State Water Resources Control Board

January 14, 2015

Los Angeles Regional Water Quality Control Board
Jenny Newman, TMDL Unit Chief
320 West 4th Street, Suite 200
Los Angeles, CA  90013

REQUEST FOR EXTERNAL PEER REVIEW OF A PROPOSED BASIN PLAN AMENDMENT TO ADOPT SITE SPECIFIC OBJECTIVES FOR COPPER AND LEAD AND TO REVISE THE TOTAL MAXIMUM DAILY LOAD FOR METALS IN THE LOS ANGELES RIVER BASED ON THE SITE SPECIFIC OBJECTIVES

Dear Ms. Newman:

This letter responds to the attached revised request for external scientific peer review for the subject noted above (revision date: January 8, 2015).

To begin the process for selecting reviewers, I contacted the University of California, Berkeley (University) and requested recommendations for candidates considered qualified to perform the assignment. The University was provided with the earlier November 14, 2014 request letter to me, and its three attachments. No additional material was asked for, nor forwarded to augment the request. This service by the University includes interviewing each promising candidate and is supported through an Interagency Agreement with the University.

Each candidate who was both interested and available for the review period was asked to complete a Conflict of Interest (COI) Disclosure form and send it to me for review, with Curriculum Vitae. The cover letter for the COI form describes the context for COI concerns that must be taken into consideration when completing the form. “As noted, staff will use this information to evaluate whether a reasonable member of the public would have a serious concern about [the candidate’s] ability to provide a neutral and objective review of the work product.”

Reviewers Approved:

1) Philip Bachand, Ph.D.
   Principal Environmental Engineer
   Tetra Tech
   509 4th Street, Suite D
   Davis, CA  95616

   Telephone:  (530) 564-4591
   Email:   Philip.Bachand@tetratech.com
2) Thomas M. Young, Ph.D.
   Professor
   University of California, Davis
   Department of Civil & Environmental Engineering
   One Shields Avenue
   Davis, CA  95616

   Telephone:  (530) 754-9399
   Email:   tyoung@ucdavis.edu

Curriculum Vitae are attached.

**Contacting Reviewers.** Contact the reviewers immediately. Tell them you have just learned of their identities, and when to expect review material. Keep them informed of delays, and ensure new dates are acceptable. Include me as a “cc” on communications indicating delays.

**Initiating the Review.** An example of a letter initiating an external peer review through our program is attached through a hyperlink.

Please send me a copy of your initiating letter sent for this review.

**Revisions.** After the reviews have been completed, the request letter for review will be posted together with the response letter. The request letter must be the same as what was sent to the reviewers, not the previous version sent to them by the University during the search for candidate reviewers. Notable changes, such as in assumptions, findings, and conclusions for Attachment 2 (focus for the reviewers) should be described in a revised letter of request with a new date. The letter should indicate, probably in the first paragraph, a statement that this request revises the previous request, the nature of the changes, and their location in the letter and attachments. (The attached, January 8, 2015 revision satisfactorily addresses these recommendations).

**Mode of Transmission.** Review material frequently is sent electronically. Hard copy is recommended for lengthy documents and documents with fold-out sections. Confirm electronic and hard copies have been received by reviewers.

**Confidentiality of the Review Process.** Approved reviewers were sent the attached January 7, 2009 Supplement to the Cal/EPA Peer Review Guidelines. Please read it carefully. In part it provides guidance to ensure confidentiality through the peer review process. Reviewers must keep their identities confidential, and I ask that you do also to avoid compromising the external review.

**Communication Restrictions.** Communications between reviewers and requesting organizations are restricted to questions of clarification. Both enquiries and responses must be in writing. (Email is fine.) If you prefer, all communications can be routed through me.

**Contacts by Outside Parties.** After reviews have been submitted, the Supplement notes reviewers are under no obligation to discuss their comments with third parties, and we recommend they do not.
All outside parties are provided opportunities to address a proposed regulatory action through a well-defined rulemaking process. Ask your reviewers to direct third parties to you, or a designated staff person, with comments or suggestions in writing.

**Completed Reviews.** These are to be sent directly to the person signing the letter initiating the review, unless directed otherwise.

If I can provide additional help, contact me at any time during the review process.

Regards,

Gerald W. Bowes, Ph.D.
Manager, Cal/EPA Scientific Peer Review Program
Office of Research, Planning and Performance
State Water Resources Control Board
1001 “I” Street, 16th Floor
Sacramento, California 95814

Telephone: (916) 341-5567
Fax: (916) 341-5284
Email: Gerald.Bowes@waterboards.ca.gov

Attachments

1) January 8, 2015 Request for Review
2) Curriculum Vitae:
   a) Philip Bachand, Ph.D.
   b) Thomas M. Young, Ph.D.
3) January 7, 2009 Supplement to Cal/EPA Peer Review Guidelines

cc: Deborah Smith
Los Angeles Regional Water Quality Control Board
Deborah.Smith@waterboards.ca.gov

Renee Purdy
Los Angeles Regional Water Quality Control Board
Renee.Purdy@waterboards.ca.gov
January 8, 2015

Gerald W. Bowes, Ph.D.
Manager, Cal/EPA Scientific Peer Review Program
Office of Research, Planning and Performance
State Water Resources Control Board
1001 I Street
Sacramento, CA 95814

REVISED REQUEST FOR EXTERNAL PEER REVIEW OF A PROPOSED BASIN PLAN AMENDMENT TO ADOPT SITE SPECIFIC OBJECTIVES FOR COPPER AND LEAD AND TO REVISE THE TOTAL MAXIMUM DAILY LOAD FOR METALS IN THE LOS ANGELES RIVER BASED ON THE SITE SPECIFIC OBJECTIVES

Dear Dr. Bowes:

This letter transmits a request to begin the process for external peer review of a Basin Plan amendment to adopt site specific water quality objectives for copper and lead and to revise the total maximum daily load (TMDL) for metals in the Los Angeles River in order to incorporate the site specific objectives. The proposed TMDL/BPA requires peer review, pursuant to California Health and Safety Code Section 57004. The proposal is available for peer review and Regional Board staff requests the peer review be completed by March 4, 2014 if possible. The proposed TMDL/BPA is scheduled to be heard by the Regional Board at the April 9, 2015 regular Board Meeting; therefore, it is essential to complete the review in a timely manner.

This letter is a revised request from the letter I transmitted to you on November 14, 2014. Specifically, this letter includes a revised Attachment 2.

Regional Board staff believes expertise appropriate for the review includes persons familiar with aquatic toxicity and water chemistry and a familiarity with metals aquatic life water quality criteria and USEPA methods for calculating site specific criteria.

The attachments to this letter include Attachment 1, a plain English summary of the proposal; Revised Attachment 2, an outline of the scientific and other technical assumptions, findings and conclusions of the TMDL/BPA in need of peer review; and Attachment 3, a list of persons who participated in the development of this proposal. Should you have questions regarding the project, please contact me at (213) 576-6691 or jnewman@waterboards.ca.gov.
Sincerely,

Jenny Newman, Chief
TMDL Unit 3

Attachments: Summary of TMDL
    Scientific Issues and Questions
    List of Participants

cc: Rik Rasmussen, State Water Resources Control Board
    Jennifer Fordyce, State Water Resources Control Board
    Deborah Smith, Los Angeles Regional Water Quality Control Board
    Renee Purdy, Los Angeles Regional Water Quality Control Board
Attachment 1

Summary of Proposed Action

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) is charged with implementing the provisions of both the Porter Cologne Water Quality Control Act (California law) and the federal Clean Water Act in the Los Angeles Region. Section 303(d)(A)(1) of the Clean Water Act requires the Regional Board to identify those waters within the Region that do not support beneficial uses and establish Total Maximum Daily Loads (TMDLs) for the pollutants causing the impairments. A TMDL specifies the maximum amount of a pollutant a water body can receive and still meet water quality standards, and allocates the acceptable pollutant load to point and nonpoint sources.

The Los Angeles River and Tributaries Metals TMDL (Metals TMDL) was originally adopted on June 2, 2005 and became effective on January 11, 2006. The TMDL addresses impairments due to copper, lead, zinc, cadmium, and selenium and assigns numeric targets and allocations based on the California Toxics Rule (CTR). The TMDL implementation schedule allows time for special studies that may refine the numeric targets and load and waste load allocations. The proposed Basin Plan amendments would revise the copper and lead numeric targets and allocations in the Metals TMDL based on the results of two recently completed special studies.

The first special study is a water effect ratio (WER) for copper, which is allowed by the California Toxics Rule (CTR) and entails comparing local waterbody toxicity to laboratory water toxicity. The proposed TMDL revision would incorporate WER values for Los Angeles River Reaches 1 – 4 and select tributaries.

The second special study is a recalculation of lead criteria using USEPA’s Recalculation Procedure, which utilizes toxicity data from all available national studies to calculate updated national criteria for lead. The USEPA provided a lead toxicity test dataset that meets the minimum data requirements and water quality criterion calculation data requirements. The entire USEPA dataset was used for the Recalculation Procedure. As a result, the recalculation of the lead criteria results in a de facto recalculation of the national criteria. However, the proposed amendments are focused on the Los Angeles River and its tributaries.

The proposed Basin Plan amendments would (1) adopt site specific water quality objectives for copper and lead and (2) revise the Los Angeles River Metals TMDL in order to incorporate the site specific objectives into the numeric targets and allocations. The goal of the proposed Basin Plan amendments is to fully protect aquatic life, while taking into account site specific conditions and updated toxicity data. The proposed amendments are supported by a staff report prepared by the Los Angeles Regional Board, which is based on a Copper WER report, a Lead Recalculation report, and a Site Specific Objective report prepared by Larry Walker Associates for the Los Angeles River Metals TMDL Implementation Group. The supporting reports were developed in consultation with an independent Technical Advisory Committee. The staff report and supporting documentation provide the detailed factual basis and analysis supporting the proposed revisions.
REVISED Attachment 2
(Revisions to Attachment 2 dated November 14, 2014 are shown in strikeout)

Description of scientific assumptions, findings, and conclusions to be addressed by peer reviewer for proposed

Site Specific Objectives for Copper and Lead and Revised Metals TMDL for the Los Angeles River

The statute mandate for external scientific peer review (Health and Safety Code Section 57004) states that the reviewer’s responsibility is to determine whether the scientific portion of the proposed rule is based upon sound scientific knowledge, methods, and practices.

We request that you make this determination for each of the following assumptions, findings, and conclusions that constitute the scientific basis of the proposed regulatory action. An explanatory statement is provided for each to focus the review.

1. The methodology for determination of Copper WER, included in the Copper WER report, section 2, is consistent with USEPA guidelines.

The USEPA 1994 Water Quality Standards Handbook (http://water.epa.gov/scitech/swguidance/standards/handbook/chapter03.cfm#section7) presents three procedures for deriving site-specific criteria: the recalculation procedure, the WER procedure, and the resident species procedure. The proposed revisions to the copper water quality objectives and corresponding revisions to the TMDL numeric targets and allocations are based on the WER procedure. The methodology follows USEPA’s Interim Guidance on the Determination and Use of Water-Effect Ratios for Metals (http://water.epa.gov/scitech/swguidance/standards/upload/2002_06_11_standards_handbook_handbookappxL.pdf) and Streamlined Water-Effect Ratio Procedure for Discharges of Copper (http://water.epa.gov/scitech/swguidance/standards/criteria/aqlife/copper/upload/copper.pdf).

2. The methodology for recalculation of the lead criteria, included in the Lead Recalculation report, section 3, is consistent with USEPA guidelines.

The proposed revisions to the lead water quality objectives and corresponding revisions to the TMDL numeric targets and allocations are based on the recalculation procedure. The methodology follows Appendix B of the Interim Guidance on Determination and Use of Water-Effect Ratios for Metals and USEPA’s A Change in the Recalculation Procedure and Optional Consideration of Life Stage When the Recalculation Procedure is Used (http://water.epa.gov/scitech/swguidance/standards/criteria/aqlife/ammonia/upload/Revised-Deletion-Process-for-the-Site-Specific-Recalculation-Procedure-for-Aquatic-Life-Criteria.pdf)
3. The approach to determine downstream protectiveness of upstream Copper WERs included in the Site Specific Objective report, section 4.3 and Attachment A, ensures that water quality objectives will be attained in all reaches.

The supporting reports employ a statistical approach to determine the protectiveness of Copper WERs in instances where an upstream waterbody contains a WER that is greater than the WER in downstream waterbodies (i.e., Tujunga Wash, Burbank Western Channel, and Rio Hondo). The analysis concludes that all downstream reaches would achieve the TMDL (defined as a median expected frequency of zero exceedances in three years), with at least a 90% level of confidence.

However, the staff report finds that adopting WERs for tributaries that are greater than WERs in the river downstream would not fully protect water quality downstream. Therefore, in order to fully protect water quality downstream, the proposed revisions to the copper water quality objectives are based on the lower of the calculated site specific or downstream WER.

4. The revised TMDL monitoring included in the Staff Report, section 5, will ensure the continued protectiveness of the Copper WER by tracking any changes in water quality conditions that could affect the toxicity of copper.

Because the copper WERs are based on site-specific conditions within the watershed, follow up monitoring to evaluate the continuing protectiveness of the WERs is proposed. The proposed monitoring is based on the frequency, location, and types of monitoring that will be necessary to evaluate implementation of the copper WERs. Monitoring and reporting should be coordinated with the existing Metals TMDL monitoring program and/or other existing programs, such as the LA County MS4 Permit Coordinated Integrated Monitoring Programs. No additional monitoring beyond ongoing TMDL and permit monitoring is proposed for the lead site specific objectives and associated TMDL numeric targets and allocations, because they were calculate using the USEPA's Recalculation Procedure, and changes in site-specific water quality will not affect their values.

**Overarching questions:**

Reviewers are not limited to addressing only the specific issues presented above and are asked to contemplate the following questions.

(a) In reading the staff report and proposed implementation language, are there any additional scientific issues that are part of the scientific basis of the proposed rule not described above? If so, please comment with respect to the statute language given above.

(b) Taken as a whole, is the scientific portion of the proposed rule based on sound scientific knowledge, methods, and practices? Reviewers should also note that some proposed actions may rely significantly on professional judgment where available scientific data are not as extensive as desired to support the statute requirement for absolute scientific rigor. In these situations, the proposed course of action is favored over no action.
The preceding guidance will ensure that reviewers have the opportunity to comment on all aspects of the scientific basis of the proposed Board action. At the same time, reviewers also should recognize that the Board has a legal obligation to consider and respond to all feedback on the scientific portions of the proposed rule. Because of this obligation, reviewers are encouraged to focus feedback on the scientific issues that are relevant to the central regulatory elements being proposed.
LIST OF PARTICIPANTS

EXECUTIVE OFFICE

Samuel Unger, Executive Officer Los Angeles Regional Water Quality Control Board
Deborah Smith, Chief Deputy Officer, Los Angeles Regional Water Quality Control Board

TOTAL MAXIMUM DAILY LOADS DEVELOPMENT

Renee Purdy, Regional Programs Section, Los Angeles Regional Water Quality Control Board
Jenny Newman, Los Angeles Regional Water Quality Control Board
Celine Gallon, Los Angeles Regional Water Quality Control Board
Ginachi Amah, Los Angeles Regional Water Quality Control Board

SUPPORTING RESEARCH AND STUDY

Chris Minton, Larry Walker Associates, Seattle, WA
Steve Bay, Southern California Coastal Water Research Project
Tyler Linton, Great Lakes Environmental Center
Bob Santore, HydroQual Inc.
Charles Delos, USEPA
Ken Farfsing, City of Signal Hill
Vijay Desai, City of Los Angeles
Susan Paulsen, Flowscience
Vada Yoon, Flowscience
PHILIP A.M. BACHAND, PH.D.

EDUCATION
University of California, Berkeley Ph.D. Civil and Environmental Engineering, 1996

Effects of Managing Vegetative Species, Hydraulic Residence Time, Wetland Age and Water Depth on Removing Nitrate from Nitrified Wastewater in Constructed Wetland Macrocysts in the Prado Basin, Riverside County, California

University of California, Berkeley M.S. Civil Engineering, 1992
University of California, Davis B.S. Mechanical Engineering, 1984

PROFESSIONAL INTEREST
- Nitrogen, phosphorus and carbon cycling, interactions and transport in agricultural, wetland and aquatic systems
- Developing BMPs and designs for enhancing water quality improvements and reducing nutrient, organic carbon, MeHg and fine particle export in natural, agricultural and wetland systems
- Agricultural field- to farm-scale water resources management and conservation practice strategies
- Surface and vadose zone hydrologic interactions
- Bridging theory and application

EXPERIENCE
- Principal Environmental Engineer. Tetra Tech. 2012 – Current.
- Affiliated Scientist. UC. Davis. 2006 – Current.
**AWARDED GRANTS AND LISTS OF COLLABORATING ORGANIZATIONS**

<table>
<thead>
<tr>
<th>Project</th>
<th>Collaborators</th>
<th>Role</th>
<th>Total Project Budget</th>
<th>Funding Organization</th>
<th>Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pending</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>* RCPP McMullin Expansion Project – Expansion of On-Farm Flood Capture project (see below) for flood risk reduction and direct groundwater recharge in the Kings Basin. <strong>Pre-proposal approved. Submitting Final Proposal.</strong></td>
<td>KRCD, Tt, UCD, Terranova Ranch, Landowners</td>
<td>Tech Lead</td>
<td>$15,000,000</td>
<td>NRCS RCPP program</td>
<td>2015 - 2020</td>
</tr>
<tr>
<td>* Utilizing isotope to refine Kc coefficients, ET estimates and orchard climate zones across California</td>
<td>UCD, Tt</td>
<td>PI</td>
<td>$400,000</td>
<td>Ca. Dept Food and Ag.</td>
<td>2015 - 2018</td>
</tr>
<tr>
<td>* Vadose zone model to assess groundwater quality effects from On-Farm Flood Capture of flood flows for direct recharge</td>
<td>Suscon, Tt, UCD, LSCE</td>
<td>PI</td>
<td>$350,000</td>
<td>Ca. Dept Food and Ag.</td>
<td>2015 - 2016</td>
</tr>
<tr>
<td>Current</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>* Pinto Lake Project – Restoring Pinto Lake thru treatment of lake and tributaries with coagulation and wetland systems</td>
<td>City of Watsonville, Tt, Santa Cruz Co. RCD and others</td>
<td>Coagulant team</td>
<td>$2,000,000</td>
<td>NSF/NIFA</td>
<td>2014 - 2017</td>
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<tr>
<td>* Economic evaluation of agricultural adaptation to climate change and water resources constraints in the San Joaquin Valley, California</td>
<td>UCD, Tt, UCM</td>
<td>PI</td>
<td>$2,000,000</td>
<td>NSF/NIFA</td>
<td>2014 - 2017</td>
</tr>
<tr>
<td>* Professional and Technical Support for Bay Delta Issues</td>
<td>Tt, UCD, USGS, WWR, SWS, HT, Lux</td>
<td>dPM, PI</td>
<td>tbd 3</td>
<td>MWD</td>
<td>2014 - 2018</td>
</tr>
<tr>
<td>* Rice culture in the Sacramento-San Joaquin Delta to mitigate past agricultural impacts, improve water quality and sequester carbon</td>
<td>UCD, Tt, UCB, USGS, HF, WWR, SWS, HT, UCCE</td>
<td>PM, PI</td>
<td>$4,700,000</td>
<td>NRCS NIFA</td>
<td>2011 - 2016</td>
</tr>
<tr>
<td>* McMullin On-Farm Flood Capture and Recharge Project, Phase 1 - Terranova Ranch</td>
<td>KRCD, Tt, UCD, TR, PP, Suscon</td>
<td>LT, PI</td>
<td>$7,000,000</td>
<td>DWR, Terranova Ranch</td>
<td>2013 - 2018</td>
</tr>
</tbody>
</table>
**P.A.M. Bachand**

* Investigating in situ Low Intensity Chemical Dosing to decrease Delta waters DOC concentrations and DBP Precursors while accelerating wetland peat accretion rates and reducing flood risks
  
  **USGS, UCD, CSUS, BA, Tt**
  **PI, LT**
  **$2,350,000**
  **DWR, Calfed**
  **2007 - 2015**

* Ecosystem Restoration Services for the Sacramento San Joaquin Delta
  
  **WWR, SWS, Tt**
  **Sub**
  **$13,000,000**
  **DWR**
  **2011 - 2015**

**Past**

* Demonstrating Groundwater Recharge with Storm Flood Flows on Agricultural Lands using Best Management Practices to mitigate groundwater overdraft
  
  **BA, UCD, TR, Suscon**
  **PD, PI**
  **$150,000**
  **NRCS CIG / Terranova Ranch**
  **2010 - 2012**

* Evaluation of Rice Cultivation in the Sacrameno-San Joaquin Delta
  
  **HF, DWR, UCD, USGS, UCB, UCCE, BA**
  **PI**
  **$1,500,000 (est)**
  **DWR**
  **2008 - 2013**

* Strategy for Resolving MeHg and Low DO Events in Northern Suisun Marsh
  
  **WWR, USGS, UCD, SJSU, Suisun RCD, MLML, CDWR, BA**
  **Co-PI**
  **$1,000,000 (est)**
  **SWRCB**
  **2007 - 2009**

* Methylmercury cycling and export from agricultural and natural wetlands in the Yolo Bypass
  
  **USGS, CDFA, YBF, CSUSJ, BA**
  **Co-PI**
  **$1,000,000**
  **SWRCB**
  **2007 - 2009**

* Developing Best Management Practices (BMPs) for Applying Dairy Lagoon Water to Forage Crops in Stanislaus County
  
  **BA, UCD, ESRCD, UCCE**
  **PI, LT**
  **$1,000,000**
  **SWRCB**
  **2006 - 2012**

* Quantifying loads and assessing management strategies for reducing drinking water constituents of concern in watersheds
  
  **USGS, UCD, YRCD, HF**
  **PI, PM**
  **$4,500,000**
  **SWRCB**
  **2005 - 2009**

* Integrated Regional Wetland Monitoring Pilot Project
  
  **WWR, BA, PWA, SFSU, PRBO, UCB, SFEI**
  **Co-PI**
  **$700,000**
  **CalFed**
  **2002 - 2005**

* Laboratory Studies of Chemical Addition to Improve Storm Water Runoff
  
  **BA, UCD, CSUS OWP**
  **PI, LT**
  **$250,000**
  **Caltrans**
  **2002 - 2004**
**P.A.M. Bachand**

* Chemical Treatment Methods Pilot (CTMP) for Treatment of for Urban Runoff; Feasibility and Design  
  BA, UCD, City So Lake Tahoe  
  PI, LT  
  $215,000  
  USDA FS  
  2000 - 2002

* Low Intensity Chemical Dosing (LICD): Development of Management Practices, FL  
  DU  
  PI  
  $600,000  
  USEPA, Florida EAA EPD  
  1996 - 2000

Notes

1. Less familiar organization acronyms:  WWR = Wetlands and Water Resources; PWA = Phil Williams and Associates; DU = Duke University; RCD = Resource Conservation District; MLML = Moss Landing Marine Lab; CDWR = California Dept of Water Resources; YBF = Yolo Bypass Foundation; SWS = Stillwater Sciences, HF = Hydrofocus, Inc; HT = Hultgren - Tillis; SFSU = San Francisco State University; CSUSJ = California State University San Jose; CWI CSUF = California Water Institute California State University Fresno; UCM = UC Merced; UCB = UC Berkeley; UCD = UC Davis, Tt = Tetra Tech; BA = Bachand & Associates, YRCD = Yolo county RCD; SFEI = San Francisco Estuarine Institute; ESRCD = East Stanislaus RCD; UCCE = UC Cooperative Extension; LSCE = Luhdorff and Scalminini Consulting Engineers.

2. LT = Lead Technical PI; PI = Principal Investigator, PM = Project Manager, dPM = deputy Project Manager

3. Application for RFQ. Contract amount is function of future needs. RFQ provides contract vehicle.

**PUBLICATIONS**


PUBLICLY AVAILABLE REPORTS


Final Report for the City of South Lake Tahoe. Submitted to the USFS and the City of South Lake Tahoe. February 22, 2007. (Publicly available from Aquatic Commons).


**SELECTED CONFERENCE PROCEEDINGS AND POSTERS**


12. Pellerin, B A; Saraceno, J; Downing, B D, Bachand, P A; and Bergamaschi, B A. 2009. In situ measurements of organic matter dynamics during a storm event in an agricultural watershed. American Geophysical Union,. Eos Trans. AGU, 89(53), Fall Meet. Suppl., Abstract H11B-0761


and Strategies to Reduce Drinking Water Concerns. CALFED 2008 Science Conference, Land Use and Drinking Water Quality Session
BIOGRAPHICAL SKETCH

NAME

Thomas Michael Young

POSITION TITLE

Professor

eRA COMMONS USER NAME

tmyoung2045

EDUCATION/TRAINING  (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)

<table>
<thead>
<tr>
<th>INSTITUTION AND LOCATION</th>
<th>DEGREE (if applicable)</th>
<th>YEAR(s)</th>
<th>FIELD OF STUDY</th>
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<tbody>
<tr>
<td>Michigan State University, East Lansing</td>
<td>B.S.</td>
<td>1985</td>
<td>Chemical Engineering</td>
</tr>
<tr>
<td>University of California, Berkeley</td>
<td>M.P.P.</td>
<td>1987</td>
<td>Public Policy</td>
</tr>
<tr>
<td>University of Michigan, Ann Arbor</td>
<td>Ph.D.</td>
<td>1996</td>
<td>Environmental Engineering</td>
</tr>
</tbody>
</table>

A. Personal Statement:
Dr. Young’s research applies physical and chemical principles to help understand the fate, transport and transformation of pollutants in natural and engineered systems. The laboratory conducts both conventional “targeted” analyses of metals and organic pollutants using a range of mass spectrometric methods and “nontarget analysis” that serves to follow up on biological effects identified using, for example, in vitro or in vivo biological assays. This approach allows for the discovery of previously unidentified environmental contaminants that would not be detected or quantified by traditional targeted analyses, and it focuses analytical resources on the most environmentally significant samples. This approach represents a significant paradigm shift for the field of environmental chemistry.

As part of this center, he will apply the analytical resources of his laboratory, particularly liquid and gas chromatography with high resolution mass spectrometry, to identify and quantify putative environmentally active compounds in environmental samples such as house dust. He will apply state-of-the-art statistical methods to analyze the high resolution mass spectrometric data in conjunction with data on biological outcomes to identify compounds or groups of compounds that appear to be responsible for observed effects. This is expected to trigger more mechanistic follow-up work to determine causality.

B. Positions and Honors.

1987-1990 Environmental Protection Specialist, US Environmental Protection Agency, Washington, DC
1990-1995 Research and Teaching Assistant, University of Michigan, Ann Arbor
1995-2001 Assistant Professor, Civil and Environmental Engineering, University of California, Davis
2001-2006 Associate Professor, Civil and Environmental Engineering, University of California, Davis
2006-pres. Professor, Civil and Environmental Engineering, University of California, Davis

Other Experience and Professional Memberships

1995- Member, American Chemical Society
1996 Member, Association of Environmental Engineering and Science Professors
1998 Member, Society of Environmental Toxicology and Chemistry
2009- Member, US EPA Science Advisory Board, Environmental Engineering Committee

Honors

2004 Distinguished Service Award, Association of Environmental Engineering and Science Professors
1998 NSF Career Award

C. Significant Relevant Publications (out of over 75 peer-reviewed articles)


Supplement to Cal/EPA External Scientific Peer Review Guidelines – “Exhibit F” in Cal/EPA Interagency Agreement with University of California
Gerald W. Bowes, Ph.D.

Guidance to Staff:

1. **Revisions.** If you have revised any part of the initial request, please stamp "Revised" on each page where a change has been made, and the date of the change. Clearly describe the revision in the cover letter to reviewers, which transmits the material to be reviewed. The approved reviewers have seen your original request letter and attachments during the solicitation process, and must be made aware of changes.

2. **Documents requiring review.** All important scientific underpinnings of a proposed science-based rule must be submitted for external peer review. The underpinnings would include all publications (including conference proceedings), reports, and raw data upon which the proposal is based. If there is a question about the value of a particular document, or parts of a document, I should be contacted.

3. **Documents not requiring review.** The Cal/EPA External Peer Review Guidelines note that there are circumstances where external peer review of supporting scientific documents is not required. An example would be "A particular work product that has been peer reviewed with a known record by a recognized expert or expert body." I would treat this allowance with caution. If you have any doubt about the quality of such external review, or of the reviewers' independence and objectivity, that work product – which could be a component of the proposal - should be provided to the reviewers.

4. **Implementation review.** Publications which have a solid peer review record, such as a US EPA Criteria document, do not always include an implementation strategy. The Cal/EPA Guidelines require that the implementation of the scientific components of a proposal, or other initiative, must be submitted for external review.

5. **Identity of external reviewers.** External reviewers should not be informed about the identity of other external reviewers. Our goal has always been to solicit truly independent comments from each reviewer. Allowing the reviewers to know the identity of others sets up the potential for discussions between them that could devalue the independence of the reviews.

6. **Panel Formation.** Formation of reviewer panels is not appropriate. Panels can take on the appearance of scientific advisory committees and the external reviewers identified through the Cal/EPA process are not to be used as scientific advisors.

7. **Conference calls with reviewers.** Conference calls with one or more reviewers can be interpreted as seeking collaborative scientific input instead of critical review. Conference calls with reviewers are not allowed.
Guidance to Reviewers from Staff:

1. **Discussion of review.**

   Reviewers are not allowed to discuss the proposal with individuals who participated in development of the proposal. These individuals are listed in Attachment 3 of the review request.

   Discussions between staff and reviewers are not permitted. Reviewers may request clarification of certain aspects of the review process or the documents sent to them.

   Clarification questions and responses must be in writing. Clarification questions about reviewers' comments by staff and others affiliated with the organization requesting the review, and the responses to them, also must be in writing. These communications will become part of the administrative record.

   The organization requesting independent review should be careful that organization-reviewer communications do not become collaboration, or are perceived by others to have become so. The reviewers are not technical advisors. As such, they would be considered participants in the development of the proposal, and would not be considered by the University of California as external reviewers for future revisions of this or related proposals. The statute requiring external review of science-based rules proposed by Cal/EPA organizations prohibits participants serving as peer reviewers.

2. **Disclosure of reviewer Identity and release of review comments.**

   Confidentiality begins at the point a potential candidate is contacted by the University of California. Candidates who agree to complete the conflict of interest disclosure form should keep this matter confidential, and should not inform others about their possible role as reviewer.

   Reviewer identity may be kept confidential until review comments are received by the organization that requested the review. After the comments are received, reviewer identity and comments must be made available to anyone requesting them.

   Reviewers are under no obligation to disclose their identity to anyone enquiring. It is recommended reviewers keep their role confidential until after their reviews have been submitted.

3. **Requests to reviewers by third parties to discuss comments.**

   After they have submitted their reviews, reviewers may be approached by third parties representing special interests, the press, or by colleagues. Reviewers are under no obligation to discuss their comments with them, and we recommend that they do not.

   All outside parties are provided an opportunity to address a proposed regulatory action during the public comment period and at the Cal/EPA organization meeting where the proposal is considered for adoption. Discussions outside these provided avenues for comment could seriously impede the orderly process for vetting the proposal under consideration.
4. **Reviewer contact information.**

The reviewer's name and professional affiliation should accompany each review. Home address and other personal contact information are considered confidential and should not be part of the comment submittal.