never know, you may end up being one, and it is a wonderful position. But, let me tell you about sound. You will learn more about what everybody else does because, when you are on the set, you can ask questions of what everybody is doing and you are watching what everybody is doing, but they can’t talk to you when you are working ‘cause they have to keep their mouths shut.” [Laughs.] I gave them that kind of explanation and I got 14 people out of 37. Almost half of them wanted, at some point, to learn sound.

It’s true; sound is a window to the entire process. We are not as camera-centric as all the other departments and we have an autonomy that makes us a permanent student of the filmmaking process. I want to see the locations; I think it is really important for sound mixers to go on location scouts. Sometimes it is really difficult—they don’t want to spend the money on the couple extra days, especially if you are going out of town. But that is important as well. You want to know where the generator is going to be. And you have to make friends when you are the production mixer. First of all, you are going to be with them for three months. Just become friends with the camera operator, the gaffer, the key grips, and the special effects guys and you will get more out them. They are willing to help you more. So you have to create those relationships on the set. That is part of the preparation as well: getting to know the guys you’ll be working with. And it is great when you work with them again because they are so happy to help you, especially if you are nice to them. Everything you can do to sort of create a give-and-take type of attitude with the rest of the people on your set.

How do you prep for a project? What is your homework ritual?
Well, I read the script and break it down for myself, see the places where there could be possible problems so that I can bring it up in the production meeting.

How do you do a script breakdown for sound?
I just make notes on them as I read through them and then, when we do a read through at a production meeting, I’ll bring up points that I think they should be aware of. It is like on Apollo 13 … this is one of the things I tell the students … It is when the rocket takes off and they are sitting on bleachers out on this field and they are looking at one of my other fish poles. They got a little rock on it and they have it up in the sky and they are supposed to be welling up in tears. I had talked to one of the guys who had been at one of the Apollo launches
and he said when it took off, it was so powerful; everybody had tears in their eyes. It was this incredible ability to be able to harness so much power. I have seen the shuttle take off and I got weepy.

For the same reason?

[Yes], for the same reason. But, I can’t imagine … I mean, I have seen the size of the Saturn rocket. The five main engines are huge. It is an unbelievable amount of power and sound they produce. So, I said to Ron [Howard], “I have a great idea. I want to get a big sound system and play a recording of a launch that I have and play it really, really loud, underneath the actors’ seats.” And I did it. I rented a huge unit. I forget what it was at the time. It was like 5,000 watts of power and four big speakers. But the best thing was that Kathleen Quinlan came down after and said, “Gee, thank you, Dave. That was great. That really helped.” Those kind of things are part of the preparation. You see an opportunity to help move the story along.

I call that filmmaking. You are making an environment that was going to produce a result on camera that wouldn’t have occurred in any other way.

It helped. That’s part of it. I’ve always thought what we did was filmmaking. Even when sometimes you’ll catch an actor with a glitch or a bobble in their lines and the director won’t notice it. I will quietly mention it to them. If he likes the take, I might say, “You might want to listen to that. You may not need it; it may not be the take you use. But there was a bobble in the lines there.”

You are an advocate in that situation.

Yeah, you are involved. The Academy Awards give you a sort of gravitas in a sense that they think you are really great because you have Academy Awards. That’s not the point. The point of the Academy Awards is you got the right film sort of thing. We all do the same thing.

What do you think the real significance of industry awards are and how has the broad acknowledgement of your talent affected you?

It certainly helped my career; there is no two ways about it. But there may be too much importance placed on it. I am far more proud
of the guys that I have moved forward than the three Academy Awards. They are great to have. They look great on top of the piano. It lends you a certain amount of gravitas where your words matter a little bit more. But there is more expected of you with the awards.

An old English production designer friend of mine told me when he asked me how I was doing one morning I had said, “I am doing great” or maybe “Excellent” or something like that. He said, “Mate, you don’t want to be excellent. You want to be on time and average. Then nobody expects anymore than that from you.” It is kind of a joke in a way. But, you are lucky to get the show that has the sound elements that make people aware of the sound and basically takes a bigger part in the film.

It doesn’t solve the next shot. But it is good for your friends and good for your family. And it gives you some perspective.

Well, you got an Academy Award for one of the most difficult films I would imagine ever made. Cameron was on that as well. You won for Titanic?

I did do the film, it is true. It was a challenging experience. I revere the experience. But, the award itself is an abstraction in a strange way. It is a danger to lose perspective.

Exactly. Don’t let your ego get carried away.

That’s right. It is a mistake. You are grateful for the award, but, okay, what’s next?

That is exactly my sentiment. I totally feel that way.

Can you talk a little about the significance of wearing a kilt to the Oscars?

You know, I broke my leg skiing about six weeks before the Oscars. And I couldn’t get a tuxedo pant on. Well, I had worn a kilt as a child. My dad was Scottish and I lived in Scotland as a child. So, I rented a kilt.

Was it the right one for your family?

It was very, very close. It wasn’t the right one for my family though. I own a kilt now; it is the Macmillan family tartan. It was great. I was in Women’s Wear Daily the following day. Anyway, so then I won. So when I was nominated again, I had to wear it.

Tradition?

Tradition. I had to wear it. So, I won the three times I wore it. Then of course, I was nominated for an Emmy and I didn’t wear it and I didn’t win.

You have described yourself as retired now. But, I don’t really feel a retired kind of thing going on here.

I tell you what. Most of the films I have been working on have been out of town. The kids are gone. My wife is busy. I am 73 years of age. I like to golf and I like my free time. And, I like that I have got two days a week that I am teaching. That is enough for me right now.

Is there anything that I didn’t touch on? A burning question or comment … some pronouncement from the mountaintop if you will … or not?

That is a good one. I just think that we are really fortunate at this time and place, or at least at the time and place that I have been in business, to at least see the changes that have happened. And to have been a part of the changes. I think we went through one of the greatest times of making feature films … in the ’70s, ’80s, and ’90s. The business is changing, it has become very corporate. It has become very detached in a sense from the actual creativity. We make cartoons now. It is really only the independents that are making really good, decent movies. Movies you really want to feel from the heart.

You know it is funny … Roland Joffé was saying there are three ways to see a movie. There is the intellectual, the heart, or the gut. And he asked me how I viewed them when we were on the panel. Well, I really basically come from the heart. The last thing I want to do is to recognize anything in film. I don’t want anything to stand aside. It is great to see great acting. But, you don’t want to notice any of the technical things. You want to know that everything works together toward the film. I think my heart feels that.

The last film I saw is called Mommy. It was shot … the format is 1 x 1. It is about a kid who had ADHD and a single mom. And the kid is really out of control and is being thrown out of the special school that he was in. A neighbor across the street is a teacher. She can get him to work for her. The framing itself gave you the feeling of just how constrained her life was and how much pressure she was feeling. Because everything had been pulled in. There was one spot in the film where he was on a skateboard. And he is on a skateboard a lot. But he is happy for the first time. And he does this with his arms (imitates arm movement), and the screen goes wide and slowly goes right back in as the tension builds. I felt it in my stomach. It is very confining … very tense. At first, people weren’t sure. They didn’t like the 1 x 1. But they realized it had such an impact on the film. The choice to do that, the bravery to do that needs to be recognized. We gave it the Bronze Frog.

That is a great answer. I see great optimism in the fact that you can, at this point with as challenging an environment as it is to get a film and get a film done without intrusion of all kinds of elements not related to the film’s actual virtue, find a film that had something that will cut through all that and get to you at its intended level. Every time I get a little negative and jaded about it, I’ll run into a film that had something that will cut through all that and get to you at its intended level. It is like I am really glad someone got that to happen.

[That they] tried something different.

Tried something different and achieved something that is new, new for me. That I didn’t have some preconceived agenda or notion. I have learned something there. It is a good answer.
The one thing that I have heard said, Mark, is that is a good possibility with sampling. There is a possibility that we can be able to record one microphone, an omni-directional microphone in the middle of the room, and then create all the perspectives. You sample the actors’ voices and all of a sudden the next thing you know, you won’t have a sound guy—you just have somebody that pushes a button. I would hate to see that happen, but I wouldn’t doubt that would be very ... I mean, we are going off into the future here but ...

**Certain instruments disappear. If an intense and very focused discipline evolves into an unnecessary discipline at some point, this is the way of the world. My personal perspective is that the value of the sound person on the set is not about the technology. It is about the contribution to the rest of the piece. If you can do the types of things you are describing ... if you are helping create an environment for an actor or you’re responding ... all of those supersede the particular instrument.**

No, I agree. That’s one thing I teach [and] tell the kids. You have to really respect the actor’s preparation, especially when you are doing a dramatic film. If you have to put a radio mic on them because you a shooting with three different cameras, it is the solution. You want to be able to do it quickly, quietly, and you want to be able to shoot ... do it once. You don’t want to have to go back and re-mic or futz with it again.

It was like on *Birdy*. Birdy’s cell was like a 20 x 20 room with about a 20-foot ceiling. It had ceramic tile walls and a cement ceiling and floor and a lot of it was shot with a 17mm lens to give the feeling of Birdy’s loneliness and isolation. It made sense. You could see the bars up high that Birdy would look at. This was his way to escape. And he was mute. He had gone completely mute. But Al was dressed in the older military uniform. I told Al Parker, “Alan, I am going to need a little more time wiring the guys.” Because they have these really horrible costumes that make a lot of noise. They are not quiet. There are a lot of synthetics in them that are rough and hard. You know, like the hospital costume and the military uniform. It is a real challenge. He talked to the guys. I talked to the guys. I said, “This may take a little longer than usual. But, if you give me a shot at it, you are not going to have to loop these scenes and these are not scenes you are going to want to loop.” And I made all kinds of little gags. We got really good sound and Parker was really pleased. I did the micing myself. I would mic the two actors every day. I was really proud of the sound. A lot of times, people ask me what is the best sound I ever did and I say *Birdy*, because it was the most challenging.
Building “Soundtopia”

Sound for a reality show on steroids

by Michael Alexander, CAS

Not so long ago, if you were part of the audio crew on a reality television show, most of your day was spent running around behind a camera with a Wendt X5 and trying to dial in whichever cast member was in front of you. Hopefully, you could split your 15 cast members into two blocks so that you could have a chance of at least being able to carry a few of them cleanly at the same time. If not, you could always fly the shotgun … until of course, you got in the way of one of the eight cameras all shooting the same scene. Boom up!!! Ugh. Your record destination was the camera on the shoulder of a camera person.

Of course, technology has changed a lot over the years. Eventually, DA 98s and DA 78s were brought in to multi-track. Then, the Fostex DV824 for a minute, Metacorder, Sound Devices (name your favorite box) and, of course, Pro Tools, Nuendo, etc. Wireless transmitters have come a long way, too. And the demands of the distance one needs to throw that RF cleanly has certainly kept pace with those advances. I’ve had requests to have cast members pop through a wave on a surfboard and be able to track their dialogue wirelessly as soon as they got back to paddling! We’ve also put 250mW transmitters on people in a loft in NYC so the producers could monitor it from across the street.

Then there was Utopia, a different animal altogether. 130 robotic cameras, 43 plant mics+, and 24 wireless mics for the cast and guests—all on a three-acre set. This was reality TV on steroids. Funny thing, though, no ENG on the floor, and hardly any copper wiring on it. I could easily fit the XLR and patch cables I used on the install into one Pelican 1650. It was fiber, fiber, fiber everywhere—in fact, more than 60 miles of it! Yes, we’re not in Kansas anymore—though the audio control room might as well have been. It was about a quarter mile from the set. We had 20 antennas for our wireless system and thousands of feet of LMR-600—and just two ENG run bags to cover the surprise off-campus events only, of which there were certainly many. Those bags were loaded with a Sound Devices 664 and WisyCom receivers.
The criteria on the install was that, once the cast moved in, we couldn’t get on set to adjust much for a year—unless it was in the dead of night. Hmm, I thought, better get fitted for my bear suit now. We weatherproofed the mics and hog haired the zeppelins with water repellant spray. Custom-ordered direct burial mic cable for the plant mics and had that all pulled with the video cable by, what looked like, an Egyptian pyramid building team—and sealed it in conduit. We also pulled extra tails for those mics—just in case one went bad and, more importantly, because it was all getting buried by a backhoe. Once we pushed the big red button, we had to be prepared to roll for 365 days straight, 24/7, live to the Internet.

On *Utopia*, we were using wideband Sennheiser 5212 transmitters with DirectOut Technologies ANDIAMO .MC mic pres and the M.1k2 MADI router. Designing the system with Bexel, we had to think of all of the gotchas, and how to protect ourselves if there was a catastrophic failure of any piece of gear—which could have the potential to make the largest robotic camera show ever produced into a silent movie. Since most of the equipment that was being used wasn’t able to be tested running at full tilt for 365 days, the only way to protect against that was to build in redundancy with hot spares of the main components. We have redundant multi-track, audio routers, A/D and D/A converters ready to patch at a moment’s notice along with four discrete 20 amp circuits built in to the audio control room. I practiced that fire drill in my head many times, but physically I just did it once. And wouldn’t you know it, I came into work one morning 10 days into the show and had no control of my audio router. It was still passing audio, though. Not good, but not terrible. With adrenalin pumping, we did the swap for the new router: 18 ports patched, 64 channels of MADI, recalled my snapshot, and we were back. Whew … yes, I was still employed. But wait! We still had to replace the original router, test that one, and deploy that one as the spare. Slightly less nerve-racking, but only possible with the help of an ace team of fellow sound friends. It was a four a.m. exercise that I’d prefer to not have to repeat …

*Utopia*, fed 64 channels of audio via MADI to two Yamaha DM2000s and output those 64 channels to three different record destinations. One was Metacorder. I know, I know, Metacorder was not the no. one choice, but it was the only proven platform available that would break our files automatically on the hour and allow us to print to a network drive which lived in post. The AEs in post would drag those closed files out of the daily folder that we were still printing to. Another was Pronology, which is an amazing tapeless capture system. I believe it is the
MKH 70s, a couple of PZMs and a couple of Countryman Isomax, one of my favorites. We even had a lily pad loaded with real plants built so that I could float two MKH 8070s and an MKH 70 in the middle of the lake to get better coverage. There was also a handful of Crown light switch PZMs which the art department painted to look rusty and awesome. We even had a water bottle mic for the naked yoga sessions. Hey, I told you things have changed a lot!

To communicate with the cast, we had five different paging zones that allowed the producers to talk discretely to different areas of the property via an assortment of speakers. Some of them were built to look like rocks so they would disappear. Processing-wise, we had a CEDAR DNS 8 Live on the front end of the mics around the lake and a CEDAR 1500 on the two-mix that went to the Internet and also got printed as mix tracks for post.

Choosing the mics and doing the build is always a lot of fun for me. On Utopia, we used custom-made necklaces that were stuffed with COS-11s and a boatload of wind protection. There were also lots of Sennheiser ME66 mics in the house with a sprinkling of Schoeps in the main area. Around the lake, waterfall and dock, we had a mixture of Sennheiser 816s, 8070s, and MKH 70s, a couple of PZMs and a couple of Countryman Isomax, one of my favorites. We even had a lily pad loaded with real plants built so that I could float two MKH 8070s and an MKH 70 in the middle of the lake to get better coverage. There was also a handful of Crown light switch PZMs which the art department painted to look rusty and awesome. We even had a water bottle mic for the naked yoga sessions. Hey, I told you things have changed a lot!

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The installation was very time-consuming because, not only did everything need to be hidden from any camera view, the audio control room was built around the gear—which was largely piled in the corner for weeks. Software was literally being written and uploaded after rehearsal so that the operators could group, then control 130 cameras. Walls were built, double-paned glass installed, carpet laid, and drywall hung in the VIP viewing area. You get the picture—a construction zone operating on sketchy generator power. 120V of sweet, clean, and beautiful power finally arrived about a week before rehearsals started. Ahhh, yes, A/C, always the albatross, right?

Pressing record on day one felt like sliding into home plate just under the glove, knowing that I had a great team working with me. There was no official number released as to the cost of the production, but the trades put it at north of $50 million. Of course, that’s huge considering it was a reality show. And with all of the whiz-bang technology, sweat, and hours spent to create the show, I hoped that people would find this grand social experiment interesting to watch. It was different subject-wise, and there were things happening technically behind the scenes that have never been done before on any television show. But once we deliver the sound elements, we all know that the rest is out of our hands.

The technical requirements and the tools that we use to do our job, of course, are exactly the same regardless if a show is successful for the network or not. We are a diligent lot and we strive to make the sonic quality as good as we possibly can. But in the end, Utopia was canceled just short of its first cycle. So much for our yearlong social experiment; it just couldn’t find an audience. Our 300-member crew is now scattered onto a variety of next gigs. Still, to me, the show was a raging success, even if “Soundtopia” lived for just a short while. Such a crazy business this is at times. I wouldn’t have it any other way.

6. Light switch mic on set of Utopia
7. Lily pad with hidden mics
8. Robo cam
9. Rock speaker
10. RF rack
11. Water bottle with hidden mic
Auro-3D is a unique, immersive sound format created by Wilfried Van Baelen. It is the first sound format in history to come to the cinema market with an end-to-end solution adding the height dimension all around the audience—which Wilfried called “Immersive Sound” and, has since, become the standard term.

The Auro-3D format system involves a 3D speaker layout and technologies that enable easy integration in all workflows while using existing delivery formats. The vision of the Auro-3D format is, first, to create the most immersive sound experience using a true 3D space around the listener using channel-based technology and providing further upgrades with object-based technology for setups with at least 20 channels.

Depending on the size and shape of the room, the Auro-3D format has scalable speaker layouts from 11.1 up to 13.1.

The sound field-based system adds to the existing 5.1 infrastructure already installed in dub stages and cinema theaters with a second “Height” layer above the normal level of speakers through the surrounds and screen channels. Additionally, there is a third layer on the ceiling known as the “Top” layer, sometimes called the “Voice of God” channel. Wilfried explains that “The Auro-3D speaker layouts are the crucial part of the experience. It is the ‘vertical stereo field’ all around the listener that is unique to all Auro-3D formats, which creates that magical effect. Many people believe that immersive sound is mainly related to sound coming from directly above us, but that’s not correct because humans are, first of all, less sensitive to sounds coming from directly above and, secondly, there are, in nature (inside or outside), less reflections or source sounds coming from above. Most important sources and their crucial 3D reflections have their origins within that vertical stereo all around. As a professional and experienced engineer/producer, I underestimated very much the impact of those 3D reflections on our human system. But during all those tests I did in 2005 designing the Auro-3D format, I started to understand how those 3D reflections are crucial in order to deliver a natural sound. This is because more than 90% of what we hear around us are the reflections and not the direct sources. The question was how to recreate that with rooms of different sizes and shapes. Therefore, I developed very scalable 3D speaker layouts (based on existing 5.1/7.1 standards), adding the crucial vertical stereo field all around the listener. This guarantees a similar immersive experience everywhere, while keeping high-resolution audio in each channel without the need of extra bandwidth.

“Research has shown that we need at least three vertical layers in a large room in order to reproduce a natural spread of sound energy in the vertical axis. This has to do with the fact that the human hearing system does not work vertically the same way it does horizontally. We don’t have an ear on top of our head to capture the vertical time differences. Human beings are extremely sensitive to those time differences in the horizontal axis: only four millionth to five millionth of a second is needed to bring the sounds from our ears to the cortex brain where the 3D sound field is analyzed. Note that five microseconds is the same wavelength as a 200 kHz sample. So that’s the reason why we hear spatial differences up to 400 kHz sampling (one octave higher is needed to capture 200 kHz). So we cannot position sounds in the vertical axis as phantom sources like we do in a horizontal stereo field. This issue cannot be solved by using object-based technology, but only by adding layers in the vertical
axis. The Auro 11.1 unique three-layered Auro-3D speaker layouts allow a much more precise vertical localization of sounds compared to any other two-layered system using object-based technology. It is that vertical precision and natural spread of sound energy all around the audience that is key to creating the most natural immersive experience. Additionally, the vertical inter-channel information between the surround 5.1 layer and Auro-3D’s unique second layer ‘Height Layer’ is very important for our brain to better analyze our surrounding 3D sound field. The ‘Top Layer’ (Auro-3D’s third layer) is good for flyovers and some special effects, but not necessarily key to get the most natural immersive sound experience.”

Early on, the Auro-3D system got the attention of re-recording mixer Marti D. Humphrey, CAS, owner of The Dub Stage in Burbank, Calif. Marti was the first studio owner and mixer in the Los Angeles area to install an Auro-3D system, making it the first immersive capable stage in LA, as well. Marti installed the Auro-3D studio system onto his stage three years ago and has been mixing in the format ever since. “What attracted me to this format is the ability to do it as a plug-in. There’s no outside hardware, and the reason you need a plug-in to do this is Avid/Pro Tools has a limitation of X, Y panning, and no Z panning—which is height. So, in an immersive format, you need to be able to pan to the height. The other limitation is a maximum eight-channel mix bus in Pro Tools. So the whole need for plug-ins in the immersive formats is to work around the limitations in Pro Tools. What the Auro-3D plug-ins allow us to do is to use two surround panners; one for the X and Y pans and the other for the Z pan or height. Also, the Auro-3D Creative Tool Suite allows you to get more than an eight-channel mix bus out of Pro Tools. That creates a simple workaround that allows you to visually see where you need to be and allow more busses. At The Dub Stage, we’re able to mix with Auro-3D and MDA and Auro-3D with objects. I think one of the strengths of the Auro-3D format is the three layers, and when you add objects within it, there’s nothing that can compete with it. It truly is absolutely amaz-

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1. Wilfried Van Baalen, CEO of Auro Technologies & inventor of the Auro-3D format
3. Three vertical layers are needed in order to reproduce a natural hemispheric spread of sound.
5. The small mobile Auro-3D mic for dialogue recording on set.
When you add the fact that most people in this town are working in Pro Tools, it allows anybody with a small investment in speakers wired up into the format, monitor capability to listen in the format, and the plug-in the Auro-3D Creative Tool Suite to create within Pro Tools. It's a combination that any studio can go ahead and do. I'm an owner/operator so it's me making all the decisions, and I saw the immersive opportunity to be an extension of the direction I've always liked working in—which is in surround. I did my first surround mix in 1982. And when I say surround, I don't want that to be confused with some of the 'younger' people who say 'you mixed 5.1 in 1982?' No, it was Lt/Rt in '82, and I've been really in love with surround as a format since.

"After listening to Wilfried Van Baelen’s comments and observations, and looking at the toolset and his thought process, I was immediately won over. Passion was the reason we went ahead and became the first immersive dub stage in Los Angeles that also happened to be the first dub stage with the Auro-3D studio system in Hollywood. I foresaw it as being something we could use in storytelling to create a sonic atmosphere that would allow us to get more sound elements in the storytelling and be able to manage it within our normal workflow. For me, my studio, my workflow, and my fellow co-worker Chris Jacobson, CAS, it’s the best way, the best format, the easiest way to be creative carrying on The Dub Stage tradition."

The Auro-3D speaker layouts also include a height layer in the screen channels, bringing the total to six speakers behind the screen. Wilfried explains that the reason behind this is that "more than 80% of the sound energy is coming from the screen, typically from only three screen channels (Left, Center, Right). So, many hundreds of sounds are coming in those three channels and it is not easy to bring the richness of..."
the complex sound design from today, as well as the music, without losing too much info—and without touching the intelligibility of the dialogue. Having a vertical stereo field on the screen with six channels allows for so many more creative possibilities. First of all, it allows sounds to split in the vertical axis creating much more clarity and transparency. Auro-3D is, as well, a native 3D audio format (which is not possible with object-based technology) creating extra harmonics and natural colors of sound that makes the sound of an orchestra so much more natural and immersive—and that’s what film music is about. Those six screen channels allow the music to come out much more without compromising the dialogue or sound design. That result cannot be achieved even when using five screen channels in one horizontal axis, such as SDDS 7.1 surround. The six screen channels also allow more coherence with the position of the sources on the screen. It is not possible to position sounds as a phantom source between two vertically placed speakers, but this is not the case with a triangle relationship of speakers. The six screen channels have many triangle relationships, creating many more ‘zones’ on screen.”

Many mixers working in immersive formats comment that the level of clarity is unprecedented and Marti agrees. “One of the other reasons I went with Auro-3D is because, not only do I get the immersive format, but I love the three layers; there’s the lower level which is your standard 5.1; the height layer; and then the Voice of God (Top) layer. So, between the three, you’re able to put things in different layers and discern differences in elements. The problem with a standard mix in 5.1, as great as it is, is that, in the center speaker, you have dialogue, music, FX, Foley, Group ADR, the whole nine yards fighting to cut through, and you get a sonic buildup. So we EQ, we compress, and we do everything we can. Now the beauty of this format is that I’m able to take, for example, the music and pull it into the height layer speakers, and go ahead and take that standard Decca tree orchestral recording and pull it into the room and give it space there. All of a sudden, now that we’re able to take our ambiances and pull them into other areas, we take that clutter out of the center speaker and we now have clarity. I find that when we do that, we end up mixing less. I can put less volume to get the clarity that I’ve been looking for. Therefore, you have a much more immersive mix and, at the same time, you can take elements and place them anywhere you want to give you that level of—I don’t know if it’s realism but it’s that level of clarity that we all aspire to.”

The method of delivering and playing back all of these additional speaker channels is another unique feature of Auro-3D. Marti explains that “When we finish the Auro 11.1 mix, we print a discrete 11.1 mix for archival purposes. Then we take that Auro 11.1 mix and run it through an Auro-3D encoder that goes ahead and takes that Auro 11.1 mix and creates a 5.1 Auro-encoded mix. We call that the enhanced track. The Auro-encoded 5.1 (enhanced track) has all the immersive information of the Auro 11.1 mix that we’ve created and folds it into a standard 5.1 mix. However, it just has a little more depth and also these little subtleties in it compared to a mix done only in 5.1. Yet, I can take that Auro-encoded 5.1 mix and play it back in the theater as a standard 5.1. The neat thing about it is that it’s great for inventory; it fits on the standard DCP track and doesn’t take any extra bandwidth. That’s one of the beauties of it.”

Wilfried designed the system so that the “technology allows the Auro-3D mix to be encoded in the 5.1 surround PCM final mix. During the workflow, the engineers create the Auro-3D mix and control the dynamic downmix, which is not just a matrix but can also have fader movements to create the ideal 5.1 surround mix. Typically, this 5.1 mix created from the Auro 11.1 mix is an enhanced mix compared to a dedicated 5.1 mix. Many engineers question this but I always say ‘try it and you will see that it works because many creative decisions are made easier in a 3D sound field. Plus, they do reflect in the 5.1 surround mix—especially with our unique speaker layouts.’ The Auro-Codec enables this creative dynamic downmix without any loss of audio quality. In fact, the encoding process is just using four of the least significant bits of the 24-bit PCM stream for mixing all PCM channels to less channels while staying in the PCM domain. This has the huge advantage of being able to create two artistic formats in just one standard PCM delivery file while keeping high-resolution audio in each encoded and decoded channel. This groundbreaking technology allows us to bring immersive sound as a reproduction of a ‘space all around the audience’ very easily to all audio markets.”

The ability to have the Auro 11.1 mix encoded into a standard 5.1 PCM audio format has been a draw for dub stage owners and exhibitors alike. Barco is a company that has built their reputation on the cinema experience. When they started interviewing their exhibition customer base about what they were looking for to enhance the viewer experience, many of them came back and said sound. Digital projections have offered higher and higher resolutions such as 2K, 4K, and 3D formats, but sound was still only 5.1 or 7.1 surround sound. They were looking for a way to provide an immersive sound format to their customers without a significant price tag attached to it when they found Auro Technologies. The unique part of the Auro-3D immersive format was the three layers of sound with a limited channel count that would reduce the complexity of the system but enhance the immersive experience in the entire cinema auditorium. On top of that, the Auro-Codec encodes all the extra channel information in the uncompressed linear PCM audio tracks that are already in use in theaters. This was a significant approach to immersive
sound for exhibitors because it doesn’t require them to add more inventories to their distributions. Another important plus for the Auro-3D format is that Auro Technologies does not require any license fee from the content owners.

The Auro-3D system certainly creates an immersive and exceptional experience in the cinema, but movies only run in the theaters for a short time and then spend the rest of their lives on DVD, Blu-ray, or streaming services. So how do you bring that same experience home? They already have, thanks to Auro’s encoding process. Wilfried explains that “for Blu-ray, we use the same principle. The 5.1 PCM stream from the Blu-ray disc is used to deliver the Auro-3D mix with the same studio-grade quality as experienced by the creators during the final mix. In the meantime, we have released more than 10 Blu-rays and Pure Audio Blu-rays on the market for music, with more movies to follow soon. Two years ago, our first movie on the Blu-ray market was Red Tails from George Lucas, which was the first film to ever use immersive sound, and was announced in 2011.” Currently, Denon and Marantz are offering A/V receivers that will decode the Auro-3D-encoded track on your current Blu-ray player and play back an immersive sound experience in your home.

As of this year, there are 265 theaters, 69 titles (in 2014 alone), and 33 dub stages around the world Auro-equipped. With a growing format, there will be many studios of all sizes wanting to join in on creating an immersive experience and Wilfried says that “a very key thing is that the Auro-3D system can be easily used in smaller spaces with a much smaller setup, while keeping full control of the creation done in the 3D space. This is important for sound designers. Nowadays, most of the movies mixed in immersive sound are not designed as such from the sound designer. Mainly, they use mono and stereo sounds to re-create an immersive sound during the final mix in an artificial way—since the sound designers don’t have the ability. With the Auro-3D format, sound designers can already start the design in Auro-3D with a simple Auro 9.1 setup and the Auro-3D Creative Tool Suite with some basic sounds in native Auro-3D (the first native Auro-3D sound banks are available already). Richard King (winner of three Academy Awards for Best Sound Editing) has installed Auro-3D in his sound design room at Warner Bros. Studios so that he can control the full sound design, including some pre-mixing, using the Auro-3D Creative Tool Suite. The addition of this third dimension allows so much more creative possibilities, which will take at least a generation before it will be understood and used to its full capacity. I have already recorded a few films with dialogue and ambiances in native Auro-3D sound and I have never had such an immersive experience listening to the dialogue with clarity and intelligibility. I know it is a

For further information, please visit www.Auro-3D.com or request a trial license at info@auro-technologies.com.
and reference Decoder and Auro®-Headphone™. It fully includes the Auro-Panner™, Auro-Codec® Encoder Authoring Tools are forming the core of this tool suite the new creative possibilities of Auro-3D. The Auro-3D creation workflows and enables the user to fully embrace for immersive 3D audio. It fits into existing content markets as intended by its creators."

Sven Mevissen, Director of Content Production at Auro Technologies, adds, “Auro Technologies’ ‘Creative Tool Suite’ is a set of plug-ins designed and developed for immersive 3D audio. It fits into existing content creation workflows and enables the user to fully embrace the new creative possibilities of Auro-3D. The Auro-3D Authoring Tools are forming the core of this tool suite and are a feature-rich and essential collection of plug-ins including the Auro-Panner™, Auro-Codec® and reference Decoder and Auro®-Headphone™. It fully integrates Auro’s ‘Unified Workflow Concept’ using the Auro-Mixing Engine, which offers a combined workflow for multiple deliverables and support for all Auro-3D formats including AuroMax® (adds object-based audio to the channel-based immersive mix), Auro 11.1 and Auro 9.1. Auro-Matic® Pro™ is another member of the Creative Tool Suite and is capable of creating an astonishingly realistic and natural three-dimensional sound field from any mono, stereo, or surround source. It also comes as a 2D version only, supporting mono and stereo, to 5.1 up-mixing. All the plug-ins of the Creative Tool Suite are using Auro Technologies’ A3D host technology, which improves and simplifies audio routing and interconnection between multiple plug-ins. They are currently available for Avid’s Pro Tools (10 & 11), but support for other DAWs will be announced shortly.”

Capturing recordings for an immersive format requires new ideas and approaches. Wilfried and his team have been experimenting, and he observes that “different microphone techniques are being used. Some are a combination of traditional techniques, but the latest research is delivering new methods that have more natural 3D sound while having, at the same time, better backward compatibility to standard surround sound formats. The addition of the third dimension is about microphone techniques. It’s a very exciting new chapter in the evolution of sound recording and reproduction. But the addition of a new dimension is not just about a few extra microphones or channels, as many new things have to be learned. There is not just one technique that covers all, so it depends on what you want to record. This was similar with surround sound recordings of which many hundreds of pages were written about how to record good native surround sound, some of them about maximum downmix to stereo capabilities. Similar things are now happening with the Auro-3D format where many universities and specialists on a worldwide scale are doing research, some of them in close cooperation with us." Many of these new techniques are finding their way to new sound effects and ambience libraries that are being made by companies such as Tonsturm, with others following soon.

Marti shares Wilfried’s view of the creative possibilities. “I love it. Clients love it. I think you will see that there is so much potential and possibilities in the technology. It’s like when 5.1 came out and everyone was putting stuff in the left surround speaker or the right surround speaker. We try to complement the storytelling by putting people in the environments, hyperrealism or realistic or unique situations and tell the story. Can you take people out of the story with it? Sure, but it’s a subjective medium and you can do just about anything you want. But I think what we and our clients find is that you appreciate the little subtleties that make up the difference. When you need to reach out to the audience with something unique, the tools are there. I just think it’s a natural extension. We have 2K and 4K video in the DCPs in theaters and sound needs to be brought along with it to deliver something that complements what’s going on. Does every movie and TV show need an immersive mix? Absolutely not but the vast majority of them can all be helped by it, and that comes down to the taste of the clients and the mixers. It’s a collaborative effort and we all work together as a group to come up with different ideas and try different things and it brings me back to the early days of mixing, where it was just mixing, where it was just so much fun and exciting creating a soundtrack. It’s that excitement, that enthusiasm, that fun, that allows you to do something different and, at the same time, really take it to the next level and complement what the producer, directors, and editors are looking for.”
The Value of Mentorship: Part One

The subject of mentorship is one that is very dear to my heart. In this craft, it may be seen as something that is absolutely imperative in order to achieve success, though I can think of many examples of immense success with the absence of mentorship. This industry is full of dreamers both above and below the line. Many examples of successful actors and writers I’ve met along the way always seemed to include someone “backing” them—so to speak. Before the money or the glamour came to them, they had these specific people, not only behind them, but also helping them achieve this success. And once they did succeed, those supporters seemed to have assessed it correctly and knew that this success would indeed occur. Oftentimes, these supporters are mentors: People who decide to take someone under their proverbial “wing” while the someone is still new to a craft or a skill set.

But what else is a mentor besides someone who just has someone’s back? A teacher. But not just any teacher—the best kind of teacher there is. A teacher who concentrates their efforts on few, if not just one, protégé. Sometimes, these scenarios can come about by chance, and sometimes they are very deliberately orchestrated. I always admire these teachers even more when I hear that they intentionally took on the task of mentoring someone. Also immensely admirable is when they find it extremely important to teach someone the proper ropes. These mentors are often experts in their field at the highest levels. This makes what they are teaching so potently valuable that it’s a challenge to even put it into words.

One of my first mentors, Dave Schaaf, CAS, sure had his hands full—teaching someone from scratch. It was 1998 and I had just graduated high school but I had never been on a real movie set before. Luckily, I did know how to wrap an XLR cable! With that one-and-only skill at my disposal, the only thing left for me to do was listen. An interesting and ironic quality of learning about production sound is only about half (if that) of what you’re learning about has anything to do with sound. The rest is set etiquette, camera lingo, assistant director lingo, timing, pacing, and, most importantly, the interfacing with personalities and archetypes.

My memory goes back to the prep day just before the aforementioned first day on a real film set. Dave was teaching me about each piece of gear he was setting up on his sound cart. Over the course of the day, several other crew members were coming and going by the stage door where we were prepping. He would point out people and explain their jobs to me. Everyone from Teamsters and swing gang, ADs and PAs, producers walking around discussing things with the DP and, of course, the camera department (our truck roomies). All of my perceptions through the looking glass of the 18-year-old sound trainee remain the same today. We all become our craft. The archetypes I saw on this day are unchanged. Why was this so important? These are the people we work with and come to know so well. These are our collaborators. So many people making one piece of art. How does it even get done? Because all of these mentioned archetypes are their craft and care about their contribution immensely. I loved getting to know this eclectic bunch. Throughout the movie, Dave, naturally, taught me about the important technical aspects of sound as well as providing some of my first boom training.

Dave taught me my first lesson in the importance of the amazing craftspersons and human beings that are our collaborators.

My first “Fraturday” (a Friday-night shoot that invades the weekend by completing itself on Saturday morning) was on this movie with him (which was much easier to do as an 18 year old!). Dave taught me something even more special than he probably realizes. Without even trying, and just by exposing me to it, Dave taught me my first lesson in the importance of the amazing craftspersons and human beings that are our collaborators.
My next mentor, David Barr-Yaffe, CAS, had the difficult task of attempting to kick my career into high gear. It was time to get serious and learn the ropes of real Hollywood. It was 2001, and I was fresh out of college. He couldn’t have been armed with a better boom operator to collaborate with him on my real Hollywood training. With Kevin Hyde and Dave Yaffe, I learned what it is to truly be a production sound professional in the real world. They both taught me what’s important in what we’re acquiring and the importance of how we operate as a team. It’s all about becoming a well-oiled machine that operates with speed and efficiency, while always maintaining high quality. How do you achieve this? One: Be better at your job. (Duh! But when you’re green, you don’t see yourself being on the “better end” of the spectrum). This is an important and obvious time to start building your confidence—or else you’ll get eaten alive. Two: Focus on what’s really important. Kevin was reading over his sides (mini-script pages of the day’s work) one morning and I sat by him and we chatted. From the wise perspective of a microphone boom operator, he said, “All I care about are the words.” These words sunk deep into my mind because, while it may seem obvious to some that while we are capturing many elements of sound during production, the dialogue is the most important. As someone who was very green, that switch in trajectory for me was very important. One can get very “hung-up” on other aspects of sound. And while those are also important, as a professional production sound team, you are there to capture the actors’ dialogue and that element of the job is what is most important to the producers. Seems simple but my film school training hadn’t worn off yet and, to me, sound was about all of the elements. This little talk made me realize what I was now being paid to do—and paid to do well. Dave continues to teach me things to this day. And, while both of my mentors’ first names are the same, their distinctions are aplenty and I value everything they both have taught me.

I would like to talk about a mentor/protégé relationship that I admire very much. Mark Ulano, CAS and Chris Howland, CAS have the model scenario that I have had the pleasure of examining during this installment. Their bond, Mark’s attention to teaching, Chris’ successes, Mark’s credibility, and their continued dialogue and learning help me to truly have the ability to emphasize what mentorship is all about. When asking Mark Ulano’s opinion of mentorship, he replied, “I feel it’s an obligation of a successful career, and as a matter of course, that you ‘pay it forward’ if you will. That there is an intrinsic benefit to the community, to you professionally—in terms of having your thoughts organized—and to get the tribal impulse of sharing, passing on, and bringing up those who are younger than you coming into the same realm. So, I am very strongly in favor of mentorship as a philosophical position and as a policy position.” Before I knew Mark’s point of view specifically, I asked Chris Howland if he knew whether a mentorship scenario like this one happened by chance, or if it was delib-
“I feel it’s an obligation of a successful career, and as a matter of course, that you ‘pay it forward’ if you will. That there is an intrinsic benefit to the community, to you professionally—in terms of having your thoughts organized—and to get the tribal impulse of sharing, passing on, and bringing up those who are younger than you coming into the same realm. So, I am very strongly in favor of mentorship as a philosophical position and as a policy position.”

—Mark Ulano, CAS

erate. As was just stated, Mark is definitely the type of person and professional who strongly favors taking somebody under his wing. “He is always open to mentoring people and answering questions. I was one of those people that would just never go away! I just kept coming back.” Yes, exactly! The beauty of this arrangement is that there is no way that mentorship would work without equal effort and determination from both the mentor and the protégé. If someone new to their trade happened to be lucky enough to meet a competent and willing mentor, they better be someone new to their trade happened to be lucky enough to meet a competent and willing mentor, they better be

Chris had his work cut out for him. He was wise to the fact that, in this world, the challenges and roadblocks that are placed in front of college students who need to make themselves ready and competent for the job market are arduous, at best. Any foot in the door that you find, you need to know that it’s a rarity and run with it. “I talked to a number of different colleges/universities and finally wound up at Cal State Northridge. And because the shooting schedule of Big Momma’s House 2 overlapped their summer term by two weeks, I was allowed to sign up for that internship course. It took a lot of persuasion just to get in the door. Because, even though on paper I could do it, getting the attention of the professor was hard because there was a hundred people trying to get her attention at the same time. I traded emails with her, I called her, I drove to her office. There was an orientation for the internship course, and I got the same flat-out answer every time: ‘You can sign up for it, but we may not have an opportunity for you.’ And I would have to tell them over and over that I have an opportunity that I can pursue, but I need to be enrolled in this class in order to take it!’ Finally, when all of the dust settled into that arrangement, Chris was able to start working with Mark on the movie.

Much of the project was filmed in New Orleans, where they shared a two-bedroom apartment. This is another ideal scenario that can induce and encourage additional learning opportunities between a mentor and protégé. “I could take my spiral notebook full of notes and, while he cooked a gourmet meal, I could sit and ask him questions or just talk. It was perfect. And then when we were done eating the great meal that he would make, he would say, ‘Hey, if you’re going to be in the movie business, you need to know about this movie.’ And we would sit and watch Dr. Strangelove. He showed me all these really great movies by Alfred Hitchcock, among others, that I had never seen, or had never properly appreciated before.” These mentoring sessions must have been incredible, to say the least. For Chris, having this wealth of knowledge and experience right in front of him. And for Mark, the continued learning through teaching. “We embarked on a film in New Orleans and, frankly, it was a very good learning journey for him. Plus, I always learn when I am teaching. So the value, from my point of view, is that the kind of work we do, which is not well-described or written about instructionally but is really an apprenticeship kind of experience, is that there is a greater value in witnessing the work in close quarters with people who are seasoned in the work, as this is the most efficient way of teaching that process.”
Maybe it’s because I happened to be hungry both times I was told the story of these New Orleans mentorship sessions, but I couldn’t help but be intrigued by what Mark was cooking for them. I can almost smell and hear the sauté sizzle. “I could kind of guess it was somewhere in, probably, the Mediterranean/Italian realm or Asian realm. Those are sort of home-base cooking areas for me. That’s kind of a touchstone for staying grounded when I’m on location. We’re migrant film workers. We’re uprooted constantly to a new circumstance, new environment, a new community of people for each project, so anything that can give you center on that. You’re away from your family, so cooking is one of those things. Breaking bread with people is a very primal, almost tribal way to break through the barriers and make an emotional connection. And in teaching, that’s a good thing. It builds trust.” Amazing what you can learn that has nothing to do with sound. It’s a great starting point for learning about sound because, while our craft encompasses many elements that can be seen as very universal, it possesses many more unique qualities. Mark wisely told me, “Every shot is handmade. I say that often because it’s the only way to truly describe that you come with all the tools, but you don’t know what truly is going to be in play until you get there. We’re like session players, you know? We sight read the charts. We come in bulletproof ready to, you know, downbeat on one, let’s go, no rehearsal! To be able to do that, you have to have a fairly large experience repertoire of solutions so that you can interpret probabilities through context. And this is the hardest thing to teach and the most important thing to mentor because it requires a global view.”

“The minute you stop being a student is the minute that you are in decline.”

—Mark Ulano, CAS

But who are Mark’s mentors? Among many, including his father and faculty members from high school and college, is Chris Newman, whom he met while attending the School of Visual Arts in New York. Words from Chris Howland were made all the more familiar when also stated by Mark from his younger days. “Chris Newman was my senior film advisor at school. (During) my early gigs, I would call him, insanely panicked on a Saturday night or a Sunday. He would calmly say, ‘Here’s the approach. Here’s what you need to figure out. Here’s some things to ask yourself about the situation.’ In terms of sound, he would be my next very serious and substantial mentor, and I’m enormously grateful for his generosity. We continue to have a relationship to this day that is very valuable to me. My main instrument has been as a sound mixer in feature films, and those guys really kept me on track by not forcing their philosophies down my throat, but by constantly nurturing my own passion to be the driving force of staying a student. The real key of a mentor is to get ingrained in who they are mentoring, to be perpetual students. You never stop practicing as a musician and you never stop learning as a filmmaker. The minute you stop being a student is the minute that you are in decline.”

I feel graciously mentored by interviewing these two gentlemen. Since I’m ambiguously fascinated by the subject of mentorship, and enjoy the continuation of learning, I would like to revisit the topic. If you are a mentor and have a protégé, or are a protégé and have a mentor you would like profiled, please email CASQuarterly@CinemaAudioSociety.org and I can reach out to you for an interview. I find this to be an important aspect of our field that should be continuously developed and nurtured. Mark’s words ring so true to me. There is indeed a primal need to pass our accumulated knowledge down to lesser experienced practitioners. It comes down to survival as a species. How do we want our line of knowledge to be both remembered and utilized? It is extremely imperative to encourage and empower the blossoming of our young talent in production sound, post-production sound, filmmaking, and beyond.”
I learned to write nonfiction the way many of us learned to mix. I submitted a few local magazine articles as a newbie—the way some of us recorded student or no-budget films—but I was clueless. Then an experienced pro offered to teach me the basics. He assigned two or three pieces a week, read through each, and told me how each could be clearer or more interesting. He used these examples to teach me techniques ... and writers’ tricks.

That was half my education. The other half took decades of creating articles, ads, product manuals, even speeches. I analyzed writers I admired, and borrowed shamelessly from them. I made lots of mistakes, tried not to make the same ones twice, and eventually found a groove.

Writing is like mixing or any other craft: it requires talent and knowledge, honed by experience. Talent is up to you. Here’s some of the knowledge:

Rule 1: You owe the reader.
Someone’s investing time to read your words. Their payoff has to be knowledge they can use. Advertisers do this by writing about benefits, along with the facts and features. You can emulate them: don’t just quote the inverse square law when talking about mic placement; say how it will give them a cleaner track, less echo ... and a better movie.

Considering the reader’s needs can inspire you. When I wrote docs for Telos’ remote ISDN mixer/codec, I actually did three manuals: a thick technical reference for the chief engineer; an illustrated 20-page “How Do I Do This?” for operators; and a laminated cheat sheet for everyone at the remote. It cost a little more to produce than a traditional manual ... but meant fewer frustrated customers, and saved money on support calls.

Rule 2: Know where you’re going.
Decide what the piece is about, and roughly how you’ll get there, before you write a word. You don’t need extreme details: a simple list of concepts can suffice, with a few notes about how you’ll explain each. Jot these down on the page. Shuffle them around until there’s a logical flow. Then start replacing these fragments with usable text.

Word processors are wonderful things. You can replace some notes with text, while you’re still tweaking others to add new ideas or explanations. Keep saving incremental backups or with new filenames as you go along: you never know when a rejected idea might be useful elsewhere.

Rule 3: Get a good start.
I consider the lead the most important part of an article. Those introductory paragraphs are like the first 10 minutes of a movie, where you have to hook the viewer and convince them to stay with the whole film. An effective lead* puts the reader on your side, setting the tone for everything else on the page, and can even suggest a complementary idea for the final paragraphs.

Borrow a tip from songwriter Paul Simon, who often starts lyrics with incidents from his real or imagined life. That way, he once said, the listener can’t disagree. Isaac Asimov did this brilliantly in 30 years of nonfiction essays for The Magazine of Fantasy & Science Fiction. Each starts with a personal anecdote—Asimov was a funny man—inevitably leading to that month’s physics, chemistry, or biology lesson. The essays, reprinted in Asimov on Science and other books, are an education in both science and how to write about it.

Rule 4: Write for the ear.
We work in sound, so this should be easy. Listen to what you’ve written. Read it as dialog. Each sentence’s flow should be immediately obvious. If your text is hard to read aloud, it’ll be even harder for readers to digest in silence. Stresses should fall naturally and rhythms should be pleasing to the ear. Shorter words and phrases help, so look for places where one syllable can replace two or three. Avoid using the same words over and over, particularly in the same sentence. That can sound boring.

Rule 5: Write for the eye.
We work in sound, but we can’t ignore the image. A page of solid text looks gray and discourages the reader. Provide eye candy. Let graphics help get your point across, by choosing ones that communicate important concepts. Refer to them in the text, and add helpful callouts and captions. Visual analogies are particularly effective when describing sound to non-technical audiences; the figures on the next page show some I used in a recent book about digital audio. If you can’t find appropriate illustrations, break up the page with subheads, sidebars, or lists.

* You might see it spelled lede. That’s a newspaper tradition to distinguish it from lead, the gray metal slugs that provide space between lines of type.
Rule 6: Write for a friend.
No matter how many people see your article, it’s being read by only one at a time. Unless a medium absolutely demands formality, stay conversational. You can even have a sense of humor. Write like you’re talking to an intelligent friend who just hasn’t been exposed to this material.

Rule 7: Make your own rules.
My late wife Carla—who wrote 32 computer books in her career, plus an award-winning magazine column—could lean back, close her eyes, then sit up, and type a completed page. She never had to revise. I was jealous, until I realized she was back, close her eyes, then sit up, and type a completed page.

The point is, my rules work for me. Yours might be different. So start writing.

Look for trouble
Some words raise red flags. Here are a few to let you know where some editing might be needed:

That: Often unnecessary. If you notice [that] you’ve used it, see if the sentence makes sense without it.

Simply: Rarely needed, since text shouldn’t ever be more complicated than a subject requires. Besides, it may suggest you think the readers are simple.

Very: Usually a sign of laziness. Kill it and the adjective that follows, and use a stronger word instead.

But: Opposes what went before, which can be handy for comparisons. But don’t start two consecutive clauses (or sentences or paragraphs) with but: the reader won’t know which ones are being negated.

Allows/enables you to: Does anybody actually talk like this? Replace it with lets you.

In order to: Replace with a simple to.

There are plenty more; do a Web search for words to avoid in feature writing.

Digital audio hides its mistakes
If one of our analog cat pictures got scratched before its copy was made, we’d be stuck with the scratch in every subsequent copy . . . but we’d still recognize our furry friend. If that copy got scratched, its copy would be even worse. Digital audio handles data loss differently:

- Small data errors are reconstructed perfectly. The system uses checking digits to find out what the missing data should have been, and recreates it. If the scratch was a minor data error on a picture file, a copy of the file would be scratchless!
- Medium data errors can be hidden. The checking digits let the system know that something is missing, but it doesn’t have enough data to make a perfect reproduction. Instead, media players guess the missing data by interpolating from numbers they know are good. In almost every case, the repair is transparent.
- If a big scratch represented so much damage to the data file that it couldn’t be reconstructed, the system could blur over it instead. Details would be missing, but it’s unlikely we’d notice the scratch.

This error-concealment process is used in real-time media like audio CDs, DVDs, and HD radio. Computer media, including hard drives and files on CD- or DVD-ROM, and Internet packet transmissions, often skip the concealment; if the system can’t recreate the data perfectly, it trims again. If the data is completely lost, it tells the user.

In an analog system, even slight problems cause noise or distortion. But humans are very good at guessing what should have been there, and noisy or distorted signals may still be recognizable. In a digital system, the small problems go away, but the big ones can be catastrophic. Figure 2.3 shows this difference with our cat picture.

Those catastrophic failures may be rare, but they do happen. As with any other data, it’s just common sense to make backup copies of any video or audio material you might ever want to keep.
From snow-capped peaks to tropical jungles, inside packed sports arenas or on a production set, Sound Devices family of portable and rackmount multichannel digital recorders and field mixers offer the performance and reliability necessary to deliver the highest quality audio for the most demanding workflows.
With the crab season ending, Bob Bronow CAS is mixing episodes of *Alaska Off-Road Warriors* and Season 8 of *Ax Men*.

Aron Siegel CAS and crew of boom op Allen William and sound utility Chris Mills finished 2014 with VH-1’s Season 1 of *Hindsight* with directors Michael Trim, Jonathan Frakes, and Roger Kumble. Earlier, the crew completed Season 1 of MTV’s *Finding Carter* and the pilot for FOX TV’s *Red Band Society*, directed by Alfonso Gómez-Rejon, starring Octavia Spencer and Griffin Dunne. *Red Band* was just the right follow-up to the feature film, Stephen King’s *Cell*, starring Samuel L. Jackson and John Cusack which started their year. Aron and crew start 2015 with Season 2 of MTV’s *Finding Carter*, executive produced by Jennifer Lynch.

Dick Hansen CAS production mixed *Trumbo*, the true story of a blacklisted Hollywood screenwriter. Dalton Trumbo won two Oscars while blacklisted using assumed names. Dalton Trumbo was played by Bryan Cranston. The film was directed by Jay Roach. Betsy Lindell boomed and Lenny Suwalski worked as utility. The next day after wrapping *Trumbo*, Dick went on to *Kidnap* with Halle Berry as the lead. He used Lenny Suwalski on boom and Chase Arceneaux as utility. Lenny and Dick finished the year filming *Joe Dirt 2*, starring David Spade, where Alessandro Chimento joined the team as utility.

Steve Guercio CAS was in Alberta, Canada, at Lake Louise Ski Resort mixing on a documentary called *Lindsey Vonn: The Climb*. The one-hour documentary produced by Red Bull Media House, in association with NFL Films and NBC Olympics, captures the comeback of this amazing Olympic downhill skier after two traumatic knee injuries. Directed by Steve Trout, *Lindsey Vonn: The Climb* aired in January 2015 on NBC. From there, Steve traveled to Arizona to work on Super Bowl XLIX, mixing for NFL Films.

It’s been a busy year for Todd Grace CAS and Ed Carr CAS who are busy at WB’s Dub 2 completing the seventh and final season of *The Mentalist*, the second season of Fox’s *Sleepy Hollow*, the fifth season of Showtime’s *Shameless*, and the first season of the NBC comedy *A to Z*. But wait, there’s more to come … oh boy …

Gary D. Rogers CAS and Dan Hiland CAS started mixing AMC’s second season of *TURN*, also finishing the fifth season of AMC’s *The Walking Dead*, third season of

Ron Bochar CAS finished up 2014 mixing A Walk in the Woods and Sleeping with Other People. Both features are heading to Sundance. Ron is also mixing with Tom Fleischman CAS on Mortdecai. Three very fun grown-up comedies.

Dave Schaaf CAS has been working on some national spots for auto makers Honda, Jeep, and Kia. At least one of them is expected to air during the Super Bowl.

The last five months have been busy for James Ridgely CAS with three back-to-back features—one being reunited with actor John Savage—always a pleasure. All with trusty and foxy boom op, Rie Nasu. He worked on Key and Peele for Funny or Die. They are truly hilarious. He mixed pilot Ambush Survivor for Ugly Brother. Finally, he mixed a few Hyundai industrials here in Los Angeles and also in Las Vegas. In his downtime, James is editing his second documentary. This one is about his travels in Armenia. Let him know if you want to see it: the rough cut is 3½ hours long. Hahaha. Seriously.

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stages at Universal are pre-booked for 2015! They can only hope the rumor is not only true there, but on other studio lots as well.

**Steve Weiss** CAS wrapped Season 3 of TNT’s *Major Crimes* with Vince Shelley on boom and Dennis Carlin handling utility. They look forward to shooting the first season of *Tribeca*, starring Steve Carell and Rashida Jones, followed by Season 4 of *Major Crimes*. Here is hoping that everyone works as much as they wish to in the new year.

**Greg Watkins** CAS and **Tom Marks** CAS have been busy at Warner Bros. working on *The Whispers* and *Forever* for ABC and *Episodes* for Showtime.

**Philip Perkins** CAS is currently mixing the doc features *Ghost Town to Havana, Theory of Obscurity*, and *Laetitia Sonami: The Ear Goes to the Sound* (PBS). He has also been on location mixing a new untitled doc project by Matt Ogens and has continued location work on the documentary feature *Do Not Track*. He also did some days on Peter Bratt’s *The Dolores Huerta Project*.

**Mike Draghi** CAS is at Westwind mixing *Marvel’s Avengers Assemble* for Disney DXD.

**Steven Grothe** CAS is back mixing Season 2 of *Brooklyn Nine-Nine*. On boom this year is Chris Tiffany. Keeping the department in line and out of trouble is Kim Podzimek on utility.

After completing *Edge of Alaska* for Discovery with Steve Urban as well as a few indie docs and webisode series, **Karol Urban** CAS enjoyed the holiday with family, friends, and colleagues and in the process has learned a recent mix of hers and Steve Urban, *Misery Loves Company*, has been accepted to Sundance. She is now back to work on the second half of Season 11’s *Grey’s Anatomy*. 

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**CAS QUARTERLY WINTER 2015 53**
IATSE mixers Jonathan Lallouz, Daniel S. McCoy, CAS, and Akash Singh on the Universal backlot mixing the pilot Single Town for NBC.

The family of Gerald Beg, CAS shops for a Christmas tree.

From left to right: Boom operator Richard Bullock, sound mixer Pud Cusack, CAS, and utility Chris Welcker working on location in New Orleans on the feature film Geostorm for Warner Bros.

Danny Michael, CAS and Judy Michael welcome new granddaughter Rae Samantha. She was born Dec. 15, 2014, and is joined by older brother Bryce, who is introducing her to Sesame Street characters.

Norman Bernard (boom op) is dedicated to his craft...

The Tonguedolly Exercises
Illustrated by Rebecca Worts
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