



NA-MIC

National Alliance for Medical Image Computing

<http://na-mic.org>

Core 1b – Engineering Prospective

**“Into the blue again/after the money's gone...”
– Talking Heads**

Steve Pieper

Isomics



NA-MIC Engineering is Dead

Long Live NA-MIC Engineering!

- **Dozens of Projects Rely on 3D Slicer and the NA-MIC Kit**
- **Funding from NIH, NSF, DoD**
- **Commercial Use**
- **Some Trends**



Slicer-Centric Funded Efforts

- **Neuroimage Analysis Center (NAC)**
 - P41 Funded through 2018
 - Kikinis, Pieper, Wells, Westin, Golland, Pujol, Kapur, Miller, Tannenbaum
- **National Center for Image-Guided Therapy (NCIGT)**
 - P41 Funded through 2015
 - Kapur, Hata, Tokuda, Jagadeesan, Wells, Toews...
- **Quantitative Image Informatics for Cancer Research (QIICR)**
 - U24 Funded through 2018
 - Kikinis, Pieper, Fedorov, Blezek





Core Toolkit Support Funded Efforts

- **Insight Toolkit Software Maintenance**
 - Contract Funded through 2018
 - ITK Community / Kitware, McCormick...
- **VTK Software Maintenance**
 - R01 Funded through 2018
 - Kitware, Fillion-Robin, Aylward, Finet
- **mi2b2**
 - R01 Funded through 2016
 - Pieper, Gollub, Haehn

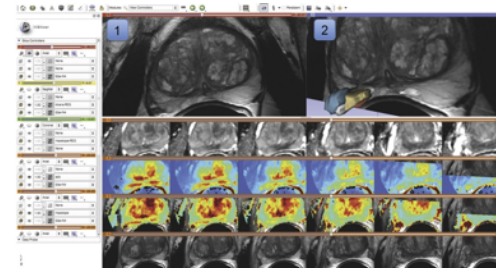
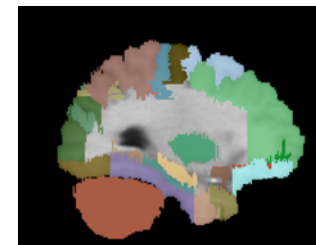
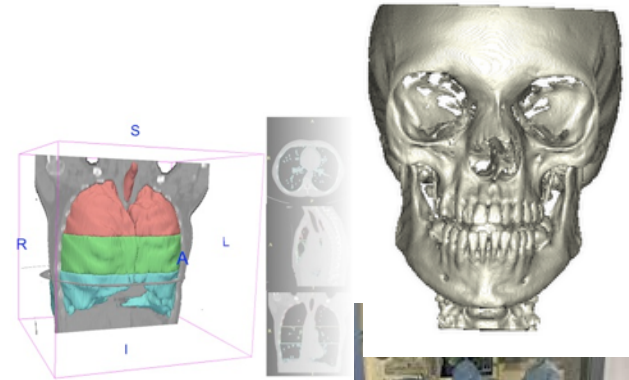


Slice:Drop



Representative Clinical Focused Funded Efforts

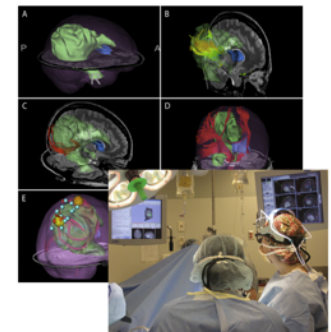
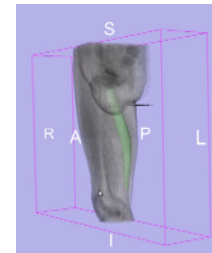
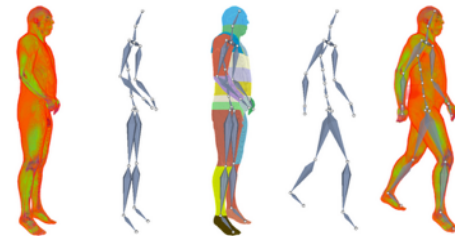
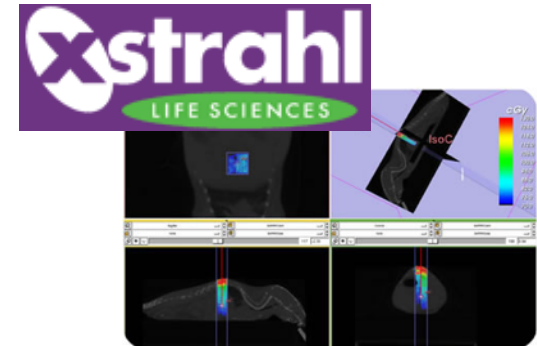
- **TMJ-OA**
 - R01 Funded through 2017
 - Cevedanes, Boen, Styner, Paniagua, Nguyen, Pieper
- **Siemens syngo.via + AMIGO**
 - Contract Funded through 2016
 - Kapur, Pieper, Jagadeesan, Fedorov, Penzkofer, Fichtinger, Lasso, Pinter
- **OCAIRO - SlicerRT**
 - Funded through 2014
 - Fichtinger, Lasso, Pinter, Wang
- **Chest Imaging Program**
 - R01 Funded through 2018
 - Estepar, Kindlmann, Ross
- **MRI Brain Measurement Tools**
 - R01 Funded through 2016
 - Shen, Miller
- **Prostate Biomarker Treatment Guidance**
 - U01 Funded through 2015
 - Fennessy, Fedorov





Representative Commercial Use

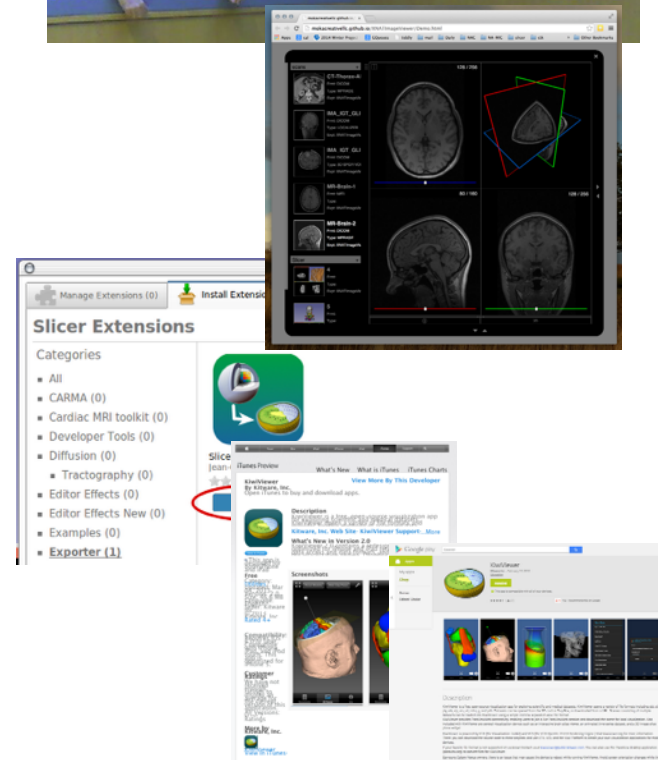
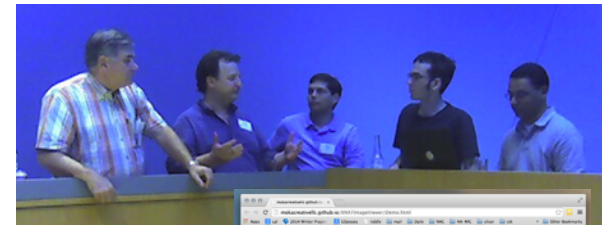
- **Xstrahl Small Animal Radiation System**
 - Spin Off from JHU, Kazanzides
- **Bender - Volumetric Pose System**
 - SBIR Kitware, Finet
- **SonoVol Ultrasound System**
 - Spin Off from UNC, Aylward
- **Brainlab OpenIGTLink Interface**
 - Technology Transfer from BWH, Tokuda, Hata
- **Novartis: Muscle Fat Analysis**
 - Clinical Trial Quantitative Imaging, Isomics, Pieper
- **GE: Intervention/Imaging Research**
 - Dozens of Projects using ITK, Slicer, Miller
- **Kitware: Liver PET/CT, Neurosurgery, Prostate**
 - Many SBIR/STTR, Aylward, Finet, Fillion-Robin





What's Next?

- **Stay True to Our Principles**
 - **Almost Fanatical Devotion to Open Source**
 - **Encourage Translation to Patient Treatments**
- **Stay Relevant (a lot happens in 10 years)**
 - **Technology Changes, We Must Too**
 - **“Web, Mobile, Social, Cloud...” buzzzz**
- **Keep Exploring**
 - **Web Tools - XTK, HTML5...**
 - **Haehn, Kumar, Hartung, Blezek, Kapalthy...**
 - **Apps**
 - **Marrion, Fillion-Robin et al**
 - **MOOCs, BarCamps, Hangouts...**
 - **Wearables, VirtualHolography, Gestural UI...**
- **Stay Active as a Community**
- **Adapt and Thrive**

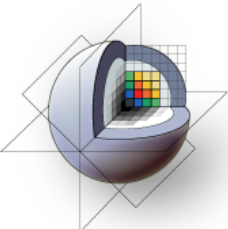




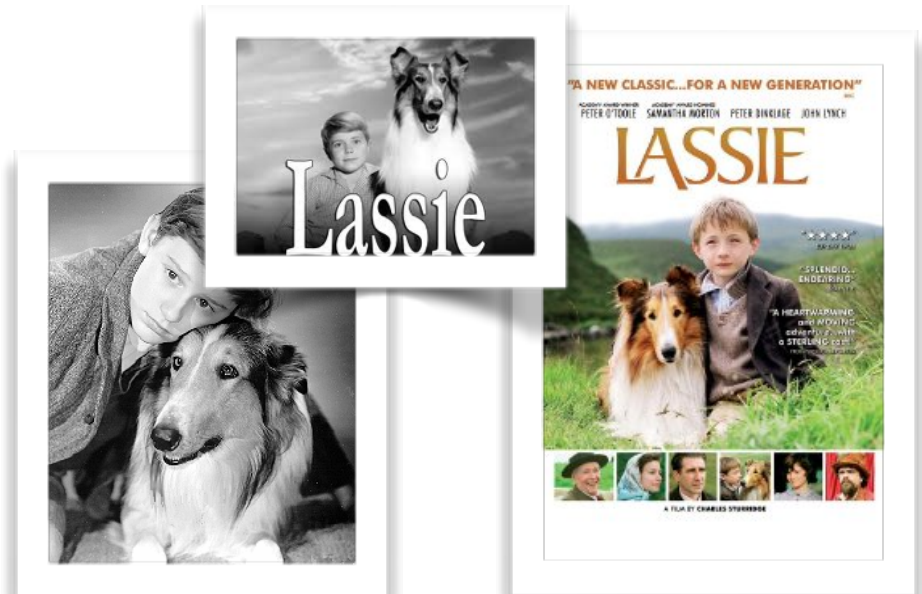
NA-MIC Kit, now and forever

2014

2024 ?



3DSlicer



They went through a lot of dogs, but they always called her Lassie.
So there will always be a "Slicer"