

NOTETAKER CHECKLIST FORM

(Complete one for each talk.)

Name: Neil Epstein Email/Phone: nepstei2@gmu.edu

Speaker's Name: Lawrence Ein

Talk Title: Jacobi-Mather multiplier ideals

Date: 05/10/2013 Time: 9:30 (am) / pm (circle one)

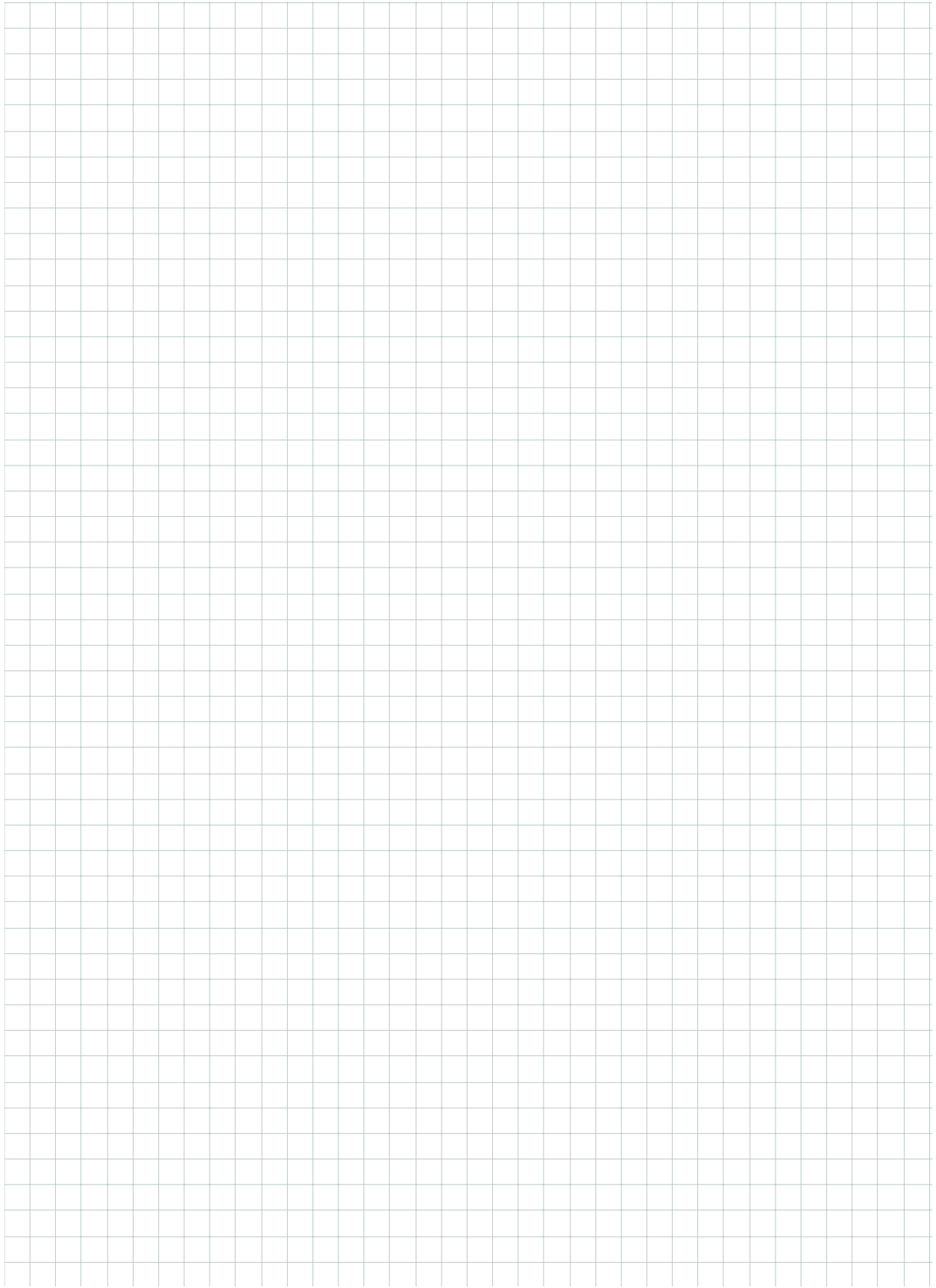
List 6-12 key words for the talk: _____

Please summarize the lecture in 5 or fewer sentences: (see abstract)

CHECK LIST

(This is **NOT** optional, we will **not pay** for **incomplete** forms)

- Introduce yourself to the speaker prior to the talk. Tell them that you will be the note taker, and that you will need to make copies of their notes and materials, if any.
- Obtain ALL presentation materials from speaker. This can be done before the talk is to begin or after the talk; please make arrangements with the speaker as to when you can do this. You may scan and send materials as a .pdf to yourself using the scanner on the 3rd floor.
 - **Computer Presentations:** Obtain a copy of their presentation
 - **Overhead:** Obtain a copy or use the originals and scan them
 - **Blackboard:** Take blackboard notes in black or blue **PEN**. We will **NOT** accept notes in pencil or in colored ink other than black or blue.
 - **Handouts:** Obtain copies of and scan all handouts
- For each talk, all materials must be saved in a single .pdf and named according to the naming convention on the "Materials Received" check list. To do this, compile all materials for a specific talk into one stack with this completed sheet on top and insert face up into the tray on the top of the scanner. Proceed to scan and email the file to yourself. Do this for the materials from each talk.
- When you have emailed all files to yourself, please save and re-name each file according to the naming convention listed below the talk title on the "Materials Received" check list.
(YYYY.MM.DD.TIME.SpeakerLastName)
- Email the re-named files to notes@msri.org with the workshop name and your name in the subject line.



Mather multiplier ideals

Lawrence Ein

University of Illinois at Chicago

I'll discuss my joint work with Shihoko Ishii and Mircea Mustata. We define a version of multiplier ideals on a variety with arbitrary singularities. We prove a relative vanishing theorem. We obtain restriction, sub-additivity and summation theorems for these ideals.

Now apply duality one more time.

$$\mathcal{O}_X \xrightarrow{\sim} Rf_* \mathcal{O}_Y$$

$$\downarrow \sim$$

$$\mathcal{O}_X$$

de Ferrnax-DeCampo
 $m/d(W, A, I_X^e) = m/d(W, X, I_X^e)$

$$\begin{array}{ccc} X & \hookrightarrow & A \\ \cup & & \uparrow \\ W & & \text{smooth} \end{array}$$

X is the only log canonical center of (X, I_X^e) . Kanno subadj X is klt.

Subadditivity theorem: $\hat{J}(Jac_X \sigma^* \mathcal{I}^t) \subset \hat{J}(\sigma^*) \cdot \hat{J}(\mathcal{I}^t)$.

Skoda-type thm: $\sigma_* \hat{J}(\sigma^{d-1}) = \hat{J}(\sigma^d)$, $\sigma_*^m \hat{J}(\sigma^{d-1}) = \hat{J}(\sigma^{m+d-1})$

\Rightarrow Urbaniak-Stokich type thm: $\overline{Jac_X \sigma^d} \subset \hat{J}(\sigma^d) = \sigma_* \hat{J}(\sigma^{d-1}) \subset \sigma_*$.

Symbolic power application: let $\{\sigma_n\}$ be a graded seq. of ideals, $\sigma_k \sigma_n \subseteq \sigma_{k+n}$.

$$\hat{J}(\|\sigma_n\|) \subseteq \left\{ \hat{J}(X, \sigma_n^p) \right\}_{p \in \mathbb{Z}^+}$$

$$\hat{J}(X, \sigma_n^p), p \text{ suff. divisible.}$$

Watabe Niu: $\mathfrak{g} \text{ codim } k, Jac_X^m \mathfrak{g}^{(km)} \subset \mathfrak{g}^m$.