SlicerAutoscoperM ASB 2025

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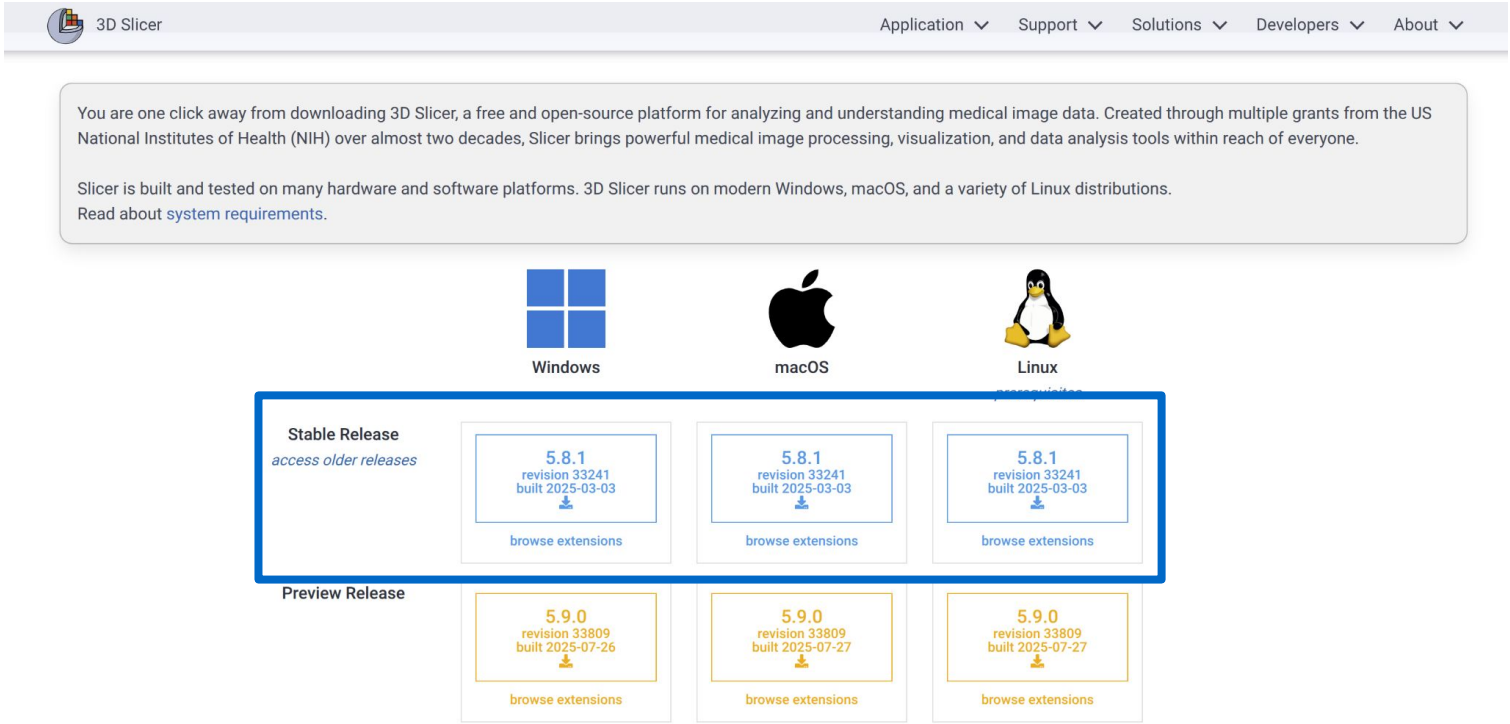
Installation of Slicer & SlicerAutoscoperM

Download Slicer from download.slicer.org



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Installing SlicerAutoscoperM from the Slicer Extensions Manager

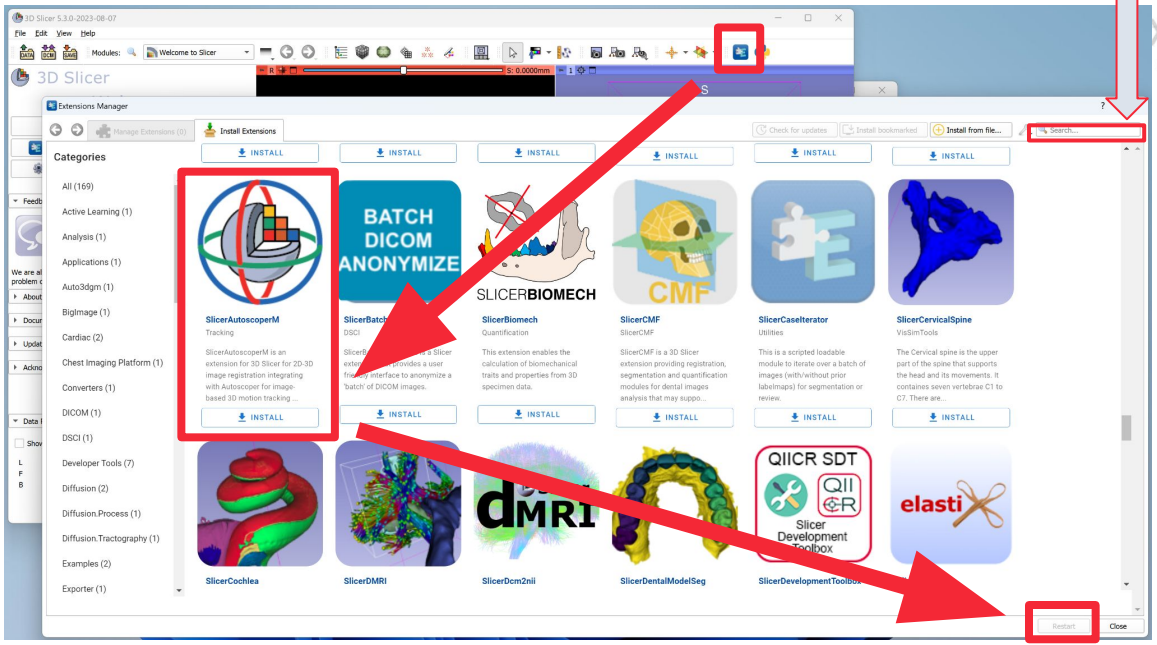
tip
type ‘auto’ in the search bar

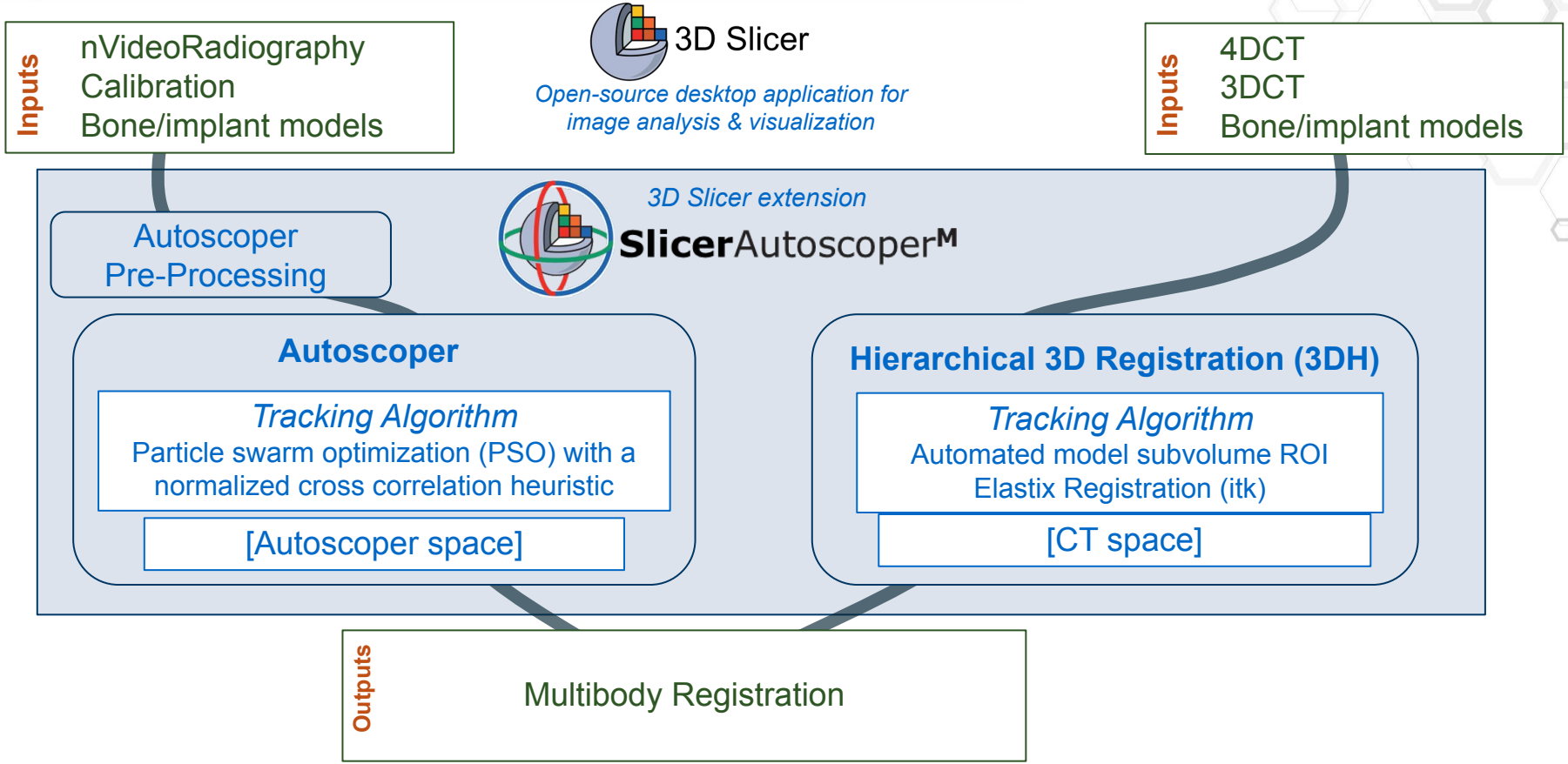
After starting Slicer

(1) Open Extensions Manager

(2) Install SlicerAutoscoperM

(3) Restart Slicer




Inputs
nVideoRadiography
Calibration
Bone/implant models
3D Slicer
Open-source desktop application for image analysis & visualization
Inputs
4DCT
3DCT
Bone/implant models
3D Slicer extension
SlicerAutoscoperM
Autoscoper Pre-Processing
Autoscoper
Tracking Algorithm
Particle swarm optimization (PSO) with a normalized cross correlation heuristic
[Autoscoper space]
Hierarchical 3D Registration (3DH)
Tracking Algorithm
Automated model subvolume ROI
Elastix Registration (itk)
[CT space]
Outputs
Multibody Registration

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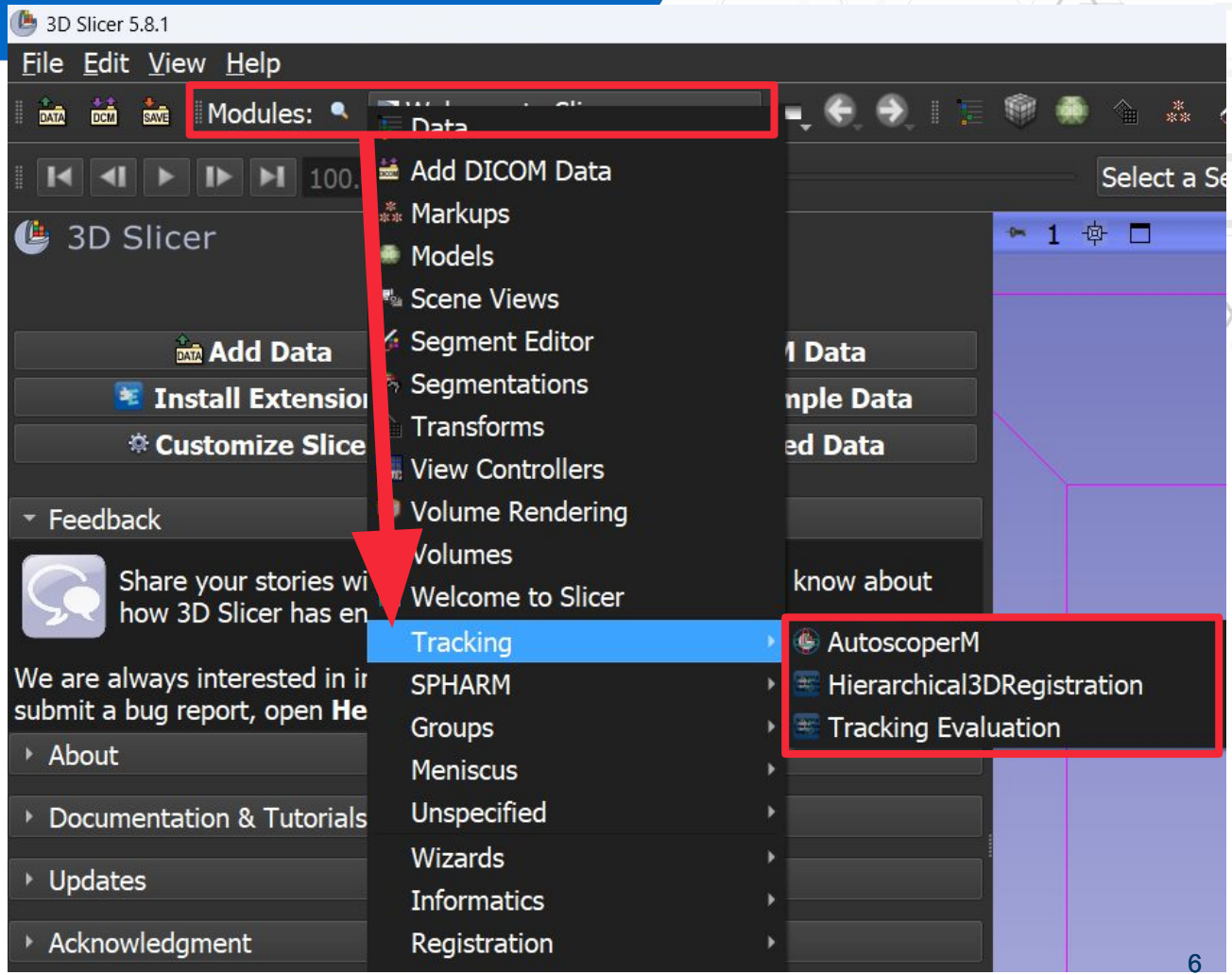
SlicerAutoscoperM

After restarting, navigate to the Tracking category in the Module dropdown:



SlicerAutoscoperM

AutoscoperM, PreProcessing | Hierarchical 3D Registration

- Getting Started
- Tutorials
- Get Help
- Discourse category (Slicer forum)
- Homepage

- Slicer Documentation

- Brown Biomechanics GitHub

For more details:
https://autoscoper.readthedocs.io
https://slicer.readthedocs.io

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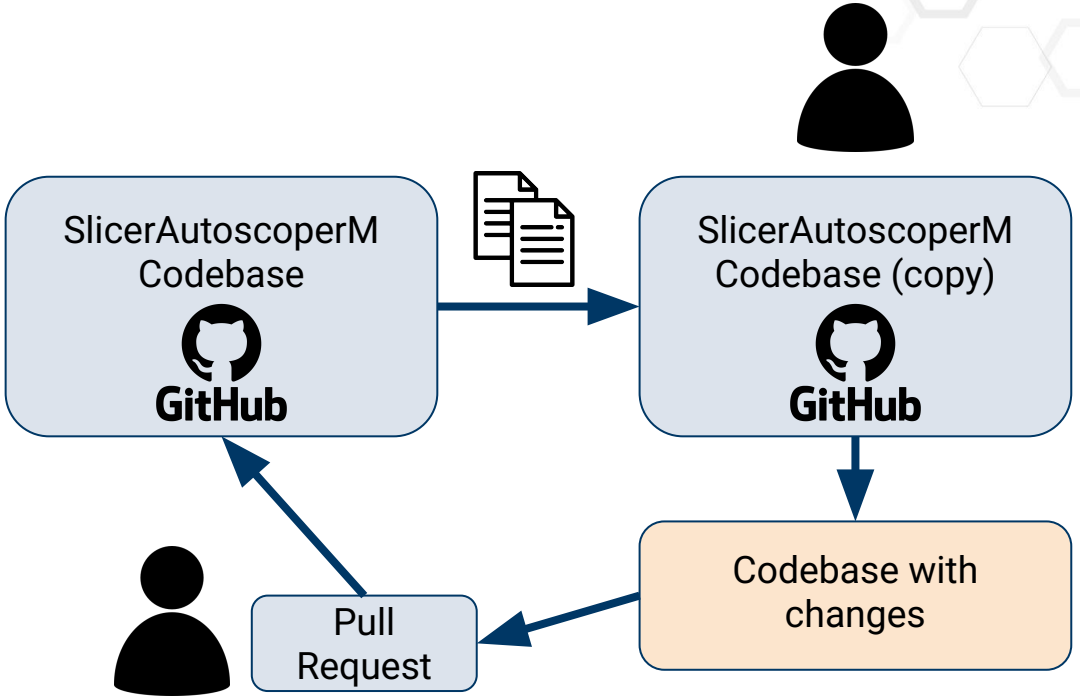
Contributing guidelines

1. Fork and clone the Git repository
2. Create a branch
3. Push the branch to your GitHub fork
4. Create a Pull Request



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[Fork & pull model collaborative development]

Working with us

- **Training:** Interactive sessions with our engineers, office hours, workshops, seminars
- **Support:** Work with our team, Q&A, small prototypes
- **Development:** Create your own solution, open source or otherwise, advanced technical capabilities, many contracting options available
- **Grant collaboration:** Strong track record of successful collaborative partnerships

Achievements

- **Multi-Institution/Industry Partner 3-year award (NIH R01AR078924)**
- ***Milestones Achieved:***
  - *An Accuracy Assessment of SlicerAutoscoper^{M} – Software for Tracking Skeletal Structures in Multi-plane Videoradiography Datasets*

    (J. Biomech, August 2025)
  - **Dedicated module: Registration 3DCT and 4DCT**
  - **Comprehensive documentation, online tutorials, and live discourse**

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Achievements

Milestones Achieved:

Autoscoper

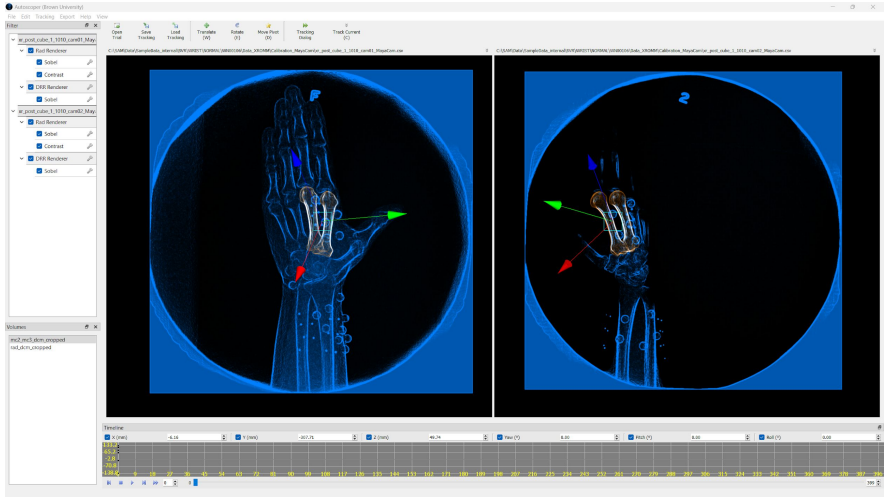
- Modernize CUDA integration (OpenCl Option)
- Bidirectional region bound clip for isolated NCC calculator
- Sample data (knee,wrist, ankle)

PreProcessing

- Auto Segmentation option
- Cropped PV transform file generation

Py Autoscoper

- Python socket script API



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Future Directions

- **Call for Collaboration, Building a community of researchers**

SAM Questionnaire for prospective collaborators

Scan this QR code to fill out the questionnaire. Thank You!

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How to get in touch

- **Discourse forum**
- **Contact form**

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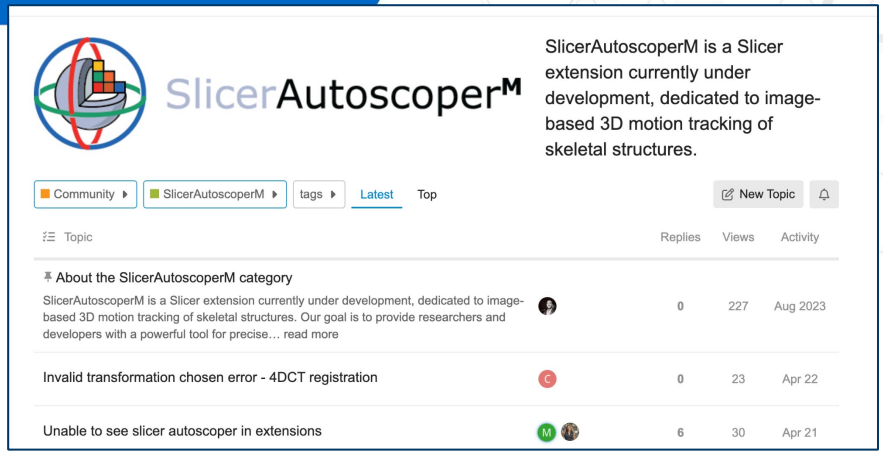

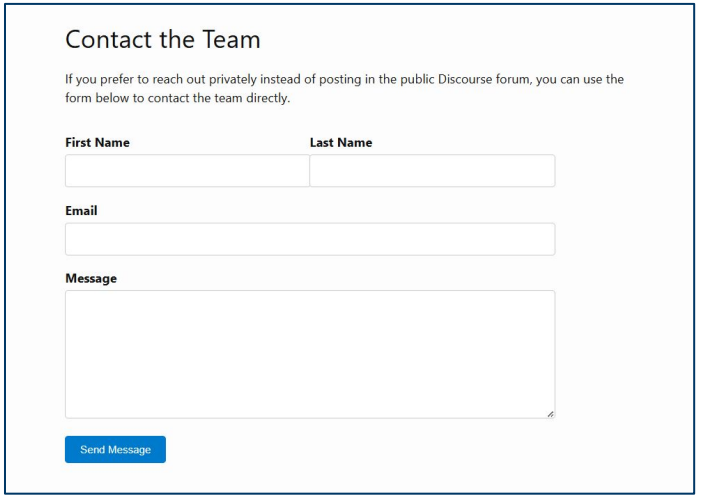

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