Dear NWMOA Members,

I hope the winter has treated everyone well. Hopefully the snow will melt soon.

I would like to thank everyone who voted for board members and those who were up for election last fall. We are happy to welcome Dan Hugaboom to the board, and congratulations to Nathan Kutil for being reelected to the board after filling in for Chris Allen. Also, congratulations to Sue Lawrence and Chad Busch for being reelected to the board. We were sad to see one of the founders of NWMOA resign from the board in December. Tom Seacord served the board admirably since the inception of NWMOA. If you see him, thank him for his service. The board selected Scott Buecker of AE2S to finish out Tom’s term. I would like to thank Jordi Figueras for his service on the board for the past few years as well. Both Tom and Jordi helped make NWMOA what it is today.

It is an honor and privilege to serve another year as your President. It is my hope to continue to help bring the members high quality workshops and Membrane Operator Courses (MOCs) this year. I hope to continue to add to our already strong membership numbers. The board members welcome input from members of what and where workshops can be. I have heard from a couple members seeking more information about what we do, and I am happy to have a dialogue with any member that has questions or has input.

This year we plan on offering two one-day workshops (Ogden, UT and Bend, OR) and 3 MOC schools (Fruitland, ID, Rapid City, SD, and TBD, WA) which are 3 days long. We are also bringing an AMTA/NWMOA/WEF workshop to Vancouver in July. We have had a good collaboration with AMTA and WEF in preparing this workshop and it should be a very good opportunity to receive CEUs and network with other operators. Later in the newsletter there is an overview of what will be covered in the Vancouver workshop. I hope as many of you as possible will be able to attend it.

NWMOA has been working with the other AMTA affiliates to bring all of the MOC courses to our memberships in a collaborative effort to provide high quality training to operators.

Looking forward to 2017, NWMOA will be hosting a joint workshop with AMTA in Bozeman, MT. This is a shameless plug to get it on everyone’s radar for 2017 to come see the City of Bozeman’s 22 MGD Water Treatment Plant, enjoy the scenery here, and drink some of our high quality beer.

The plant of the year and operator of the year awards nominations are open. We will be presenting the awards a little bit earlier this year so they can be presented in Vancouver.

Again, it is a pleasure to serve another term as President of NWMOA. If members have concerns, questions, or workshop ideas; please bring them to the board’s attention and we will address it. The members are what makes this organization and the board is here to serve its members.

Thanks.

Jill M. Miller, NWMOA President
The Awards Committee is pleased to announce that applications are now being accepted for consideration for "Plant of the Year" and "Operator of the Year"!

As the membrane industry grows in the northwest, NWMOA believes it is important to publicly recognize and award the contributions made to the membrane community by the industry and operators. Award recipients are highly regarded individuals and organizations that demonstrate an outstanding commitment and involvement in the membrane community, as well as proven continuous excellent performance.

If you would like to nominate one of your peers for the award this year, please fill out the application available at www.nwmoa.com/awards or, click on the images below. The deadline to submit applications is May 30, 2016, and the winners will be announced July 12th at the AMTA/NWMOA/WEF Technology Transfer Workshop, "Membranes Impact the Pacific Northwest: Water, Wastewater, and Reuse Technologies and Applications" in Vancouver, WA. Award winners will compete for the AMTA/AWWA plant and operator of the year at the Membrane Technology Conference.

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**2015 Award Winners**

**By: Jan Wellman, City of Cottage Grove**

The Outstanding Plant and Operator awards for 2015 were presented to the following large and small plants and individual:

**Large Plant** – City of Bozeman Water Treatment Plant, Bozeman, Montana

**Small Plant** – Oxbow Wastewater Treatment Plant, Shelley, Idaho

**2015 Outstanding Operator Award** – Andrew Albee, South Umpqua Water Treatment Plant, Myrtle Creek, Oregon

Congratulations to all the membrane treatment plant staff that work very hard to make these awards possible.

It is never too early to submit nominations for the membrane plant of the year and the membrane operator of the year for the Northwest Membrane Operator Association. If you are aware of an exceptional plant or operator, please send in the nomination as soon as possible. Even though NWMOA will not be holding an annual conference this year, we will still recognize a large and small plant of the year and an operator of the year.

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**2015 Outstanding Large Membrane Plant**

City of Bozeman Water Treatment Plant
Bozeman, Montana

**2015 Outstanding Small Membrane Plant**

Oxbow Wastewater Treatment Plant
Eastern Idaho Regional Wastewater Treatment Authority
Shelley, Idaho

**2015 Outstanding Operator**

Andrew Albee, South Umpqua WTP
Myrtle Creek, Oregon

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**2016 Call for Award Nominations**

**By: Nathan D. Kutil, HDR Engineering, Inc.**

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**Operator Award Criteria**

**Outstanding Operator Award**

**Plant Award Criteria**

**Outstanding Plant Award**

**Online Nomination Form**
Membrane clogging, which can occur in both flat sheet and hollow fiber MBR systems, is the accumulation of solids in the membrane channels and/or blocking the entrance to the membrane channels. It’s possible that clogging is a more significant problem in MBR systems than membrane fouling, and it’s certainly more of a headache.

Clogging is similar to fouling in that it decreases membrane permeability, but it differs in the methods needed for removal. Fouling is generally removed effectively through in-situ chemical cleaning, but clogging requires mechanical cleaning, typically done by removing the membrane modules from the tank and wiping or gently hosing off the solids from the membranes.

Ragging, in which fibrous material such as hair and bathroom tissue get tangled together in long “rags”, blocks the entrances to the membrane channels. Ragging is best avoided by strict pre-screening of the influent. Screen bypass is a major cause of clogging and other failure in an MBR plant, so it is very important to make sure the influent screen receives routine maintenance and is working properly.

Sludging, or localized dewatering, typically only occurs in just a few areas within the membrane units, and rarely occurs in every membrane tank in the plant. Sludging is the filling of solids within the membrane channels, which severely reduces membrane permeability. Membrane sludging is usually caused by local areas of high flux.

In order to minimize the likelihood of sludging, it is important that adequate air scour is maintained in the membrane tanks. One easy way to check for acceptable membrane air scour is by observing the water surface of the membrane tanks to see if the aeration pattern looks uniform. Additionally, during storm events where flux rates will be significantly increased, you may consider increasing the airflow to the membrane units. Be wary, though; higher airflow will cause more wear and tear on the membranes and therefore reduce the life of the membrane, so be sure to keep air scour rates within the range recommended by your membrane manufacturer.
Membrane Operator Certification (MOC) Short School

By: Jill M. Miller, City of Bozeman WTP

The Membrane Operator Certification (MOC) short schools consist of four different courses. MOC-I is an introduction to membranes, MOC-II focuses on Reverse Osmosis, MOC-III is on low pressure membranes, and MOC-IV covers MBRs. These three day courses were developed by SEDA, SCMA, SWMOA, and NWMOA to provide operators with high quality membrane training with a tighter focus and more information than 1 day workshops. The courses bring together highly qualified speakers from the region to present the course materials. The MOCs will provide employers more bang for their buck when it comes to training, and get their operators better trained in the operation of membrane plants.

While the three day training is a very good way to get CEUs, there is also a certification test at the end of the training. Some states are starting to require this certification for membrane operators and some utilities require it for promotions and raises. The training provided during the MOC-I course provides new operators or those getting into membranes a solid background knowledge of the basics of membranes. NWMOA is offering this course in early June and will be advertising it soon. The low pressure membrane MOC-III course will be given two times this year, in Rapid City and in Washington in the Fall 2016.

NWMOA Newsletter Advertising Space Available!

Please contact publications@nwmoa.com for more information.

Myrtle Creek Workshop Recap

By: Jan Wellman, City of Cottage Grove

On Thursday, October 1, 2015, the Northwest Membrane Operator Association sponsored a workshop in Myrtle Creek, Oregon entitled “Membrane Plant O&M: On-Going Maintenance”. The workshop was attended by 30 membrane plant operators and manufacturer’s representatives serving the southern Oregon area. The workshop included a tour of Myrtle Creek’s water membrane facilities. Morning session topics covered SCADA remote access, the use of activated carbon, and advanced MF/UF membrane basics. There was also a presentation by the Oregon Health Authority, Drinking Water Program covering harmful algae blooms and LT2 Sampling. Other sessions included water quality instrumentation, pretreatment chemicals for membrane systems, MF/UF direct retrofit for end of life membrane module replacement, and infiltration gallery design and construction.

Thanks to the City of Myrtle Creek and the Myrtle Creek Fire Department for hosting the workshop. Also, a big thank you to the workshop sponsors, AECOM, RH2 Engineering, Pall Corporation, and Scinor Water America.

Special Thanks to our Sponsors!

Major Sponsor: AECOM
Host Facility: Myrtle Creek WTP
Lunch Sponsors: PALL Water Processing, RH2 Engineering
Break: Scinor Pen: Avista Energy

The Northwest Membrane Operator Association has scheduled a workshop for August 30, 2016 in Ogden, Utah.

More to come soon as the workshop chair finalizes the event.

Please check the NWMOA event calendar for more information regarding this workshop. Once registration is available it will be posted on the NWMOA event calendar at: [http://www.nwmoa.com/calendar-of-events/](http://www.nwmoa.com/calendar-of-events/) and an announcement message will be emailed to NWMOA contacts.

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The AMTA/NWMOA/WEF Workshop in Vancouver, WA will be held July 12-14th. This is a collaborative effort between all three organizations to bring an interesting and useful membrane focused workshop to the Northwest. In this workshop, we will cover membrane use in reuse, MBR, and MF/UF membrane applications. There will be a tour of the North Clackamas Water Treatment Plant and the La Center Wastewater Plant in the afternoon of the first day followed by a networking event at the Loowit Brewery. The second day of the workshop will have two tracks, one on MBR and one on MF/UF applications. The day will be concluded with presentations on new technologies and trends in MBR and MF/UF, and an operator roundtable discussion about overcoming startup challenges among other topics. We still need a couple of MBR operators to sit on the operator roundtable to share their experiences.

We hope that you will attend this workshop and gain knowledge to take home to your plants and companies. As with workshops like this, the networking opportunities abound. We also still have space available for interested exhibitors. I hope to see as many of you as possible at this workshop and at our other workshops throughout the year.

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The next Northwest Membrane Operator Association sponsored workshop in Oregon is tentatively scheduled for late September or early October, 2016 in Bend Oregon. Bend just installed a new 20 mgd Pall Membrane Plant and we are hoping to highlight the plant, along with presentations concerning the permitting and construction challenges associated with the plant. This workshop is in the early planning stages and more information will be forthcoming over the next couple of months.

Please check the NWMOA event calendar for more information regarding this workshop. Once registration is available it will be posted on the NWMOA event calendar at: [http://www.nwmoa.com/calendar-of-events/](http://www.nwmoa.com/calendar-of-events/) and an announcement message will be emailed to NWMOA contacts.
NWMOA Is Proud to Welcome 9 New Members!

Greg Miller  
*Springfield Utility Board*

Ray Armstrong  
*DOWL*

Steve Bethke  
*City of Cave Junction*

Stephan A. Bradley  
*DOWL*

William Flanagan  
*isi WEST*

Zach Johnson  
*City of Arlington Water Reclamation Facility*

Chase Nelson  
*DOWL*

Jake Rudolph  
*Park City Municipal Corporation, Water Department*

Michael Rutkowski  
*City of Bozeman*

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Visit us online!  
Go to the [Members Only](http://www.nwmoa.com) page, sign in and find all the great benefits you will receive with being a member of the Northwest Membrane Operator Association (NWMOA) at: [www.nwmoa.com](http://www.nwmoa.com)

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**Upcoming Events**

**JUNE 7-9, 2016**  
Membrane Operator Certification Short School  
*Introduction to Membrane Systems (MOC-I)*  
City of Fruitland  
Fruitland, ID

**JULY 12-14, 2016**  
AMTA/NWMOA/WEF  
Joint Technology Transfer Workshop  
Hilton Hotel  
Vancouver, WA

**AUGUST 30, 2016**  
NWMOA Workshop  
Ogden, UT

**SEPTEMBER TBD 2016**  
NWMOA Workshop  
Bend, OR

**FEBRUARY 13-17, 2017**  
AMTA/AWWA 2017 Membrane Technology Conference &Exposition  
Long Beach Convention Center  
Long Beach, CA

**2016 TENTATIVE MOC LOCATIONS:**  
- Rapid City, SD  
- TBD, WA

*We are hoping to be able to do a Membrane Operator Certification Basics Course early in the year and the Membrane Operator Certification Low Pressure Course later in the year at locations TBD.*

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Visit NWMOA online at:  
[www.nwmoa.com](http://www.nwmoa.com)

Here are some quick links:  
- [Board of Directors Page](http://www.nwmoa.com)  
- [Award Winners Page](http://www.nwmoa.com)  
- [Calendar of Events](http://www.nwmoa.com)  
- [Photo Gallery](http://www.nwmoa.com)  
- NWMOA News  
- About NWMOA
# Committee Chairs:

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## NWMOA

**Needs Your Input for the NWMOA News!**

- Your individual contributions are welcomed and appreciated.
- If you would like to take a more active role, become a member of the newsletter committee!
- Contact us at: publications@nwmoa.com to submit articles or for more information on becoming a newsletter committee member.
Northwest Membrane Operators Association (NWMOA) formed March 26, 2012. It is the newest affiliate of the American Membrane Technology Association dedicated to the Northwest United States region including, but not limited to, Alaska, Idaho, Montana, Oregon, Utah, Washington and Wyoming.

NWMOA is a membrane operators group that has been formed to provide membrane operators a forum to exchange information, share experiences and knowledge, obtain training and acquire continuing education credits necessary for Operator Certification requirements.

NWMOA is an organization that is for membrane operators, run by membrane operators and has been established to meet the technical needs of membrane operators. The number of membrane based treatment plants is growing rapidly in the northwest. With that growth there is a need for an organization dedicated to the education, training and networking of people involved in membrane technology. NWMOA is dedicated to filling that need, with our focus on training membrane plant operators.

**EXECUTIVE OFFICERS**

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