

INTERNATIONAL TRAINING PROJECTS (ITP)

MODULAR CLEANING PROGRAM WORKSHOP for the participants of the ITP Projects and OPD staff held by Chris Stavroudis

21 – 25 October 2019, OPD Fortezza da Basso

LEARNING OBJECTIVES

By taking this course conservation students will gain a solid foundation in the theory and practice of formulating aqueous cleaning solutions, solvent gels, polymer-stabilized emulsions, and microemulsions as well as the uses of silicone solvents and silicone gelling agents. Participants will receive information on cleaning and solvent theory through lectures and readings. They will also learn how the Modular Cleaning Program stock solutions and computer database assist in formulating effective cleaning strategies.

During lab time participants will prepare the stock solutions, become proficient with the MCP computer database and learn to use the MCP to fine tune the cleaning of test paintings. After preparing the stock solutions, conservators will prepare a series of aqueous test solutions to arrive at an optimal cleaning system for a test painting (as each painting is different).

Solvent gels will be discussed and demonstrated but will not be prepared in quantity. The use of silicone-based solvents will be discussed and demonstrated. More time will be spent discussing and mixing polymer-based emulsion stabilizers, gelling systems and microemulsions. Of critical importance, the participants will learn about clearance of non-volatile materials and the advantages and disadvantages of using cleaning systems that contain components that do not evaporate.

The aim of the workshop is to provide the participant with the tools to use the Modular Cleaning Program. After the workshop, participants should be comfortable mixing the solutions, working through aqueous and solvent gel test cleanings, and understand how various changes in materials will affect the cleaning solution and how this relates to the chemistry of the surface and cleaning system.

While much of the schedule below is labeled "Lecture", it is intended to be more of a discussion with me doing much of the talking. The schedule can be reorganized to address specific concerns. It is all very flexible.



OPIFICIO DELLE PIETRE DURE

SCUOLA DI ALTA FORMAZIONE E DI STUDIO

Partner of the
International Training
Projects

INFORMATION - CONTACTS

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Altamura classroom
[Lesson \(theory\)](#)

**Easel Painting and Sculpture
restoration lab**
[Lab time \(practice\)](#)

CHRIS STAVROUDIS Graduated from the Winterthur/University of Delaware Program in Art Conservation with a major in paintings conservation in 1983.

Prior he received a bachelor's in science in Chemistry and a Bachelor of Arts in Art History from the University of Arizona in Tucson, Arizona. He apprenticed with a private paintings conservator while studying at the U of A before attending the program in Delaware. He has been developing the Modular Cleaning Program since 2002 and with Tiarna Doherty offered the first MCP Workshop in 2005. He has also been one of the core instructors in the Getty Conservation Institute's workshop "Cleaning Acrylic Painted Surfaces" (CAPS). To date over 2200 people have registered to use the MCP software. Chris has presented the MCP workshop 52 times and co-presented at the CAPS workshop all 10 times it has been offered.

CHRIS STAVROUDIS è un restauratore privato di dipinti che lavora a West Hollywood (Los Angeles), California. Si è laureato nel 1983 nel corso di laurea Winterthur in Conservazione di Opere d'arte alla University of Delaware, specializzandosi nel restauro dei dipinti.

In precedenza, aveva conseguito una laurea in Chimica Bachelor in Science e una laurea in Storia dell'Arte Bachelor of Arts alla University of Arizona.

Durante i suoi studi all'Università dell'Arizona, ha fatto un tirocinio in uno studio privato di restauro dipinti, prima di frequentare il corso di restauro a Delaware.

Chris ha lavorato allo sviluppo del Modular Cleaning Programma a partire dal 2002, e ha tenuto assieme a Tiarna Doherty il primo workshop sul MCP nel 2005.

È stato inoltre uno dei principali docenti nel workshop "Cleaning Acrylic Painted Surfaces" – CAPS - del Getty Conservation Institute, sulla pulitura di superfici dipinte acriliche.

Ad oggi si sono registrate oltre 2200 persone per l'utilizzo del software MCP.

Chris ha presentato il suo workshop MCP ben 52 volte, ed è stato co-docente a tutti e 10 i workshops CAPS sinora presentati.

RECOMMENDED READINGS SUPPLIED AS PDFs

Slottved Kimbriel, C. and Rose, J. 2017. "The Modular Cleaning Program: First Impressions from a Four-day Course and Subsequent Implementations". *The Picture Restorer*, Issue 50, pp.18-26. (A slightly edited-down version of the article appears in *WAAC Newsletter*. 39:2 (2017). pp. 22-28.)

Stavroudis, C., Doherty, T., and Wolbers, R. 2005. "A Novel Approach to Surface Cleaning Using mixtures of concentrated stock solutions and a database to arrive at an optimal cleaning system". *WAAC Newsletter*. 27:2. pp. 17-28. (Nearly identical to the article in *AIC Paintings Specialty Group Postprints*, Vol. 17 (2005))

Stavroudis, C. and Doherty, T. 2007. "A Novel Approach to Cleaning II: Extending the Modular Cleaning Program to Solvent Gels and Free Solvents, Part 1". *WAAC Newsletter*. 29:3. pp. 9-15.

Stavroudis, C. 2009. "Sorting Out Surfactants". *WAAC Newsletter*. 31:1, pp. 18-21.

Stavroudis, C. 2012. "Pemulen Revised: pHuck the pH Meter". *WAAC Newsletter*. 34:2, p. 19.

Various Authors. 2010. "Pemulen" a set of submissions. *WAAC Newsletter*. 32:3, pp. 10-16. Includes: Stavroudis, C. 2012. "Using Pemulen with the MCP". p. 16.

Dorman, N. 2012. "Conference Review: The Cleaning of Acrylic Paint Surfaces 3 London Workshop – A space-time continuum of pH and conductivity". *WAAC Newsletter*. 34:3, pp. 18-23.

Stavroudis, C. 2012. "More from CAPS3: Surfactants, Silicone-based Solvents, and Microemulsions". *WAAC Newsletter*. 34:3, pp. 24-27.

Stavroudis, C. 2006. "Azeotropes from A to Z". *WAAC Newsletter*. 28:2. pp. 14-17.

McGlinchy, C. 2002. Boundaries of the Teas Solubility Concept". *WAAC Newsletter* 24:2. pp. 17-19.

Stavroudis, C. and Alcalá, S. 2018. "Workshop Review: Nano-lime, Emulsions, Gels, and Nanostructured Materials". *WAAC Newsletter*. 40:3, pp. 18-22.

Stavroudis, C, with Ly, J. and Williams, D. 2019. "Solvents and Hansen Space in the MCP; Something New and Useful. *WAAC Newsletter*. 41:2, pp. 19-223

RECOMMENDED VIDEOS TO WATCH BEFORE WORKSHOP

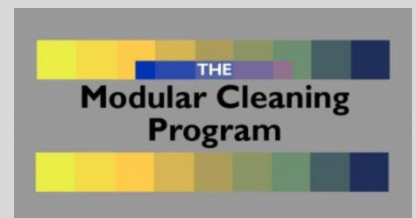
Cleaning of Acrylic Painted Surfaces: 9 videos 46 minutes total. All prepared by The Getty Conservation Institute.

< <http://www.youtube.com/playlist?list=PL5ZJP2yRFa3aNtJ61U-IMiffoGzAhdAC>>

or search YouTube for "Cleaning Acrylic Painted Surfaces"

Calibrating pH and Conductivity Horiba Meters (older models); Calibrating pH and Conductivity Horiba Meters (2018 models); Calibrating Conventional pH Meters; Making Agarose Gel in a Microwave and Preparing an Agarose Plug; Measuring pH and Conductivity with Horiba Meters; Measuring pH and Conductivity Using Water Drop and Agarose Plug Methods; Preparing pH- and Conductivity-Adjusted Water; Making a DOSS/Mineral Spirits Microemulsion; Preparing a Dow Mineral Spirits Microemulsion (with Cosurfactants); Preparing a Silicone Microemulsion; Making a KSG-350z Emulsion; Mixing and Using Velvesil Plus; and Preparing a Pemulen Gel from MCP and Making an Emulsion

WORKSHOP SCHEDULE



MONDAY, 21 OCTOBER 2019

- 9:00 Welcomes and introductions..
- 9:30 **Lecture:** Introduction to the Modular Cleaning Program and general lecture on aqueous chemistry
Discussion
- 11:00 Break
- 11:45 Continue **Lecture:** Introduction
Discussion
- 12:30 **Lunch**
- 1:30 Continue **Lecture:** Complete Introduction.
Discussion
- 3:00 Break
- 3:15 **Lecture:** Aqueous Cleaning with the MCP
Discussion: Clearance Issues in Cleaning with Aqueous Systems
Lab time: Discussion
- Health and Safety in the lab.
 - Review use of pH meters, lab materials.
- Lab time:** Mixing up aqueous stock solutions
- Focus on buffers, setting the pH of a chelator, preparing a surfactant solution.
 - Begin to build the master Concentrated Stock Solutions for participants' test sets.
 - Begin Sodium Deoxycholate surfactant solution.
- 5:00 Discussion: Questions. Compare notes.

TUESDAY, 22 OCTOBER 2019

- 9:00 **Lab time:** Continue mixing solutions.
- 10:30 Break
- 10:45 Lab time: Continue mixing solutions
Discussion
- 12:30 **Lunch**
- 1:30 **Lecture:** Advanced Aqueous Cleaning; Cleaning made more complicated, ionic strength. Surface conductivity and pH measurements.
Discussion: Customizing the MCP; designing special cleaning sets.
Further modifying aqueous cleaning systems.
- "Resin soaps", affinity surfactants and varnish removal
 - Co-solvents, enzymes.
- Lab time:** Measuring pH and conductivity of paint surfaces.
- 3:00 Break
- 3:15 **Lab time:** Continue mixing solutions.
-Begin test surface cleaning of sample paintings.
- 5:00 Discussion: Review of days 1 & 2

WEDNESDAY, 23 OCTOBER 2019

- 9:00 **Lecture:** Solvents and the MCP
Solubility parameters, solvent sets, and MCP interactive graphic display
- 10:30 Break
- 10:45 **Complete Lecture:** Solvents and the MCP
- Azeotropes
- Theory of Carbopol-based gel formulation, dual neutralization calculator amines, and incorporation of new recipes into MCP
- Clearance Issues in Cleaning with Solvent Gels
- 12:30 **Lunch**
- 1:30 Lab Discussion: Discuss hazards of mixing solvent gels. Demonstrate mixing a solvent gel.
Lab time: Begin making solvent gels for kits.
- 3:00 Break
- 3:15 **Lab time:** Continue mixing solvent gels and aqueous solutions.
- 5:00 Discussion: Review of day 3

THURSDAY, 24 OCTOBER 2019

- 9:00 **Lecture:** Bringing oil and water together; Emulsions and Polymeric Emulsion Stabilizers
- 10:30 Break
- 10:45 **Lab Discussion:** demonstrate mixing Pemulen emulsion, problems of measuring pH of Pemulen Gels
Lab Discussion: Xanthan Gum
Lab Discussion: KSG 350Z and similar materials
Lab time: Mix Pemulen and Xanthan Gum stock gels
- 12:30 **Lunch**
- 1:30 **Lecture:** Cleaning Acrylic Painted Surfaces.
- 2:30 Lab Discussion: Microemulsion phase diagrams
Demonstrate mixing silicone and MS microemulsions
Lab time: Continue to mix gels. Begin test clean paintings with solvent gels, polymer-stabilized emulsions and microemulsions
- 3:00 Break
- 3:15 **Lab time:** Continue mixing and test cleaning paintings with solvent gels, polymer-stabilized emulsions and microemulsions.
- 5:00 Discussion: Review of day 4.

FRIDAY, 25 OCTOBER 2019

- 9:00 **Lab time:** Continue mixing and test cleaning paintings with aqueous systems, solvent gels, polymer-stabilized emulsions and microemulsions.
- 10:30 Break
- 10:45 Continue
- 12:30 **Lunch**
- 1:30 Continue with testing and use of MCP
- 3:00 Break
- 3:15 Discussion: Present results of cleaning tests to group.
- 4:00 Divide up MCP components into kits for participants
Clean up studio
- 5:00 FIN