Origins

FULL-TIME FACULTY:

JOE BURNS (Science)                                      FISHER HUMPHREYS (Theology)                                      ADA LONG (English)
Office: EB 119                                                  Office: HOH or Samford U                                               Office: HOH
Office Phone: 934-7895                                         Office Phone: 726-2633                                      Office Phone: 934-3228
Email: jburns@uab.edu                                             Email: fhumphr@samford.edu                                      Email: adalong@uab.edu

DAIL MULLINS (Biochemistry)                      MIKE NEILSON (Geology)                              RUSTY RUSHTON (Literature)
Office: EB 120/HOH                                         Office: CH 134                                                 Office: HOH
Office Phone: 934-8381/3228                            Office Phone: 934-5110                                   Office Phone: 934-6053
Email: drdooom@uab.edu                                         Email: mneilson@uab.edu                                         Email: wrushton@hp.uab.edu

THE FOLLOWING INDIVIDUALS WILL BE GIVING GUEST LECTURES:

George Atchley, Director of Planetarium, Samford University
Scott Brande, Associate Professor of Natural Science, UAB
Jeannette Doeller, Research Associate Professor of Biology, UAB
Michael Friedlander, Professor and Chair of Neurobiology, UAB
Perry Gerakines, Assistant Professor of Physics, UAB
David Kraus, Associate Professor of Biology, UAB
Lee Meadows, Associate Professor of Curriculum & Instruction, UAB
Jonathan Miller, Rabbi, Temple Emmanu-El
James Rachels, University Professor of Philosophy, UAB
Dennis Sansom, Professor and Chair of Philosophy, Samford University
Narain Das Saxena, Professor of Business and Finance (Ret)
Michael Sloane, Associate Professor of Psychology, UAB
TEXTS:

The following texts are available at the UAB Bookstore and Snoozy’s; you will also purchase a packet of additional reading materials during the first week of class. If you buy—or already own—editions of the texts that are different from the ones ordered for the class, you may have trouble following references to page numbers during the lectures. Books marked with an asterisk (*) are required summer reading (see below).

*Samuel Beckett, *Waiting for Godot*
*Bertolt Brecht, *Galileo*
  John Milton, *Paradise Lost*
  Edgar Allan Poe, *Eureka*
  Daniel Quinn, *Ishmael*
  Dawn Rodriguez and Myron G. Tuman, *Writing Essentials*
*William Shakespeare, *The Tempest*
  C. P. Snow, *Two Cultures and Second Look*
  Fraser Watts (ed.), *Science Meets Faith*

READING REQUIREMENTS:

Reading assignments marked with an asterisk in the syllabus should be read before that class period. In addition to the texts listed above, you will need to buy a packet of photocopied materials containing most of the additional readings; information will be provided about the purchase of this packet on the first day of class. The symbol in the syllabus indicates that the required reading is found only in the Assignments section of the course website.

WRITTEN REQUIREMENTS, DUE DATES, AND GRADE PERCENTAGES:

<table>
<thead>
<tr>
<th>ASSIGNMENT</th>
<th>% OF GRADE</th>
<th>DUE DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Literary Analysis</td>
<td>15</td>
<td>Sep 10</td>
</tr>
<tr>
<td>Library Assignment (Required)</td>
<td>--</td>
<td>Sep 17</td>
</tr>
<tr>
<td>Research Project Bibliography (Required)</td>
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<td>Sep 26</td>
</tr>
<tr>
<td>Midterm Exam</td>
<td>20</td>
<td>Oct  8</td>
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<tr>
<td>Short Thematic Paper Assignment (2 of 3; 5% each)</td>
<td>10</td>
<td>Both due Oct 29</td>
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<tr>
<td>Mike Neilson paper (“Einstein’s Quotation”)</td>
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<tr>
<td>Fisher Humphreys paper (Book Report: “Science Meets Faith”)</td>
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<tr>
<td>Joe Burns paper (Science Textbook Analysis and Critique)</td>
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<tr>
<td>Interim Research Project Progress Report (Required)</td>
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<td>Oct 17</td>
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<tr>
<td>Final Research Project Report/Poster Display</td>
<td>25</td>
<td>Dec  3</td>
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<tr>
<td>Final Exam</td>
<td>20</td>
<td>Dec 10</td>
</tr>
<tr>
<td>Attendance and Participation</td>
<td>10</td>
<td>Daily</td>
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SUMMER READING ASSIGNMENT:

During the summer you should read *The Tempest*, *Galileo*, and *Waiting for Godot*. These three plays will be the subject of your first written assignment. Ada Long and Rusty Rushton will lecture on the plays during the first week of class and provide written materials on the literary analysis assignment.
WEEKLY REVIEW SESSIONS (Optional):

Each Friday morning, from 10:00am until noon, has been set aside as an optional session for those students who may wish to meet further with faculty or who have questions about any lecture material. These sessions will take place in the upstairs seminar room.

Aug. 30  Dail Mullins
Sep. 6   Joe Burns
Sep. 13  Fisher Humphreys
Sep. 20  Mike Neilson
Sep. 27  Dail Mullins
Oct. 4   Mike Neilson
Oct. 11  Fisher Humphreys
Oct. 18  Joe Burns
Oct. 25  Mike Neilson
Nov. 1   Joe Burns
Nov. 8   Fisher Humphreys
Nov. 15  Dail Mullins
Nov. 22  Joe Burns

In addition, Ada Long and/or Rusty Rushton will meet with all interested students on Thursdays, 8:30am – 9:20am, to discuss composition, the written requirements of the course, and any other topics students may want to discuss.

FILMS (Optional):

Course-related films will be shown most Tuesday evenings at 6:00pm in the main lecture room of the Honors House (Check the course itinerary for film titles). Attendance at these is optional, but students can receive “Participation in Honors” credit and exams may include the option of writing about one or more of the films.

RESEARCH GROUPS AND PROJECTS:

On the first day of the course, each student in the class will be assigned to a Research Project Group together with 4-5 other students. Each of these groups in turn will be assigned a research project in one of the broad areas of science covered by the course curriculum (astronomy/physics; earth science/geology/meteorology; chemistry/life science; psychology/sociology). As in past years, each Honors student will be responsible for involving one or two Arrington Middle School (AMS) students in the planning and implementation of the various projects (i.e., 8-10 AMS students/group). This group activity will substitute for the more familiar term paper of alternate years.

These research projects will consist, in so far as possible, of real “hands-on” scientific investigations rather than simple library research, though a literature review of theory and past studies and/or techniques related to your topic will be necessary.

In addition to researching, planning, instructing, and involving the AMS students, and carrying out the various assigned projects, each group will be expected to formally present its results in the form of a physical display, or Poster Session, on the next to the last day of class (Dec. 3) As part of the formal Poster Session display, each group will provide a detailed written report of the project which specifically documents, among other things, anonymous evaluations of other group members.

An extensive handout with more detailed information about this component of the course will be provided to each student on the first day of class.

Driving instructions to Arrington Middle School from the Spencer Honors House are found at the end of this syllabus.
COURSE WEBSITE:

This year the Honors Program’s interdisciplinary course is again “web-enhanced,” which means that many of the course documents, announcements, lecture materials and reading assignments, as well as helpful external links will be available to you on-line. Please note that, for the first time, some required readings will be available only on-line. In addition, you will be using the Communication sections of the website to correspond with one another via email, to participate in discussion threads with other students in the class, especially those in your research group, and to share files with each other and the faculty. Participation in this course will require that you have Internet access and an email account, so if you do not yet have these please get them over the summer.

You will be given a complete set of instructions for accessing and navigating the course website on the first day of class.
## ORIGINS

### Introductory Perspectives

**Thursday, Aug. 22**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30am—12:15pm</td>
<td>Introductions, Announcements, Research Group Assignments, etc.</td>
</tr>
<tr>
<td>2:00pm—3:15pm</td>
<td>Faculty Introductions and Personal Perspectives</td>
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**Tuesday, Aug. 27**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>9:30am—12:15pm</td>
<td>“Creating One’s Own Universe” (Rusty Rushton)</td>
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<td></td>
<td>William Shakespeare, <em>The Tempest</em></td>
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<td>2:00pm—3:15pm</td>
<td>Organizational Meeting for Arrington Middle School Projects</td>
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<tr>
<td>6:00pm</td>
<td>Film: “The Tempest” (Rusty Rushton)</td>
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**Thursday, Aug. 29**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>9:30am—12:15pm</td>
<td>“Science, Society, and the Meaning of the Universe” (Ada Long)</td>
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<tr>
<td></td>
<td>Bertolt Brecht, <em>Galileo</em></td>
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<tr>
<td>2:00pm—3:15pm</td>
<td>“The End of Meaning in the Universe” (Ada Long, Rusty Rushton)</td>
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<td></td>
<td>Samuel Beckett, <em>Waiting for Godot</em></td>
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**Tuesday, Sept. 3**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30am—10:45am</td>
<td>“Where Are We? When Are We? Our Circumstance in Time and Space” (Dail Mullins)</td>
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<td></td>
<td>Ronald Pine, “Our Home in the Universe”</td>
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<td></td>
<td>Carl Sagan, “The Cosmic Calendar”</td>
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<td></td>
<td>Steven Weinberg, “A Designer Universe?”</td>
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<tr>
<td>11:00am—12:15pm</td>
<td>“Science and Religion” (Fisher Humphreys)</td>
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<td>W. Mark Richardson and Gordy Slack (eds.), “Charles Townes: Testing Faith, Wrestling with Mystery”</td>
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<tr>
<td>2:00pm—3:15pm</td>
<td>“The Nature of Science” (James Rachels)</td>
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<tr>
<td>6:00pm</td>
<td>Film: “Mindwalk: A Film for Passionate Thinkers” (Ada Long)</td>
</tr>
<tr>
<td>Time</td>
<td>Event</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
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</tbody>
</table>
| 9:30am—12:15pm | “The Nature of Science Class” (Joe Burns)  
Steven Zemelman, Harvey Daniels and Arthur Hyde, “Best Practices in Science” |
| 2:00pm—3:15pm | “A Child’s Question: Why is the Night Sky Black?” (Dail Mullins)                               |
| 6:00pm       | First Thursday Lecture: "Hindu Cosmology” (Dr. Narain Das Saxena)                                |
I. The Origin of the Universe

**Tuesday, Sept. 10**

9:30am—10:45am  “Time, Ladies and Gentlemen, Please” (Mike Neilson)
Aldous Huxley, “On the Method of Zadig”

11:00am—12:15pm  “The Meaning of Time in the Jewish and Christian Faiths” (Fisher Humphreys)
Paul Tillich, “The Right Time”

1:45pm—3:00pm  Visits to Arrington Middle School

6:00pm  Film: “2001: A Space Odyssey” (Dail Mullins)

**Thursday, Sept. 12**

9:30am—12:15pm  “The Origin and Evolution of the Universe” (Dail Mullins)
Timothy Ferris, “Blast from the Past”
Stephen Hawking, “The Expanding Universe”

2:00pm—3:15pm  “The Creation of the Universe by God” (Fisher Humphreys)
Genesis 1-3; Job 38; Psalm 24:1-2; Isaiah 45:1-13 (*New English Bible*)

**Tuesday, Sept. 17**

9:30am—10:45am  “Eureka: The Cosmology of Edgar Allan Poe” (Ada Long)
Edgar Allan Poe, “Eureka”

11:00am—12:15pm  “Falling into Matter: Myths of Substantiation” (Rusty Rushton)
A.R. Ammons, “The Strait”
“Singling and Doubling Together”
from “Tombstones”: 19, 20, 22, 25, 29
John Donne, “Air and Angels”

2:00pm—3:15pm  “The Origin and Evolution of Galaxies” (Perry Gerakines)
JPL/NASA Origins site, “Galaxies”

6:00pm  Film: “Apollo 13” (Joe Burns)

**Thursday, Sept. 19**

9:30am—12:15pm  “The Origin of the Elements” (Perry Gerakines)

2:00pm—3:15pm  Visit to the Samford University Planetarium (Dr. George Atchley)
II. The Origin of the Solar System and Earth

**Tuesday, Sept. 24**

9:30am—12:15pm  “The Age of the Earth and Other Solar Objects” (Mike Neilson)
  “Isotopes and Their Decay”

1:45pm—3:00pm  Visits to Arrington Middle School

6:00pm  Film: “Journey to the Center of the Earth” (Mike Neilson)

**Thursday, Sept. 26**

9:30am—10:45am  “The Solar System—NASA/JPL Imagery” (Dail Mullins)

11:00am—12:15pm  “The Origin and Evolution of Planetary Systems” (Dail Mullins)
  Royal Greenwich Observatory, “The Origin of the Solar System”
  Mark Washburn, “Solar System Origins”

2:00pm—3:15pm  “Hades: The First Billion Years on Earth” (Mike Neilson)

**Tuesday, Oct. 1**

9:30am—12:15pm  “The Archaean and the Origin of Plate Tectonics” (Mike Neilson)
  USGS, “Understanding Plate Motions”

2:00pm—3:15pm  “Singing the Spheres into Being: Modern Creation Myths” (Rusty Rushton)
  May Swenson, “Out of the Sea, Early”
  “Once There Were Glaciers”
  “The Day Moon”
  “What I Did on a Rainy Day”
  Gerald Manley Hopkins, “I am Like a Slip of Comet”
  Sharon Olds, “The Glass”

6:00pm  Film: “2010: The Year We Make Contact” (Fisher Humphreys)
**Thursday, Oct. 3**

9:30am—12:15pm  “Chaos, Darkness, and a Golden Pendant: A Religious Epic of Creation”  
(Ada Long)  
John Milton, “Paradise Lost” (Books 1 and 2)

2:00pm—3:15pm  “A Tale of Three Planets” (Mike Neilson)

6:00pm  First Thursday Lecture: “Hot, Spicy, Cold, Nasty: Life in Extreme Environments”  
(Dr. David Kraus and Dr. Jeannette Doeller)

**Tuesday, Oct. 8**

9:00am—6:00pm  **MIDTERM EXAM**
III. The Origin and Evolution of Life

Thursday, Oct. 10

9:30am—10:45am  “How Old Is the Grand Canyon and How Did It Form? Two Contrasting Interpretations” (Mike Neilson)

11:00am—12:15pm  “Who Cares How Old the Grand Canyon Is?” (Fisher Humphreys)
                 Henry Morris, “Science and the God of Creation”
                 Michael Behe, “Darwin Under the Microscope”
                 John Polkinghorne, “Beyond the Big Bang”
                 George Liles, “The Faith of an Atheist”

2:00pm—3:15pm  “What Is Life?” (Dail Mullins)
                 Brian Silver, “Life: The Molecular Battle”

Tuesday, Oct. 15

9:30am—12:15pm  “The Origin of Life on Earth” (Dail Mullins)
                 Richard Fortey, “Dust to Life”

1:45pm—3:00pm  Visits to Arrington Middle School

6:00pm  Film: “The Race For the Double Helix” (Dail Mullins)

Thursday, Oct. 17

9:30am—12:15pm  “Darwin’s Theory of Evolution by Natural Selection” (Dail Mullins)
                 James Rachels, “Darwin’s Discovery”
                 Stephen Jay Gould, “Evolution as Fact and Theory”
                 Robert Cooper, “The Goal of Evolution Instruction: Should We Aim for Belief or Scientific Literacy?”

2:00pm—3:15pm  “An Ethics of Evolution” (Ada Long)
                 Daniel Quinn, Ishmael
**Tuesday, Oct. 22**

9:30am—10:45am  “The Rise of Insects: An Ascension That Would Make Any Deity Proud”  
   (Joe Burns)  
   Thomas Eisner and E.O. Wilson, “The Conquerors of the Land”

11:00am—12:15pm  “The Christian Understanding of Life on Earth” (Fisher Humphreys)  
   John Polkinghorne, “Theism”

2:00pm—3:15pm  “The Non-Morality of Nature: In Space, No One Can Hear You Scream”  
   (Dail Mullins)  

6:00pm  Film:  “Alien” (Ada Long)

**Thursday, Oct. 24**

9:30am—10:45am  “My Friend the Cockroach and Other “Tails” of Adaptation” (Joe Burns)

11:00am—12:15pm  “The Great Extinctions: The Practically Perfect Paper” (Mike Neilson)  

1:00pm—3:15pm  Field Trip to Birmingham Zoo

**Tuesday, Oct. 29**

9:30am—10:45am  “Surviving the Game: Why Insects Will Win” (Joe Burns)  
   Carl Zimmer, “Coevolution: Weaving the Web of Life”

11:00am—12:15pm  “ALH84001: Did Life on Earth Come From Mars?” (Dail Mullins)  
   Carl Sagan, “The Gates of the Wonder World Open”

1:45pm—3:00pm  Visits to Arrington Middle School

6:00pm  Film:  “Inherit the Wind” (Mike Neilson)
IV. The Origin of the Human Species

Thursday, Oct. 31

9:30am—3:15pm  Staggered Visits to the Human Gross Anatomy Lab
                 Students Genetic Profile Exercise

Tuesday, Nov. 5

9:30am—12:15pm  “The Current Picture of Human Evolution” (Dail Mullins)
                 Richard Leakey, “The Human Bush”
                 Steven Pinker, “Revenge of the Nerds”
                 Pope John Paul II, “Open Letter to the Pontifical Academy of Sciences”

2:00pm—3:15pm  “Recent Climatic History of the Earth” (Mike Neilson)

6:00pm  Film: “Quest for Fire” (Fisher Humphreys)

Thursday, Nov. 7

9:30am—10:45am  “Original Humans as Noble Savages: Rousseau and Romantic Poetry”
                 (Rusty Rushton)
                 Jean-Jacques Rousseau, from Discourse on the Origin of Inequality
                 William Wordsworth, “Resolution & Independence”
                 D. H. Lawrence, “The Snake”
                 Seamus Heaney, “The Tollund Man”
                 “Bog Queen”

11:00am—12:15pm  “The Origin of the Races” (Dail Mullins)
                 Richard Leakey, “The Origin of Modern Humans”

2:00pm—3:15pm  “Human Evolution and Biblical Religion” (Fisher Humphreys)
                 Pope John Paul II, “Open Letter to the Pontifical Academy of Sciences”

6:00pm  First Thursday Lecture: “Religion, Science and Human Origins” (Panel)
         Rabbi Jonathon Miller  Dr. Scott Brande
         Dr. Dennis Sansom  Dr. Lee Meadows
V. The Origin of Consciousness

Tuesday, Nov. 12

9:30am—10:45am  “Original Humans as Not-so-Noble Savages: Freud and Modern Poetry”  
(Rusty Rushton)  
Sigmund Freud, from *Totem and Taboo*  
May Swenson, “Motherhood”  
Theodore Roethke, “Weed Puller”  
Edward Hirsch, “A Painting of Pan”  
Mark Strand, “Eating Poetry”  
Richard Wilbur, “Man Running”  
Gerald Stern, “Waving Good-Bye”

11:00am—12:15pm  “Consciousness: Psychological Correlates” (Michael Sloane)

1:45pm—3:00pm  Visits to Arrington Middle School

6:00pm  Film: “A Beautiful Mind” (Rusty Rushton)

Thursday, Nov. 14

9:30am—10:45am  “Consciousness: Biochemical Correlates” (Michael Friedlander)

11:00am—12:15pm  “God, Community, and Human Minds” (Fisher Humphreys)  
Nancey Murphy, “Human Nature: Historical, Scientific and Religious Issues”  
Nancey Murphy, “Nonreductive Physicalism: Philosophical Issues”

2:00pm—3:15pm  “Information Processing Theory” (Joe Burns)

Tuesday, Nov. 19

9:30am—12:15pm  “Falling Into Consciousness” (Ada Long)  
John Milton, “Paradise Lost” (Books 9 and 10)

2:00pm—3:15pm  “An Evolutionist Looks at Religion” (Dail Mullins)  
Sharon Begley, “Religion and the Brain”

6:00pm  Film: “AI” (Joe Burns)
Thursday, Nov. 21

9:30am—10:45am  “SETI” (Dail Mullins)
   The Search for Extraterrestrial Intelligence” (Carl Sagan and Frank Drake)

11:00am—12:15pm  “The Two Cultures” (Faculty Panel and Class Discussion)
   C.P. Snow, “The Two Cultures” and “Second Look”

2:00pm—3:15pm  “Consciousness in Action: Ordering the World” (Joe Burns)
   Lawrence Lowery, “The Biological Basis of Thinking and Learning”

Tuesday, Nov. 26

9:30am—10:45am  “Could a Machine Be Conscious?” (Dail Mullins)
   Timothy Ferris, “Thinking Machines”
   Stephen Laws, “Could a Machine Think?”
   Ray Kurzweil, “The Coming Merging of Mind and Machine”

11:00am—12:15pm  “A Christian World View” (Fisher Humphreys)

1:45pm—3:00pm  Visits to Arrington Middle School

6:00pm  Film:  “Contact” (Dail Mullins)

Thursday, Nov. 28  THANKSGIVING

Tuesday, Dec. 3

9:30am—3:15pm  SCIENCE FAIR AT SPENCER HONORS HOUSE
   (Disassemble and safeguard project displays for later use at Arrington Middle School)

Thursday, Dec. 5

9:30am—10:45am  Wrap-Up

11:00am—1:00pm  Finish Setting-Up Project Displays at Arrington Middle School
1:00pm—3:00pm  Arrington Middle School Students View Project Displays

6:00pm—7:30pm  Parents of Arrington Middle School Students View Projects

Tuesday, Dec 10

9:00am—6:00pm  FINAL EXAM
Thursday, Dec 19

6:00pm—???

HOLIDAY PARTY AT ADA’S LOFT

Directions to Arrington Middle School

From the Honors House, go west on 10th Ave. So. to Green Springs Highway
Turn left and go about a half-mile to Green Springs Ave (Just past George Ward Park, on the left)
Turn right, go over the I-65 viaduct, and continue as the road becomes Dennison Ave
Continue on Dennison Ave, past the Elmwood Cemetery grounds on the right, until the road ends (and forks) at Jefferson Ave
Bear left onto Jefferson Ave and go almost to the large viaduct you see ahead of you
Just past the 3rd traffic light (counting the one at Dennison and Jefferson), turn left onto 19th Pl SW
Go one block to the entrance to the Arrington Middle School parking lot on your right
Park in the lot and go in the far right-hand door; the school office is to your immediate left