

# Free and Open Source Software for Geospatial (FOSS4G) Conference Proceedings

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Volume 17 *Boston, USA*

Article 3

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2017

## Volume Introduction Letter

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### Recommended Citation

Schweik, Charles M.; Zia, Mohammed; and Anderson, Andy (eds.) (2017) "Volume Introduction Letter," Free and Open Source Software for Geospatial (FOSS4G) Conference Proceedings: Vol. 17, Article 3. Available at: <http://scholarworks.umass.edu/foss4g/vol17/iss1/3>

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# From the Editors...

*Greetings!* This Conference Proceedings is a collection of outstanding papers and posters submitted to the Academic Program of the International Conference for Free and Open Source Software for Geospatial (FOSS4G), 14<sup>th</sup> to 19<sup>th</sup> August 2017 in Boston, U.S.A.<sup>1</sup>

As Barend Köbben noted in his opening of the 2014 Proceedings<sup>2</sup>, FOSS4G has not, historically, been identified as an academic conference. It was founded by FOSS4G developers affiliated with the Open Source Geospatial Foundation (OSGeo), with a primary focus on sharing new developments and supporting conversations between developers and their user communities. But a quick review of FOSS4G conference proceedings demonstrates that the academic side of FOSS4G is growing, which is not surprising given how FOSS4G has matured over the last decade. In 2011 at FOSS4G Denver, seven academic papers were published in the academic proceedings<sup>3</sup>. Four years later, at 2015 FOSS4G Seoul, the academic proceedings contained eleven papers<sup>4</sup>. This year, FOSS4G 2017 Boston had 49 academic abstracts submitted amongst the 416 all-conference submissions. After conducting a peer-review process<sup>5</sup>, the Academic Program Committee selected eighteen papers and nine posters for publication in these proceedings<sup>6</sup>. Many will agree that this is an important trend, for in academics and in geospatial science more generally, the phenomena of FOSS4G needs to be strongly represented to increase their accessibility and expand their audiences.

Substantively, readers will discover that these academic papers cover a wide range of topics. For example, under the general topic of geospatial modeling, several focus on hydrologic modeling (papers 1.7 and 1.11 in the table of contents), one on multi-scale urban climate modeling (paper 1.18), and one modeling the traveling salesman problem using OpenStreetMap data (paper 1.12). Research related to spatial databases are represented, with one comparing the performance of SQL versus NoSQL spatial databases (paper 1.1), one on the optimization of spatiotemporal indexing (paper 1.10), and one on the storage and management of digital maps via an open geoportal library system (paper 1.9). Other academics or geospatial scientists submitted papers that investigate approaches to geovisualization, including one on the processing and visual display of big geospatial data (paper 1.13) and one that develops methods to produce beautiful geospatial data in map output that mimic the brush strokes of painter Vincent Van Gogh (paper 1.17). Still other papers move forward geospatial research methods (papers 1.6 and 1.16), or apply FOSS4G technologies and open standards in environmental science applications (papers 1.4 and 1.5). In all cases, FOSS4G developmental approaches and technologies are well represented.

In addition to creating a new FOSS4G Proceedings that will follow tradition and be published on the OSGeo Journal website<sup>7</sup>, we also have implemented, with the help of the University of Massachusetts Amherst Scholarly Communication team<sup>8</sup>, a new paper review and proceedings publishing system built upon BEPress' Digital Commons system<sup>9</sup>. The UMass Amherst ScholarWorks platform provides a behind-the-scenes paper and poster review processing system that allows Proceeding Editors to manage initial submissions, assign reviewers, process

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<sup>1</sup><http://2017.foss4g.org/>

<sup>2</sup>OSGeo Journal Volume 14, available at <https://journal.osgeo.org/index.php/journal/issue/viewIssue/35/6>

<sup>3</sup><https://journal.osgeo.org/index.php/journal/issue/view/33/showToc>

<sup>4</sup><http://www.meci.co.kr/societyevent/FOSS4G2015/download/FOSS4G%20PROCEEDINGS%20ver2.pdf>

<sup>5</sup><http://2017.foss4g.org/program/academic-review/>

<sup>6</sup>The papers are published in this volume. The posters are available in the online edition, at <http://scholarworks.umass.edu/foss4g/vol17/iss1>

<sup>7</sup><https://journal.osgeo.org/index.php/journal>

<sup>8</sup><https://www.library.umass.edu/locations/sc/>

<sup>9</sup><http://scholarworks.umass.edu/foss4g>

reviews, communicate to authors, and, ultimately, produce the online proceedings that can be made available both through the OSGeo Journal<sup>10</sup> and through this new FOSS4G Proceedings portal<sup>9</sup>. The benefit of the latter is that the proceedings metadata are automatically entered into a wide variety of library databases, making them much more easily discovered by people using library database search systems. Importantly, we have developed this system not only to support our work for this Proceedings, but with the hope that academic track editors of future FOSS4G regional and global conferences will utilize this free - as in cost - system made available by the University of Massachusetts Amherst.

We need to conclude this introduction by extending our sincere thanks to the paper and poster authors, and the extremely responsive Academic Committee<sup>11</sup> who took their time to provide the authors with reactions and suggested improvements to draft paper submissions. We also need to thank FOSS4G conference Operations Coordinator Ashley Tardiff for her help in the review process, and to Aurora Arder of bepress and University of Massachusetts Librarian Erin Jerome for their help in setting up the review and publishing Scholarworks infrastructure<sup>9</sup>, and to the University of Massachusetts Amherst Libraries for provision and support of this system, now and into the future.

We hope readers enjoy these proceedings, and are inspired to continue to build and grow the academic program generally, and work to develop standard academic sub-tracks such as Geospatial Modeling, Spatial Database research, Geovisualization, and Environmental Science Applications in FOSS4G conferences in the future. We also hope that future editors of regional and global FOSS4G conferences will take advantage of the review and publishing system we have introduced<sup>9</sup>. Future editors should contact editor Charlie Schweik<sup>12</sup> for instructions and access.

Sincerely,

Charlie Schweik  
Mohammed Zia  
Andy Anderson  
FOSS4G Academic Committee Co-chairs and Proceedings Co-editors

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<sup>10</sup><https://journal.osgeo.org/index.php/journal>

<sup>11</sup>[https://wiki.osgeo.org/wiki/FOSS4G\\_2017#Academic\\_Committee](https://wiki.osgeo.org/wiki/FOSS4G_2017#Academic_Committee)

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