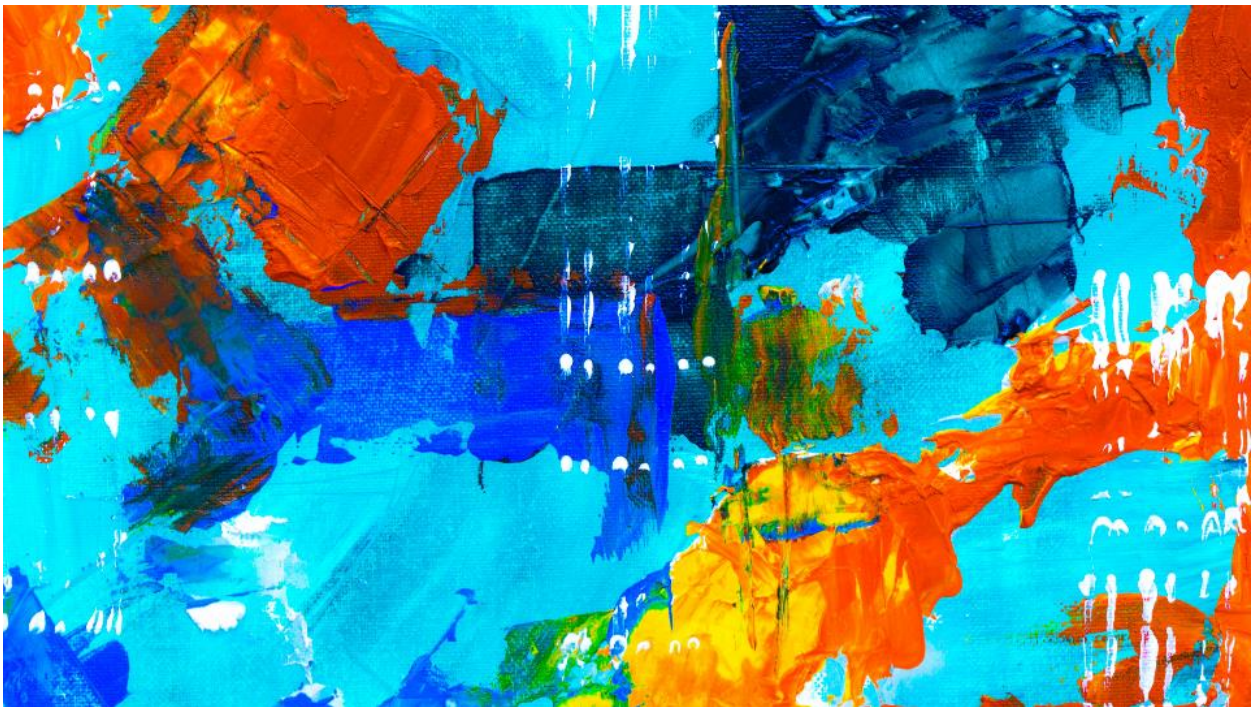
PDF Annotation and Data Harmonization (PANDHA)

September 2021
Version 1.2



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Document Revision

Date	Version Number	Document Changes
01/05/2021	1.0	Initial draft
07/20/2021	1.1	Updated to beta PANDHA V1
09/29/2021	1.2	Update to beta PANDHA V1.0.2

1 Installation

1.1 Scope and Purpose

The purpose of this project is to further the research and development of tools that NCEA can use in their creation of machine-readable datasets and machine learning research. This effort consists of the following objectives:

- Research and develop software for NCEA that provides the ability to annotate scientific publications for use in machine learning algorithms. This software should be able to accept a list of tags provided by NCEA, allow the user to apply these tags to PDF documents in a web interface, and then extract out the information needed in machine-readable formats that can be used for machine learning.

1.2 Source Code Access

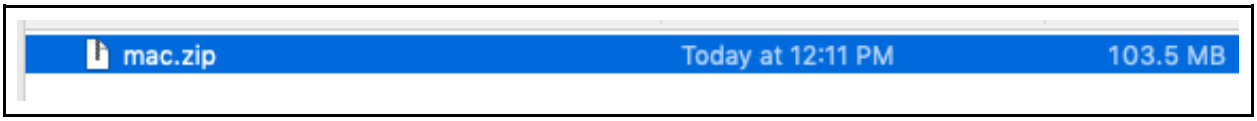
This describes the process of accessing the source code.

1. https://github.com/USEPA/pdf-data-extraction

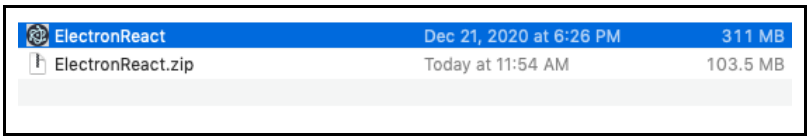
1.2 Installation MacOSX * need to work out zip issue

1. Download latest version from

2. Double click ‘mac.zip’ to unzip the file.



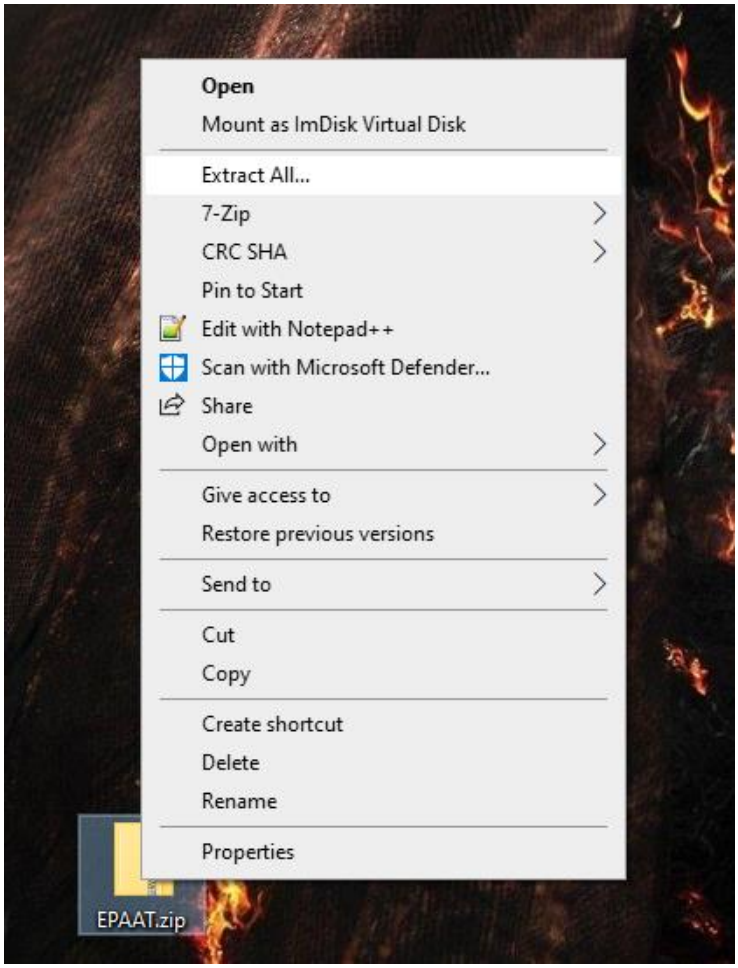
3. Double click ‘ElectronReact’ to launch the application.



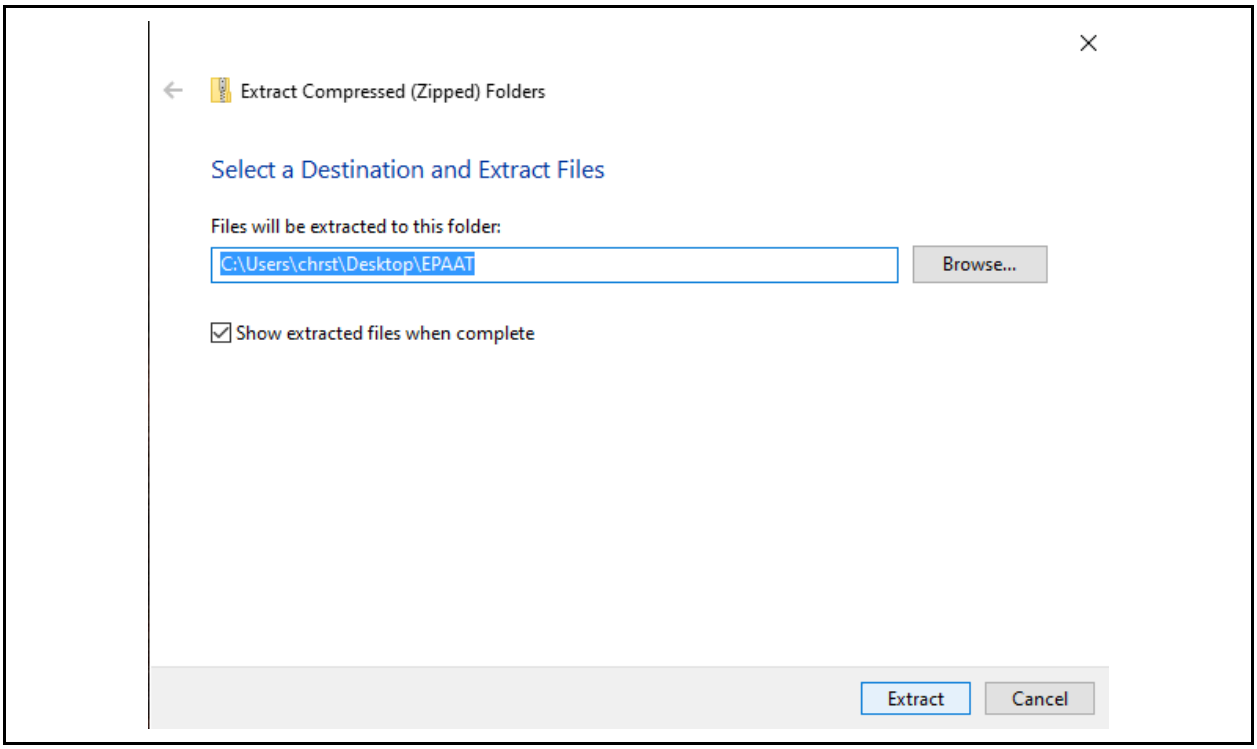
1.3 Installation Windows

1. Download latest version from (PANDHA_1.0.2)
https://usepa.sharepoint.com/sites/DOEORNLCPAD/Shared%20Documents/General/Annotation%20Tool%20Beta/Windows

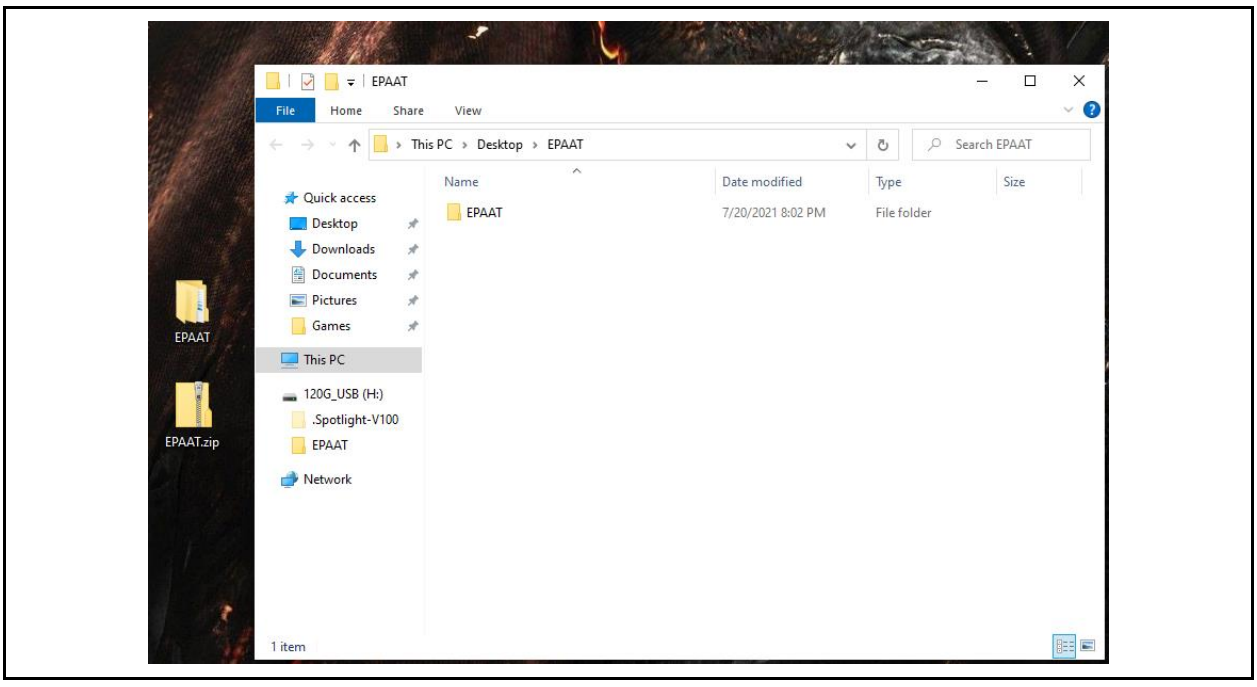
2. Right click ‘Windows.zip’ and select ‘Extract All’



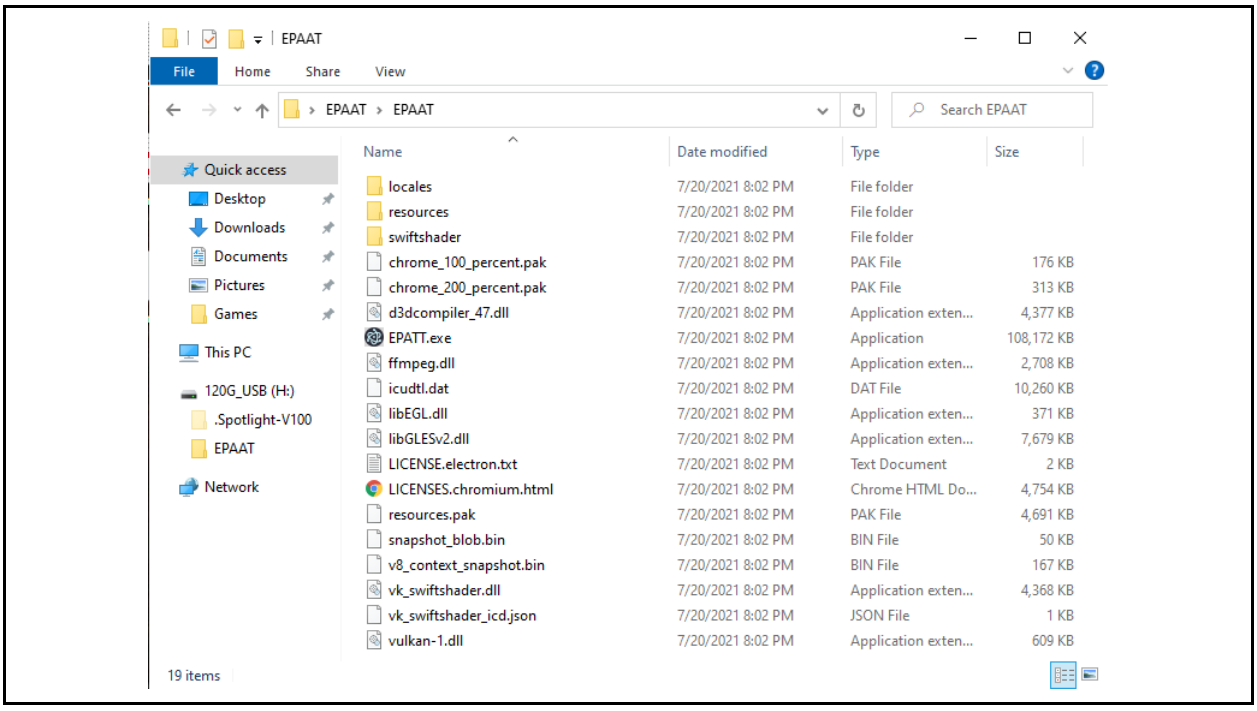
3. Select location and hit *Extract*



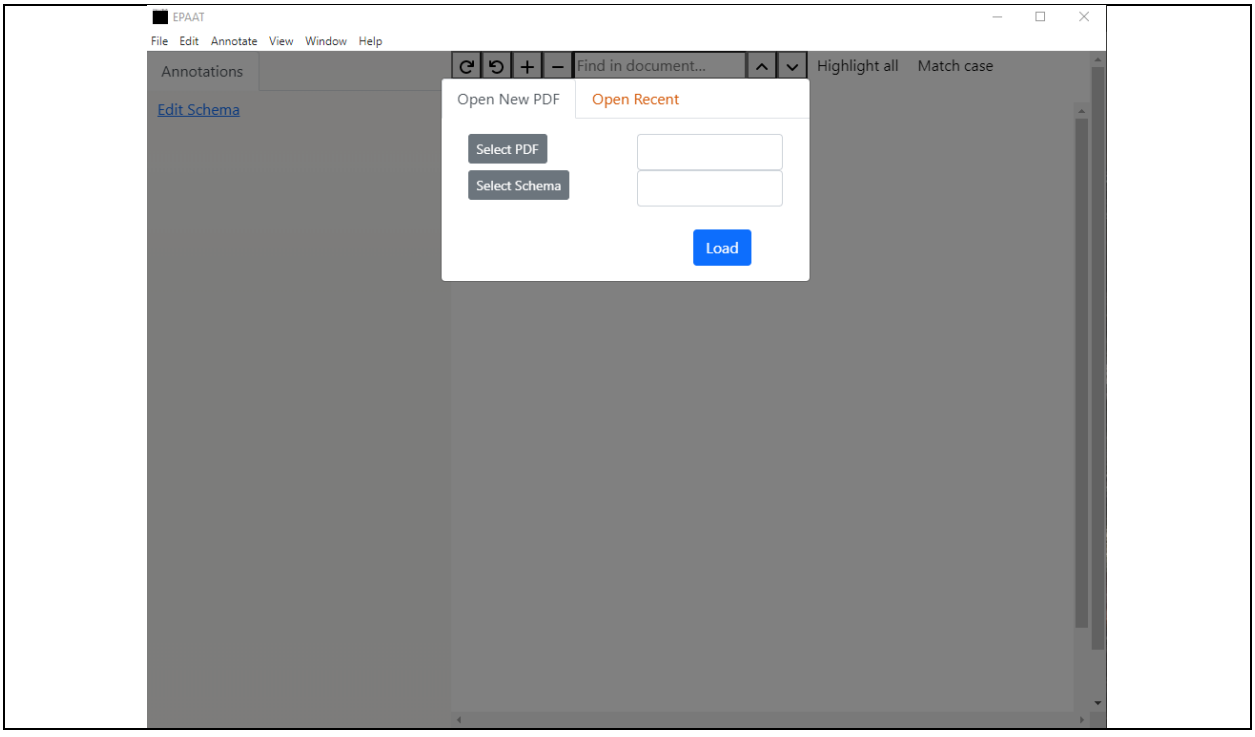
4. From the extracted location double click the *EPAAT* Folder



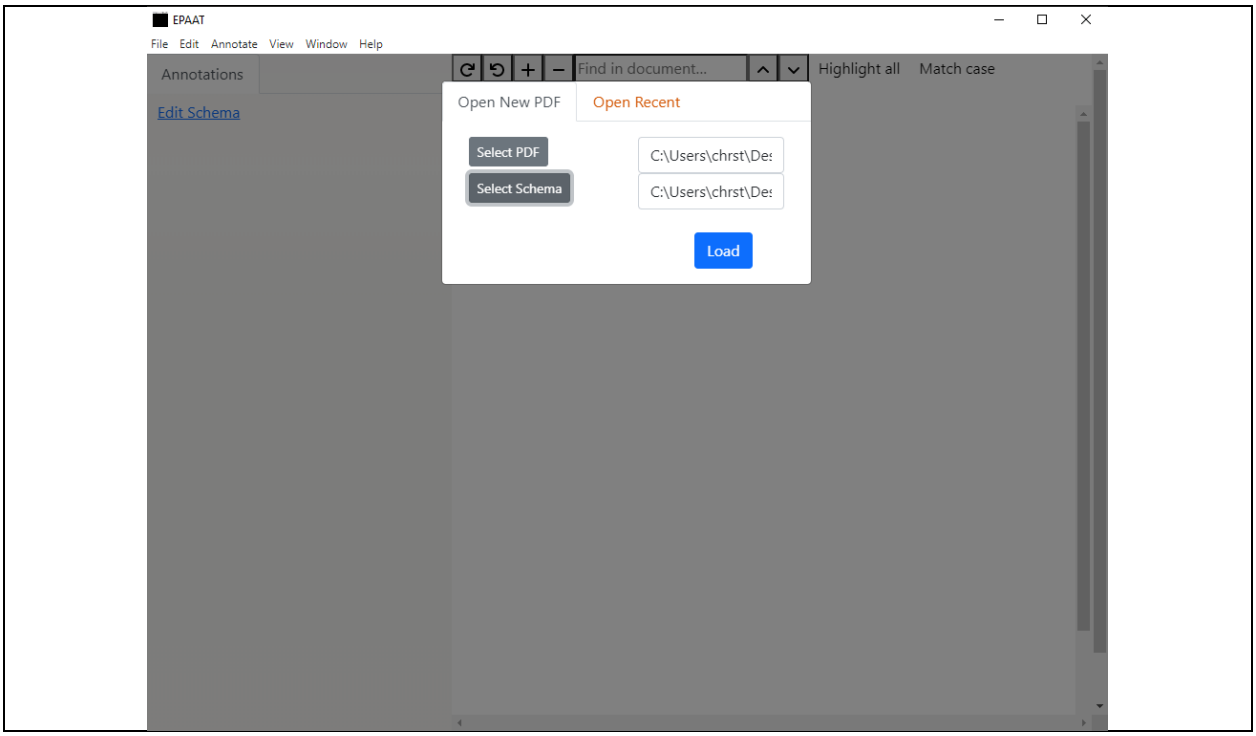
5. Double click *EPAAT*



6. Double click *EPATT.exe* to start the application



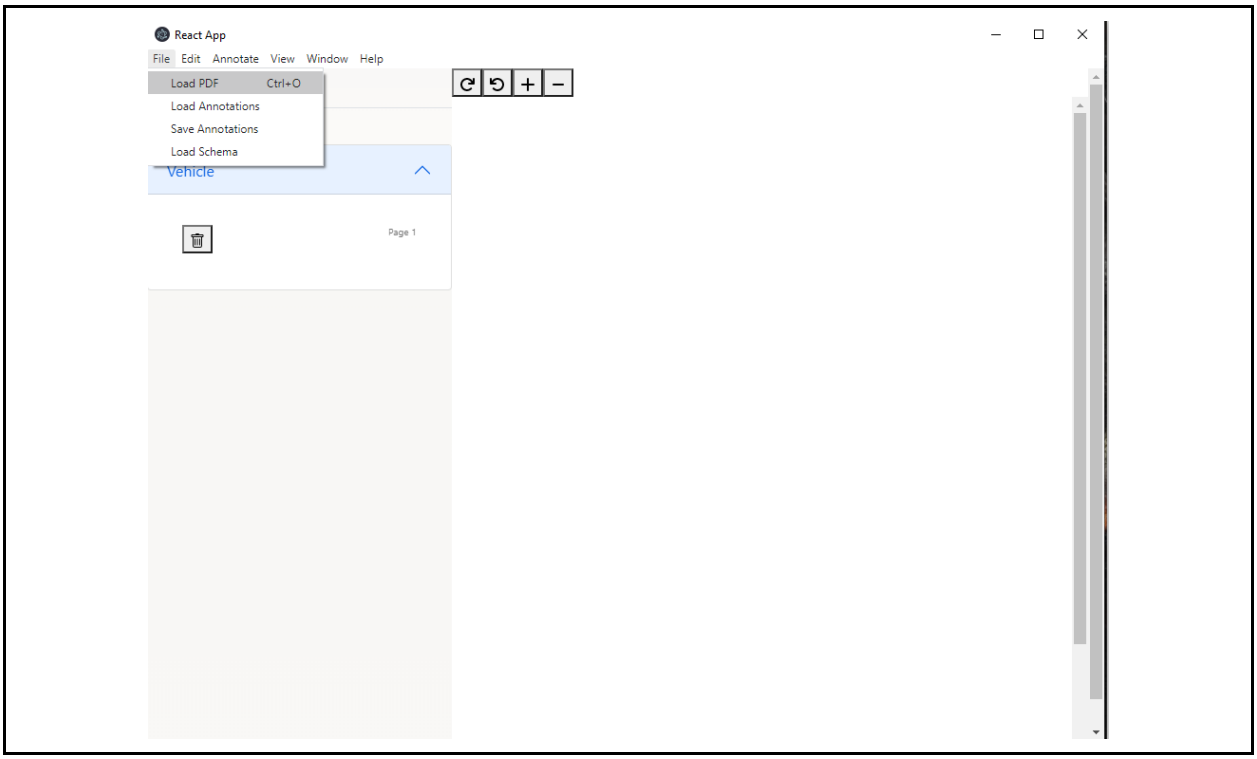
7. Select the PDF and Schema (schema.json is including in the installation folder) and click *Load*



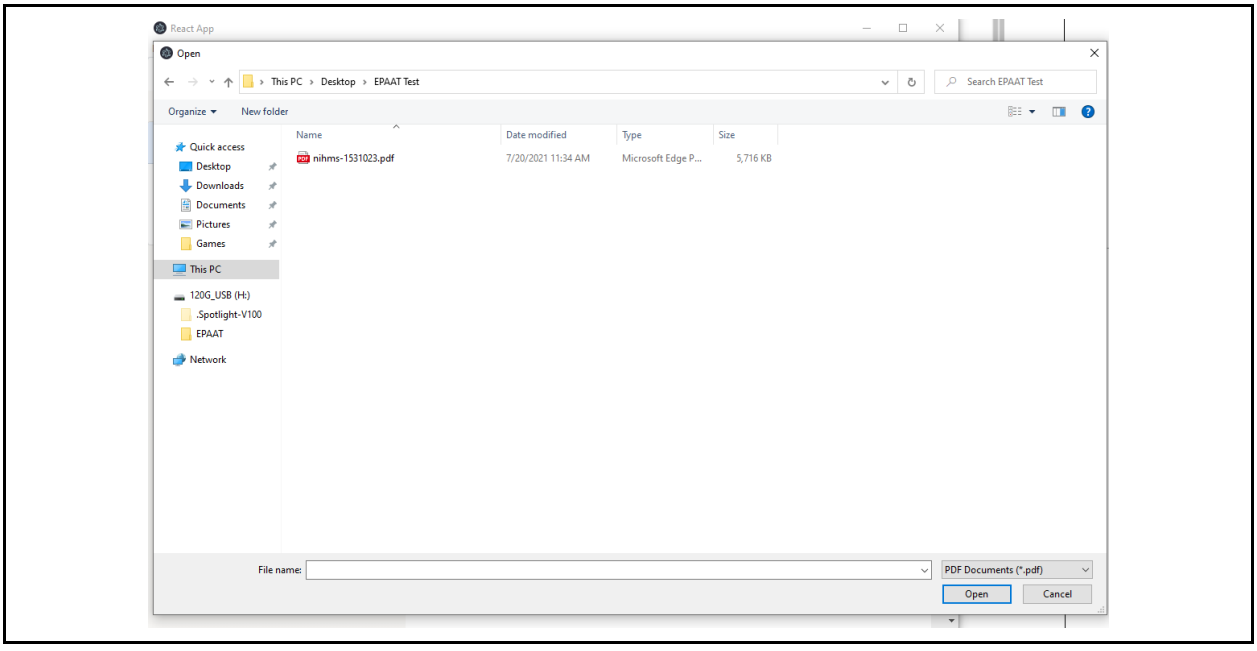
2 Application

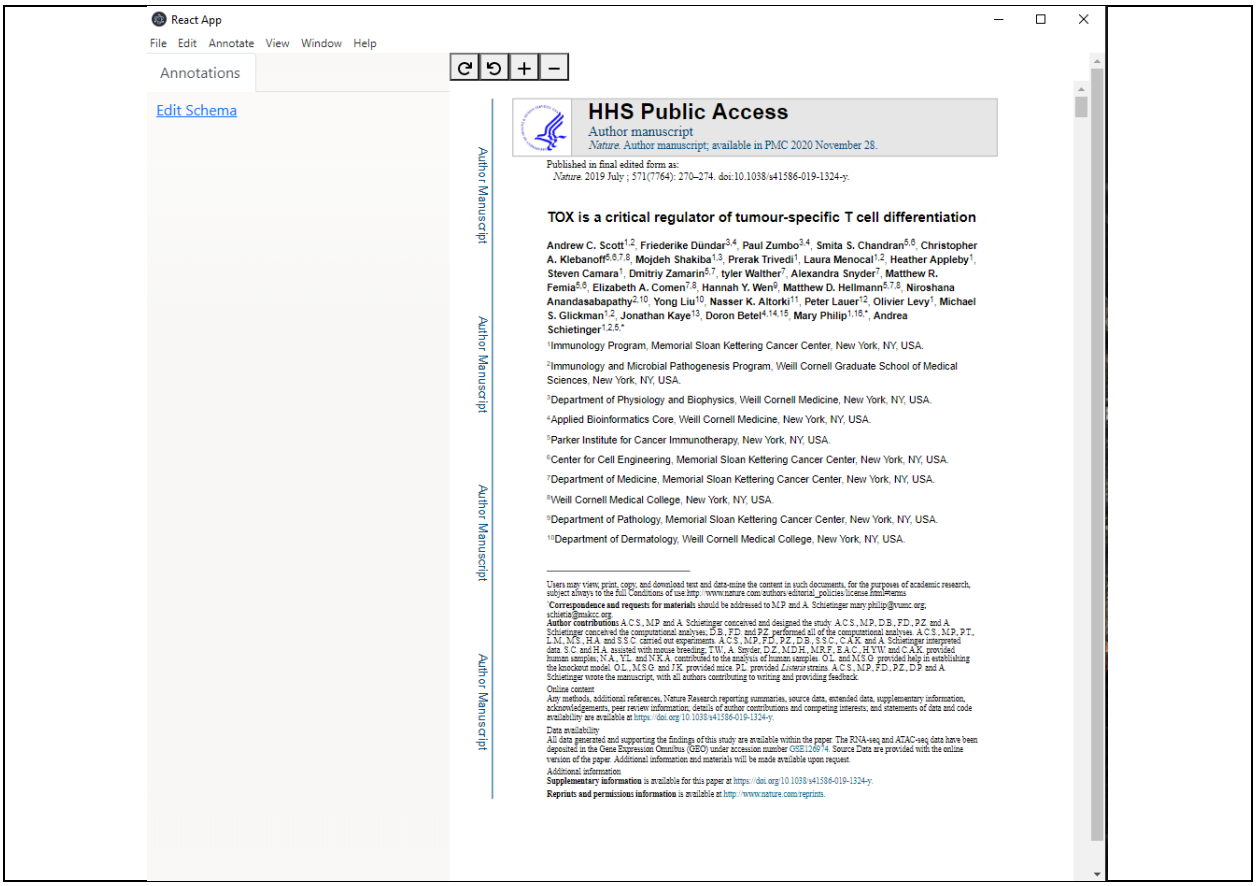
2.0 Load PDF

1. Click *File* in the menu bar and select *Load PDF*.



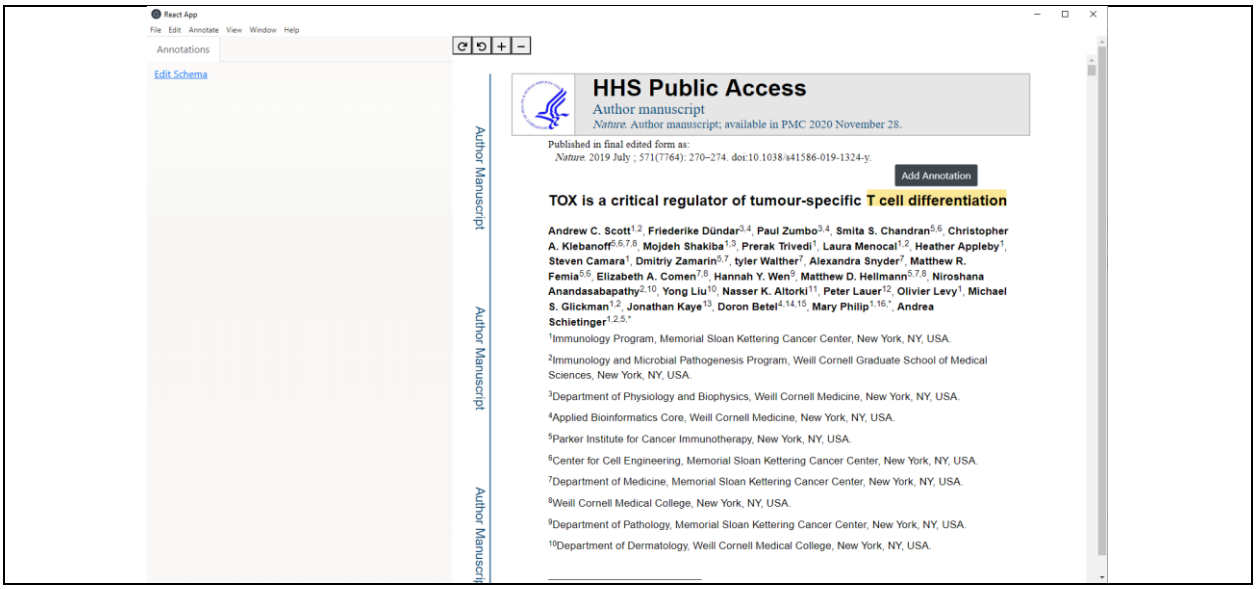
2. Select the PDF file from your computer.



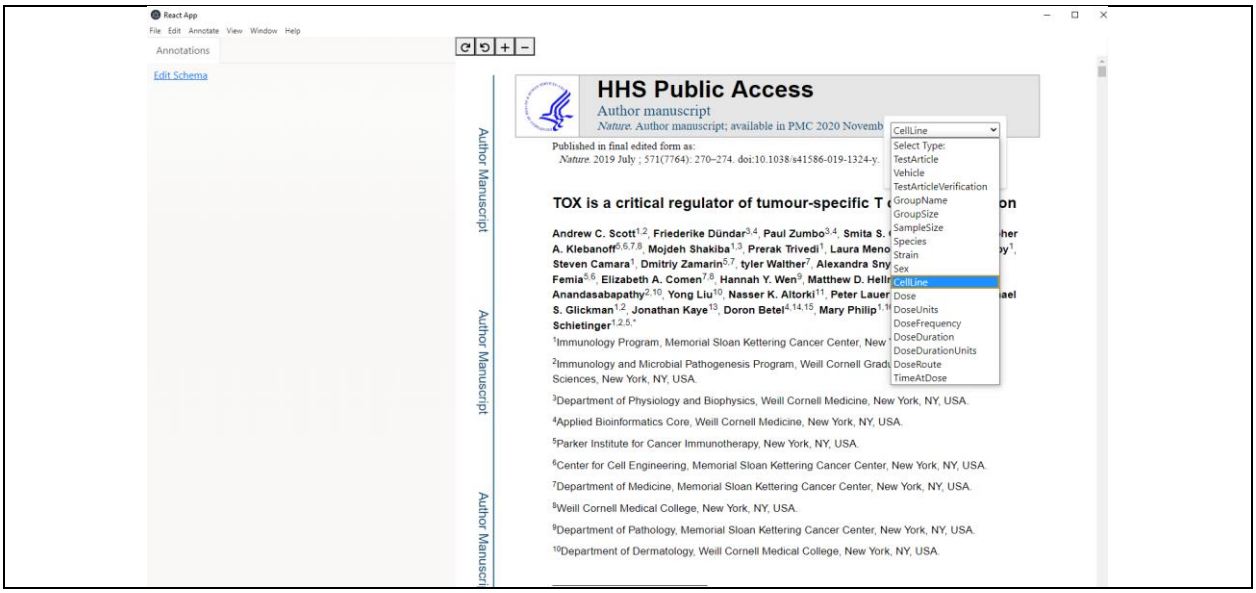


2.1 Annotate PDF

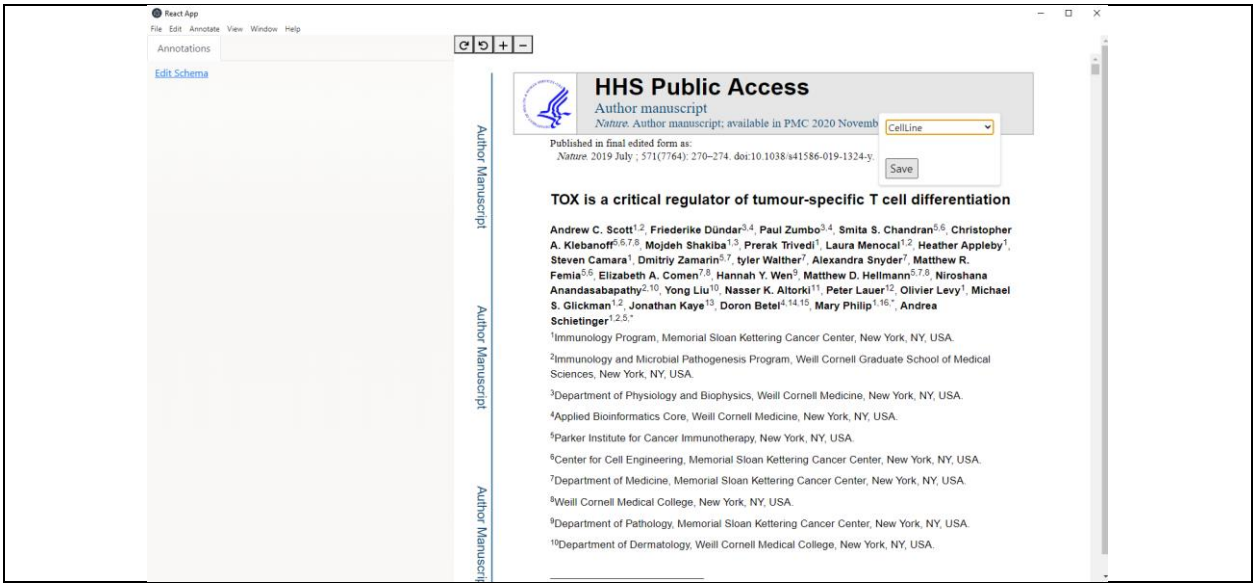
1. Highlight text you wish to annotate and select *Add Annotation*.

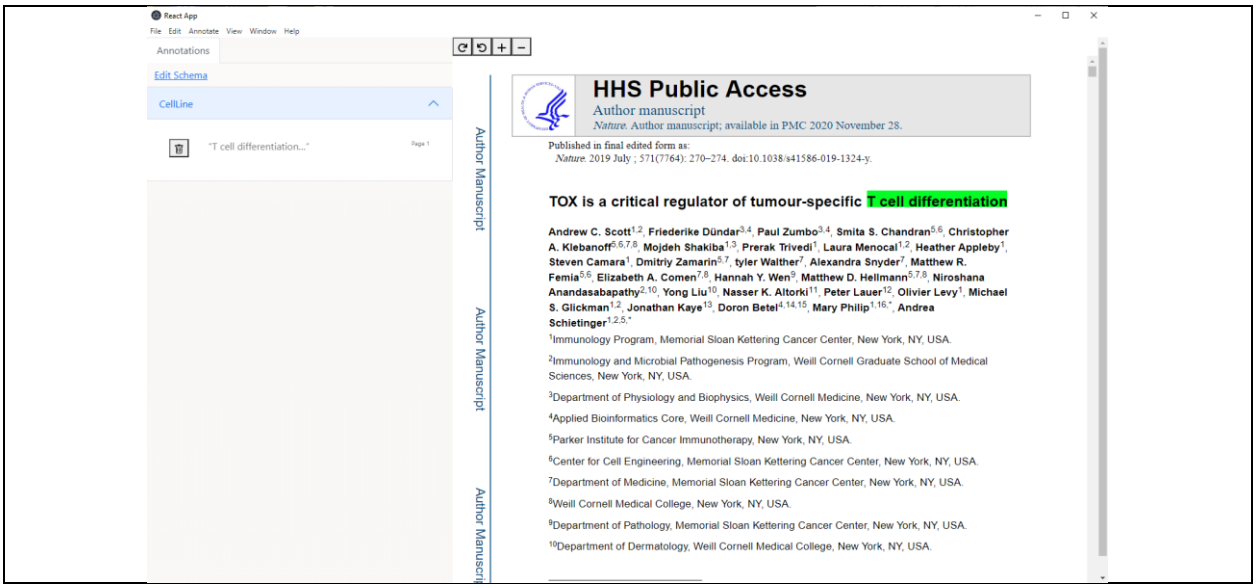


2. Select the annotation type.



3. Hit save

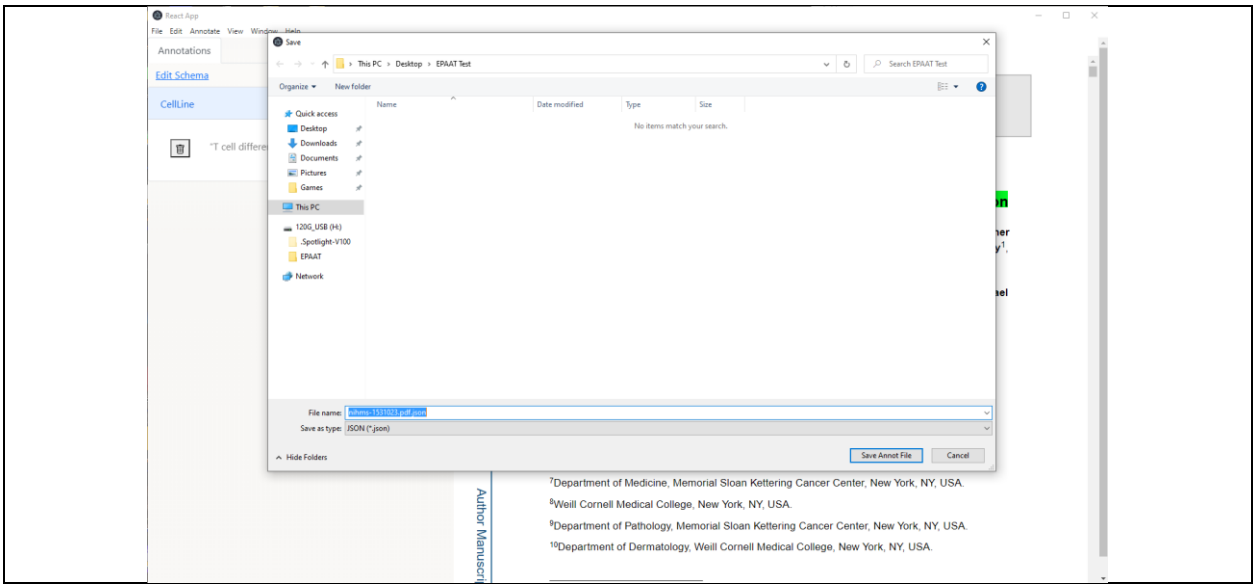




2.2 Save Annotations

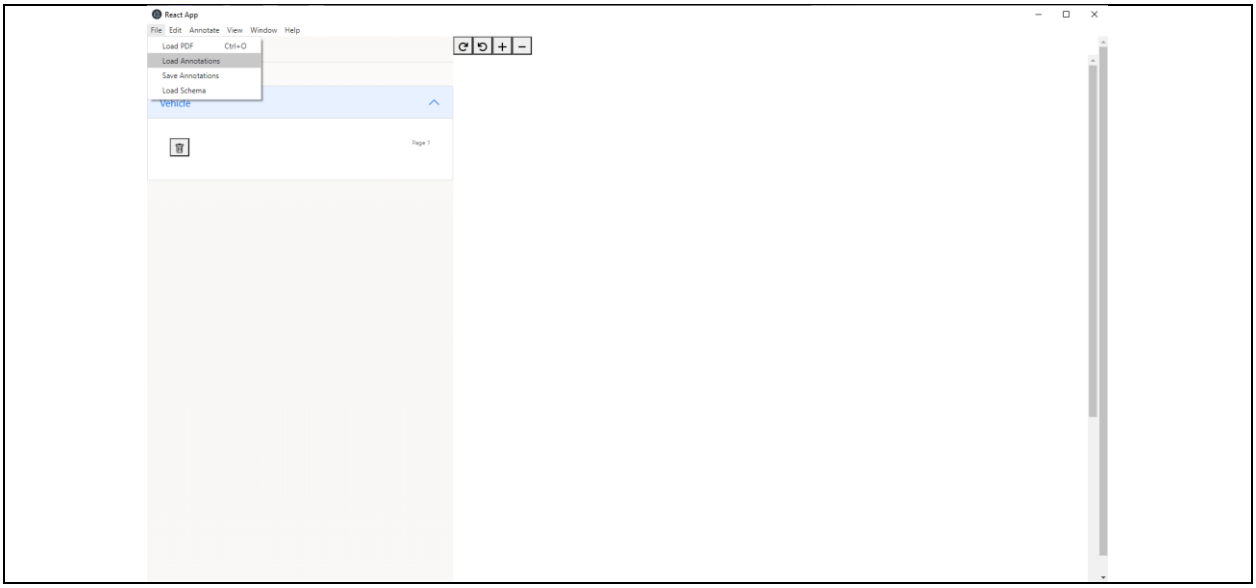
1. Click *File* in the menu bar and select *Save Annotations*.

2. Select a save location on your computer and click *Save Annot File*.

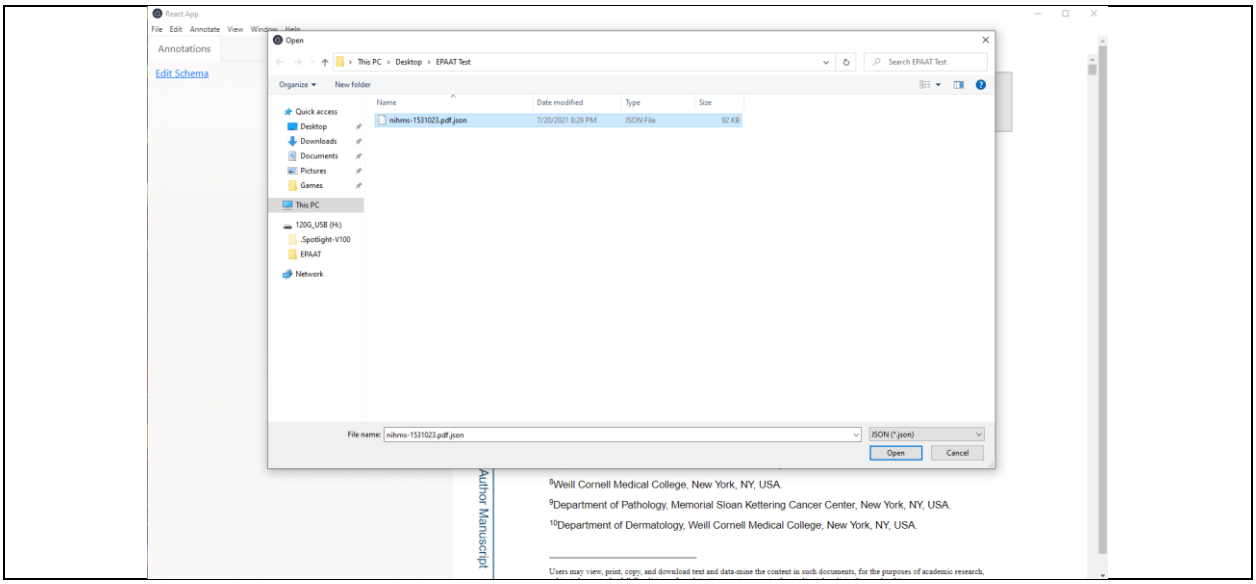


2.3 Load Annotations

1. Click *File* in the menu bar and select *Load Annotations*.



2. Select an annotation file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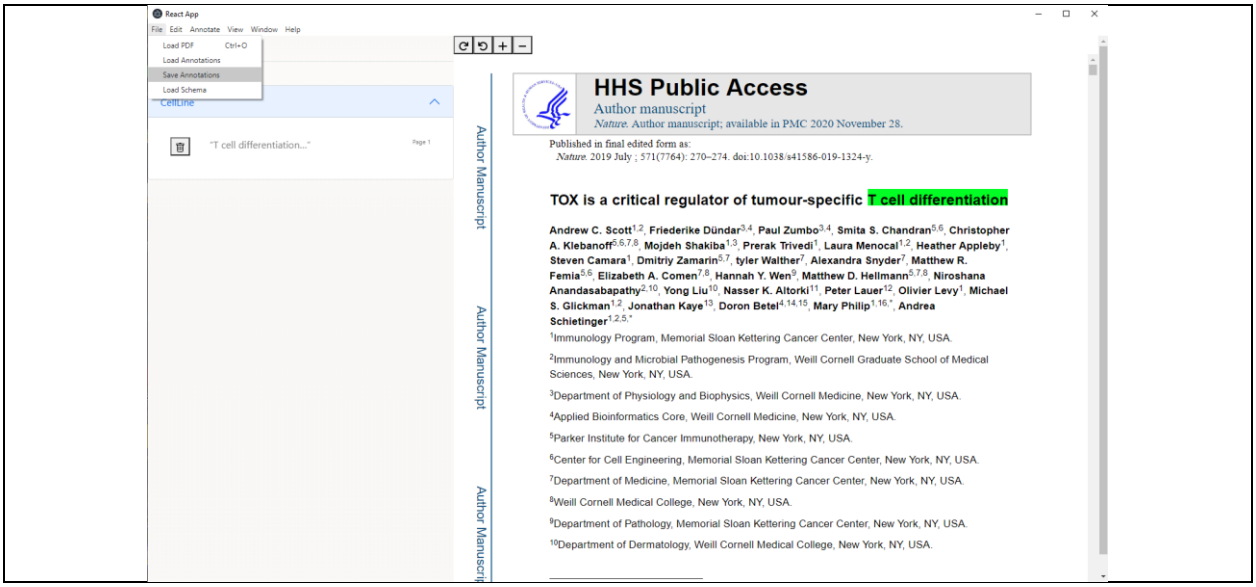
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TOX is a critical regulator of tumour-specific T cell differentiation
Andrew C. Scott[1,2], Friederike Dündar[3,4], Paul Zumbo[3,4], Smita S. Chandran[5,6], Christopher A. Klebanoff[5,6,7,8], Mojdeh Shakiba[1,3], Prerak Trivedi[1], Laura Menocal[1,2], Heather Appleby[1], Steven Camara[1], Dmitriy Zamarin[5,7], tyler Walther[7], Alexandra Snyder[7], Matthew R. Femia[5,6], Elizabeth A. Comen[7,8], Hannah Y. Wen[9], Matthew D. Hellmann[5,7,8], Niroshana Anandasabapathy[2,10], Yong Liu[10], Nasser K. Altorki[11], Peter Lauer[12], Olivier Levy[1], Michael S. Glickman[1,2], Jonathan Kaye[13], Doron Betel[4,14,15], Mary Philip[1,16,*], Andrea Schietinger[1,2,5,*]
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