

**2<sup>nd</sup> Annual UR Symposium on  
*Agrobacterium* Genomics**

December 11, 2000

Alice Haynes Room, UR Commons



**Symposium Organizers:** Brad Goodner,  
Jeff Elhai, & Paula Lessem

**Symposium Presenters:** Students of the  
2000 BIOL213 Genetics course

**This Year's Special Guest:** Anne De Groot, M.D., Brown  
University School of Medicine & EpiVax, Inc. (President/CEO)

Welcome! This poster symposium is the end-product of semester-long projects conducted by the students of BIOL213 (Genetics). Each pair of students was given a sequence from the genome of the bacterium *Agrobacterium tumefaciens*. The genome of this pathogen of plants and animals is being sequenced and characterized right here on the UR campus. The students are the first researchers to analyze many of these sequences. They had to determine if there were any potential genes present in their sequence, if those potential genes resemble any known genes, and then propose 2-3 experiments that would allow future researchers to determine the function of one of their genes. Today, the students are ready to tell you their stories, so feel free to jump right into the conversation. Enjoy!

**9:20 – 9:45**

**A1: Erin Brandt & Robin Hoffman**

Evidence for an Oligo Alginate Lyase in *Agrobacterium tumefaciens*

**A3: Kelly Hackett & Dabney DeHaven**

The DR is in! Significance of Dihydrofolate Reductase in *A. tumefaciens*

**A5: Sarah Bender & Alexis Jeannotte**

Role of *virB* Operon in the Virulence of *A. tumefaciens* on *Kalanchoe diargremontiana*

**A7: Shelby Tiggett & Sarah Tinsley**

Qualitative Determination of Alginate Lyase Activity in *A. tumefaciens*

**A9: Tara Arness**

Identification of a Putative Polyketide Synthase: Structural Determination of a Biosynthetic Product

**A11: Patrick Phillips & Josh Piekarski**

Beyond *E. coli*: Testing a Potential Lactose Permease in *A. tumefaciens*

**A13: Matt Meketa**

Why Would *A. tumefaciens* Have a Bacteriophage Gene in its Genome?

**A15: Gabe Hillegass & Jennifer Dupont**

Regulation of the Histidine Utilization Operon in *A. tumefaciens*

**A17: Kristin Cavanaugh & Tom Sculley**

Characterization of a Putative Phytochrome Photoreceptor in *A. tumefaciens*

**9:45 – 10:10**

**A2: Michael Watrous & Kate Williams**

Is Lit Activator Protein Essential for Proline Metabolism in *A. tumefaciens*?

**A4: Laura Liefer**

Degradation of Saccharopine, a Specialized Food Source, During *A. tumefaciens* Infection of Plant Tumors

**A6: Alanna Rice**

Role of Thiolase in the Degradation of Acetoacetate for Growth of *A. tumefaciens*

**A8: Amorette Rofe & Carolyn Clements**

ParB: A Chromosome Partitioning Protein

**A10: Lynne Stroy & Amy McCurley**

Evidence for a ParA Protein in *A. tumefaciens*

**A12: Kevin Nowicki & John Baker**

Characterization of a Possible GTP-binding Protein in *A. tumefaciens*

**A14: Natalie Karp & Kristen Samuhel**

Evidence for a Gene Encoding a Bacteriophage Prohead Protease in the Genome of *A. tumefaciens*

**A16: Dana Leonard**

Characterization of an *A. tumefaciens* Homolog of the *Sinorhizobium meliloti nfe* Gene

**11:30 – 11:55**

**B1: Tiffany Pender & Deanna Ward**

The *fmt* Gene & Its Role in *Agrobacterium tumefaciens*

**B3: Gigi Smith & Nathan Henderson**

Confirmation of HtrA as a heat shock protein in *A. tumefaciens*

**B5: Mike Wolf & Rachel Shrewsbury**

Identification & Functional Characterization of a Serine/Threonine Protein Kinase in *A. tumefaciens*

**B7: Liz Galvin & Julia Conn**

Does *A. tumefaciens* Have an Active *agaE* Gene ?

**B9: Jessica Keiser & Jeff Vergales**

Role of Phosphoserine Phosphatase in Serine Biosynthesis of *A. tumefaciens*

**B11: Rob Mentz & Chris Musetti**

Experimental Analysis of a Proposed Urease Gene in *A. tumefaciens*

**B13: Alisa Hewitt & Danielle Morris**

Possibility of Multi-drug Efflux Transporter Proteins in *A. tumefaciens*

**B15: Joanna Dallam & Renee Szymanik**

Characterizing the Role of HflK in *A. tumefaciens*

**B17: Justin Meunier & Lauren Schaefer**

Experimental Analysis of a Proposed P-type ATPase in *A. tumefaciens*

**B19: Anne Rettig & Sherry Sikora**

Characterization of a Transport Permease in *A. tumefaciens*

**B21: Becky Sullivan & Scott Annett**

Regulation of Purine Biosynthesis by Glutamine Synthetase: A Possibility for Chemotherapeutic Intervention

**B23: Madeline Amato & Barrett Wingard**

Can the Levanase Operon of *A. tumefaciens* Complement *E. coli* Phage-Infection-Resistant Mutants?

**11:55 – 12:20**

**B2: Kelly Heilmann & Courtney Hoey**

HflC Protein in *Agrobacterium tumefaciens*

**B4: Evan Barniskis & Tayseer Chowdhry**

The Role of Cyclohexanol Dehydrogenase in *A. tumefaciens*

**B6: Carrie Forstmann & Verena Leismann**

Analysis of a Putative *pmi* Gene from *A. tumefaciens*

**B8: Sarah Glick**

Role of Thiolase in the Degradation of Acetoacetate for Growth of *A. tumefaciens*

**B10: Lauren Oleson & Catherine Parker**

Phospholipase C in *A. tumefaciens*

**B12: Amanda Spence**

Identification of a Putative Polyketide Synthase: Structural Determination of a Biosynthetic Product

**B14: Dani Falter & Sarah Hartigan**

Genetic Vaccines: A Safer Alternative?

**B16: Elizabeth Cook**

Why Would *A. tumefaciens* Have a Bacteriophage Gene in its Genome?

**B18: Kathryn Winslow & Emily Stowe**

Characterization of the *pks* Gene from *A. tumefaciens*

**B20: Randy DeMartino & Allie Lundy**

Characterization of a Possible Polyketide Synthase Gene in *A. tumefaciens*

**B22: Vlad Daoud & John Oxley**

Characterizing the Substrate Specificity of a Transport Permease

**B24: Adriane Boyle and Jesse Pinchot**

Experimental Analysis of a Putative Cinnamoyl Ester Hydrolase in *A. tumefaciens*

In connection with the symposium, you are invited to attend the Department of Biology Seminar today at 12:30 pm in Gottwald C-B01.

**"Using Immunology & Genomics to Develop Novel Vaccines"**

**Anne De Groot, M.D.  
Brown University School of Medicine  
& President/CEO of EpiVax, Inc.**

In the words of Dr. De Groot, a great vaccine should "teach the immune system the language of a whole pathogen using just a few words". Dr. De Groot and her coworkers have been involved in determining which "words" (antigens) the immune system recognizes best. Now, they are combining this knowledge with the "library" of information available in the completed genomic sequences of many pathogens. Dr. De Groot will describe how the combination of immunology and genomics is reducing the discovery time for vaccines and increasing the likelihood that those vaccines will be highly effective.