

Einstein Toolkit: Application for Working Group

Type: Working Group

Title: Education and Outreach

Lead(s): TBD

Initial Members:

- Gabrielle Allen <gdallen@illinois.edu>
- Matt Corne
- Zach Etienne <zachetie@gmail.com>
- Deborah Ferguson
- Karan Jani
- Qian Zhang
- Will Wills
- Maria Hamilton (babiuc@marshall.edu)
- Helvi Witek (helvi.witek@kcl.ac.uk)

Funding: NSF SI2 grant (Manuela, [Gabrielle]), NCSA (Undergraduate student Summer 2018)

Background: This working group will address the following goals for the Einstein Toolkit:

- Expand our reach: Provide the tools and community to encourage and support new and diverse researchers in computational relativistic astrophysics
- Provide Learning Materials: Establish a teaching resource bank in the Einstein Toolkit
- Provide Scientific Outreach: Coordinate and track outreach in computational relativistic astrophysics to other science communities, K-12 and the public

Activities: Activities undertaken through this working group include:

- Include, support and track Outreach and Education goals of the NSF SI2 award and facilitate the development, support and impact of outreach and education activities through other Einstein Toolkit funded projects
- Coordinate and help support pedagogical activities of the Einstein Toolkit such as instruction modules, summer schools, tutorials, involvement in K-12/informal learning
- Identify and track relevant metrics for education and outreach
- Provide a forum and webpage to discuss, collect and promote education and outreach activities undertaken by the Einstein Toolkit Community including
- Provide and maintain a communications plan for the Einstein Toolkit

Milestones: Include milestones with dates for the group which will be used to track progress.

- July 1 2018: Initial list of activities, milestones and deliverables collected and discussed at the Spring 2018 Einstein Toolkit Meeting

- During SI2 Project: Modules from teaching resource bank will be used at RIT and Georgia Tech

Deliverables: Include deliverables for the development group or working group with dates (e.g. beta releases, full releases, documentation, workshops, web pages created, etc)

- SI2 Deliverable: Educational modules including lecture notes and quizzes e.g. numerical solution of PDEs, stability/convergence, automated code generation used for instruction and publically available
- SI2 Deliverable: Recorded lectures on gravitational physics and astrophysics topics using the Einstein Toolkit
- SI2 Deliverable: Einstein Toolkit Apps for K12 students

Engagement:

- Need to set up a mail list?
 - People seemed interested to have monthly phone calls
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Notes from June 2018 Meeting

- Who are we targeting? Main concern is
 - Postdoc level researchers who are doing science
 - Undergraduates -- new students who have wildly different background, expertise and experiences
- New user issues
 - Compiling, particularly on laptops (e.g. Windows, Mac), and clusters which are not already supported (and may have varying levels of admin support)
 - How to get an initial parameter file and understand the core parameters and how to make changes
 - Would be good to have more tutorials, eg. how about video lectures? (like LOSC): <https://losc.ligo.org/s/workshop1/course.html>
 - Have an FAQ, and edit web pages to collect all information together
 - Provide compute resources for new users to experiment with
- Ideas and questions
 - Hesitance of people to contact mail list or answer questions on list
 - Reward undergraduates for improving tutorial and documentation

