

2016

## Front Matter

Grace Coulombe  
*Bates College*

Mary B. O'Neill  
*Hamilton College*

Michael Schuckers  
*St. Lawrence University*

Follow this and additional works at: [http://scholarcommons.usf.edu/qmasc\\_handbook](http://scholarcommons.usf.edu/qmasc_handbook)

---

### Scholar Commons Citation

Coulombe, Grace; O'Neill, Mary B.; and Schuckers, Michael, "Front Matter" (2016). *QMaSC: A Handbook for Directors of Quantitative and Mathematics Support Centers*. Paper 32.  
[http://scholarcommons.usf.edu/qmasc\\_handbook/32](http://scholarcommons.usf.edu/qmasc_handbook/32)

This Front Matter is brought to you for free and open access by the Tampa Library at Scholar Commons. It has been accepted for inclusion in QMaSC: A Handbook for Directors of Quantitative and Mathematics Support Centers by an authorized administrator of Scholar Commons. For more information, please contact [scholarcommons@usf.edu](mailto:scholarcommons@usf.edu).





# A Handbook for Directors of Quantitative and Mathematics Support Centers

© Grace Coulombe, Mary O'Neill, Michael E. Schuckers, eds.

August 25, 2016

© 2016 Grace Coulombe, Mary B. O'Neill and Michael E. Schuckers, editors.  
All rights reserved.

This work in whole or in part may only be distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivs (CC BY-NC-ND) License.

The current maintainer of this work is Michael Schuckers (`schuckers at gmail dot com`).

First edition: August 2016

Coulombe, Grace, O'Neill, Mary B., and Schuckers, Michael  
A Handbook for Directors of Quantitative and Mathematics Support Centers  
Includes illustrations, bibliographical references and index.  
ISBN 978-0-9776744-4-2  
`scholarcommons.usf.edu/qmasc_handbook`

Neck Quill Press, 2016





For QMaSC Directors.

- G.L.C.

For my grandchildren: Always in my heart.

- M.B.O'N.

For Daniel, Christopher and Gabriella  $\mathcal{FWMW}\mathcal{H}$ .

- M.E.S.



*This material is based upon work supported, in part, by the National Science Foundation under Grant DUE-1255945. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation*



# Acknowledgments

This book is the result of the work and the efforts of so many people. As we sometime joke, ‘it takes a village to run a QMaSC.’ We could not have done this work without the help of so many people.

We want to thank Lee Zia and Ron Buckmire, Program Managers at the National Science Foundation, and the National Science Foundation (NSF) for funding this project. Lee and Ron gave helpful suggestions and nudged our vision along so that it came to fruition.

We want to thank all of the authors whose chapters appear in this Handbook. It has been a pleasure working with them. We have been consistently very impressed by the enthusiasm, collegiality, patience, and timeliness of our collaborators. They have made this project a joy. As always, when we spend time with other people who direct QMaSCs, we are enriched by the conversations and the interactions. Thanks also go to Cat McCune and Patrice Conrath for the work that they did in helping to lead parts of the workshop that launched this handbook. They made valuable contributions.

Cat McCune and Mary’s husband, John O’Neill, did more than their share of help with the editing process and we are very grateful for that assistance. Mega-kudos to them.

The workshop that led to this handbook was greatly aided by the organizational efforts of McKayla Nuffer. McKayla, we thank you so much.

Matt Salomone deserves special thanks for designing the cover art for this book and for allowing us to use it.

Thanks also to the team at the University of South Florida who are publishing this handbook through their Scholar Commons ([http://scholarcommons.usf.edu/qmasc\\_handbook/](http://scholarcommons.usf.edu/qmasc_handbook/)) especially Jason Boczar.

Michael wants to thank Tim Morse, Alli Morrow, McKayla Nuffer, Kerrin Ehrensbeck, Patti Lock, Ed Harcourt, Devon Stein and Carol Smith, all from St. Lawrence University, for their support, advice and guidance since this journey began. He thanks Martie and Gregg Peterson for their generosity to the Peterson Quantitative Resource Center at St. Lawrence University. He also wants to thank his family, especially Stephanie, for the patience they have shown during this process.

Mary thanks Grace Coulombe and Michael Schuckers, whose humor and intelligence made it

a pleasure to work on this project. Thanks to Hamilton College and to the Dean of the Faculty for their generous support, and to the QSR Advisory Committee, especially Professor Tim Kelly. Finally, Mary would like to thank her husband and Professor of English John H. O'Neill, who was a member of the original Quantitative Literacy Committee at Hamilton College, and whose support and encouragement have been invaluable.

Grace thanks Hillory Oakes and Misty Beck, of the writing program at Bates College, as well as, John O'Neill and Catherine McCune for their support and advice on writing and editing. For their expertise and assistance in helping to secure the grant to fund this project, Grace thanks Phil Walsh and Joseph Tomaras, from Bates, as well as, Carol Smith and Devon Stein, from St. Lawrence. Grace also thanks Michael Schuckers and Mary O'Neill, without their energy and passion this handbook would never have existed.

Finally, we want to thank the mentors and the tutors that have been part of our QMaSCs at Bates College, at Hamilton College, and at St. Lawrence University. Our experiences with them provide the context and the capacity for so much of what we do.

# Contents

<b>I</b>	<b>Introduction</b>	<b>1</b>
	Michael Schuckers	
	<b>Preface</b>	<b>3</b>
	Mary B. O'Neill	
	<b>Introduction</b>	<b>5</b>
<b>II</b>	<b>Center Leadership and Management</b>	<b>9</b>
	Rosalie Tepper	
	<b>Effective Management</b>	<b>11</b>
	Ja'Wanda S. Grant	
	<b>Responding To Institutional Needs</b>	<b>19</b>
	Ibrahim Rosic	
	<b>Addressing Diversity</b>	<b>43</b>
	Gail Hilyard	
	<b>Strategic Planning and Budgeting</b>	<b>55</b>
	Maria Belk	
	<b>Incorporating Technology</b>	<b>61</b>
	Gail Hilyard	
	<b>Math Anxiety and the Impact on QMaSC Services</b>	<b>71</b>

<b>III</b>	<b>Community Interactions</b>	<b>83</b>
	Frederick L. Van Swearingen	
	<b>Coordinating With Institutional Administration</b>	<b>85</b>
	Laurie Wern Overmann	
	<b>Outreach and Promotion</b>	<b>93</b>
	Matthew Salomone, Kathryn Bjorge	
	<b>Building Effective Quantitative and Math Faculty Development</b>	<b>101</b>
	Eric Gaze	
	<b>Course Collaboration Models</b>	<b>115</b>
	McKayla Nuffer	
	<b>Virtual Presence</b>	<b>125</b>
<b>IV</b>	<b>Staffing, Hiring, and Training</b>	<b>137</b>
	Christine Tinsley	
	<b>Staffing and Hiring</b>	<b>139</b>
	Johnathan Nelson	
	<b>Training Materials and Methods</b>	<b>151</b>
	Cymra Haskell	
	<b>Practice and Mentoring</b>	<b>159</b>
<b>V</b>	<b>Center Assessment</b>	<b>229</b>
	Tiana Bosley	
	<b>Internal Evaluation And Reporting</b>	<b>231</b>
	Rachel M. Dunwell, Grace Coulombe, Michael E. Schuckers	
	<b>Reporting Assessment Findings to External Audiences</b>	<b>243</b>
	Dennis Lewandowski	
	<b>Center Staff Feedback</b>	<b>259</b>

<b>VI Starting a Center</b>	<b>263</b>
Darry Andrews, Carolyn Johns	
<b>Defining Staff Roles</b>	<b>265</b>
George Recck	
<b>Hiring a Director</b>	<b>277</b>
Eileen M. Phillips	
<b>Designing a QMaSC Space</b>	<b>289</b>
<b>VII Case Studies</b>	<b>299</b>
Margot Black	
<b>Case Study: Symbolic and Quantitative Resource Center at Lewis &amp; Clark College</b>	<b>301</b>
Patrice Conrath	
<b>Case Study: Math and Computer Science Academic Support Services at Bethel University</b>	<b>313</b>
Grace Coulombe	
<b>Case Study: The Mathematics &amp; Statistics Workshop at Bates College</b>	<b>333</b>
Thomas Dick	
<b>Case Study: Math Learning Center at Oregon State University</b>	<b>345</b>
Vera L. Mayes	
<b>Case Study: The William B. Law Learning Commons at Tallahassee Community College</b>	<b>351</b>
Catherine McCune	
<b>Case Study: The Spinelli Center for Quantitative Learning at Smith College</b>	<b>359</b>
Mary B. O'Neill	
<b>Case Study: Quantitative and Symbolic Reasoning Center at Hamilton College</b>	<b>367</b>

Patrick T. Perkins

**Case Study: The Math Study Center at the University of Washington** 377

Tom Roby

**Case Study: Quantitative Learning Center at UConn** 383

Michael E. Schuckers

**Case Study: Peterson Quantitative Resource Center at St. Lawrence University** 397

**Contributor Biographies** 407

**Index** 413

## Part I

# Introduction



# Preface

© Michael Schuckers,  
St. Lawrence University

This handbook is the culmination of something that started in the Spring of 2011 at a Northeast Consortium for Quantitative Literacy (NECQL) meeting at the University of Massachusetts Boston. For several years, Mary, Grace, and I, the editors of this Handbook, had had informal discussions about the lack of resources available for managing tutoring centers like the ones that we directed. This was especially of note to me since, in 2007, I had started the Quantitative Resource Center at St. Lawrence University from scratch. We wanted to create a source of information for the people who lead or direct or administer math-related centers like ours. In particular, we wanted to create something that would be very useful to someone just starting as a new QMaSC director.

Mary O’Neill, Grace Coulombe and I put together two panels on how to lead what we came to call a QMaSC or Quantitative and Mathematical Support Center: the aforementioned one at UMass - Boston and another the following January at the Joint Mathematics Meeting. We got some good comments and suggestions at those sessions and we joked about doing more. At the end of the next NECQL meeting, Mary stood up and said we were writing a book. Grace and I were a *little* surprised but we rolled with it. A couple weeks later, Mary and Grace came to St. Lawrence University for a couple of days and we put together an outline of a grant proposal. We pitched the idea of a national workshop to the National Science Foundation (NSF), they liked the idea and had some good suggestions. Specifically, they were interested in a diverse range of institutions being involved and challenged us to get commitments from center directors at research institutions and community colleges and at schools all over the country. This was in large part due to the fact that Mary, Grace and I all ran centers at liberal arts colleges in the northeastern United States.

---

Suggested Citation: Michael Schuckers (2016), “Preface”, in G. Coulombe, M. O’Neill, M. Schuckers (Eds.) *A Handbook for Directors of Quantitative and Mathematical Support Centers*, Neck Quill Press, [http://scholarcommons.usf.edu/qmasc\\_handbook](http://scholarcommons.usf.edu/qmasc_handbook).

This material is based upon work supported, in part, by the National Science Foundation under Grant DUE-1255945. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation

We reached out to many, many QMaSC directors around the country and we were able to build a diverse set of people willing to come to Hartford, CT for a day on July 31, 2013. The directors that participated can be seen in the photo from the workshop in Figure 1.



Figure 1: QMaSC Workshop Participant, July 31, 2013

Having built a list of committed QMaSC directors, we were fortunate to have NSF fund our proposal in late 2012. We spent the next year recruiting more QMaSC directors to be part of the workshop and organizing the details of the workshop. Our chapter authors all wrote a draft of the chapters to which they were assigned prior to coming to Hartford. (Hartford was chosen because MathFest started there the next day.) Before everyone arrived in Hartford, we forwarded these drafts to other directors, they read the drafts and at the workshop we discussed feedback on individual chapters. After the workshop, these critiques were collected and given to the chapter authors who then incorporated them and revised their chapters. What follows in this handbook is the result of that workshop. In addition, we had several QMaSC directors write case studies of their centers. Since the chapters focus on an individual aspect of directing a QMaSC, we thought that having these case studies would give readers a sense of how these various aspects of managing a center are accomplished within a single QMaSC.

At the workshop, the last item we discussed (before adjourning for some social time) was the possibility of a network of QMaSC directors. That network would be a way to continue the conversation but also provide recognition for the professional work that QMaSC directors do. Such a network is still a work in progress. We have yet to find even an imperfect way to make it happen, but we are hopeful that it will eventually happen.

We are excited to present this handbook to you and hope you will find it helpful.

-Canton, NY, June 28, 2016